Sessional Papers

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

No. 1.

WEEKLY REPORT OF DIVISIONS

IN

COMMITTEE OF THE WHOLE.

(EXTRACTED FROM THE MINUTES.)

WEDNESDAY, 20 *JANUARY*, 1904.

No. 1.

ELECTORATES REDISTRIBUTION BILL.

Clauses 1, 2, and 3 having been dealt with,—

Clause 4. In making any such distribution, the divisor shall, for the purpose of ascertaining the quota of electors, be ninety, with a margin of allowance not exceeding one thousand "two" hundred; and no reasons for the addition to or deduction from the quota of any such margin of allowance need be given or appended to any report by any commissioners making such distribution. (*Read.*) Quota and margin of allowance

Motion made (*Mr. Affleck*), to leave out from line 3 the word "two" and insert the word "five,"—instead thereof.

Question proposed,—That the words proposed to be left out stand part of the clause.

And the Committee continuing to sit after Midnight,—

THURSDAY, 21 *JANUARY*, 1904, A.M.

Question put,—That the word proposed to be left out stand part of the clause.

Committee divided.

Ayes, 71.		Noes, 31.
Mr. Kidd,	Mr. Quirk,	Dr. Ross,
Mr. W. F. Hurley,	Mr. McCoy,	Mr. Thomas Fitzpatrick,
Mr. Sullivan,	Mr. Winchcombe,	Mr. Norton,
Sir John See,	Mr. Charlton,	Mr. J. C. L. Fitzpatrick,
Mr. O'Sullivan,	Mr. Brunker,	Mr. Haynes,
Mr. Crick,	Mr. Hawthorne,	Mr. Reymond,
Mr. Jessep,	Mr. Thomas,	Mr. Levien,
Mr. Daniel O'Connor,	Mr. Jones,	Mr. Richards,
Mr. Dacey,	Mr. Miller,	Mr. Gillies,
Mr. Hollis,	Mr. Edden,	Mr. Meagher,
Mr. Lee,	Mr. Mackenzie,	Mr. Briner,
Mr. Latimer,	Mr. Estell,	Mr. Donaldson,
Mr. Quinn,	Mr. Gilbert,	Mr. McFarlane,
Mr. Ashton,	Mr. Rose,	Mr. MacMahon,
Mr. Wade,	Mr. Millard,	Mr. Newman,
Mr. Davidson,	Mr. Moxham,	Mr. Williams,
Mr. Scobie,	Mr. Carruthers,	Mr. Phillips,
Mr. Broughton,	Mr. Hogue,	Mr. Sleath,
Mr. Anderson,	Mr. Levy,	Mr. Young,
Mr. Kelly,	Mr. Carroll,	Mr. Barnes,
Mr. Clara,	Mr. Mahony,	Mr. Pyers,
Mr. Ferguson,	Mr. Wood,	Mr. Evans,
Mr. E. M. Clark,	Mr. Garland,	Mr. Brinsley Hall,
Mr. McGowen,	Mr. Morton,	Mr. Byrne,
Mr. John Storey,	Mr. J. F. Smith,	Mr. Thomson,
Mr. Holman,	Mr. Price,	Mr. Gormly,
Mr. Law,	Mr. Nobbs,	Mr. McLaurin,
Mr. Moore,	Mr. David Storey,	Mr. Nicholson,
Mr. Stirton,	Mr. John Hurley,	Mr. Coleman.
Mr. D. R. Hall,	Mr. Dick,	*Tellers,*
Mr. Power,	Mr. Fegan,	Mr. Affleck.
Mr. Fallick,	Mr. Cohen.	Mr. Collins.
Mr. Nielsen,	*Tellers,*	
Mr. Burgess,		
Mr. Eden George,	Mr. Oakes,	
Mr. Nelson,	Mr. Fleming.	
Mr. Macdonald,		

Word stands.

Clause, as read, agreed to.

And the remaining clauses of the Bill having been dealt with,—

On motion of Mr. Crick, the Chairman left the Chair to report the Bill, without amendment, to the House.

R. W. ROBERTSON,
Clerk Assistant.

Sydney: William Applegate Gullick, Government Printer.—1904.

[3d.]

32949 21—

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

No. 1.

REGISTER OF PUBLIC BILLS ORIGINATED IN THE ASSEMBLY DURING THE SESSION OF 1904.

Short Titles.	By whom initiated.	Originated in Committee of the Whole.	Message from Governor, recommending provision for.	Ordered.	Presented and read 1°.	Negatived on motion for 2°.	Read 2° and Committed.	Reported.	Recommitted.	Reported.	Report adopted.	Read 3°.	Passed, and sent to Council for concurrence.	Agreed to by Council without Amendment.	Assent.	Remarks.
Electorates Redistribution	Sir John See	19 Jan.	19 Jan.	19 Jan.	19 Jan.	....	20 Jan.	21 Jan. a.m.	....	....	21 Jan. a.m.	21 Jan. a.m.	21 Jan. a.m.	21 Jan.	*	Standing Orders suspended to admit of Bill being proceeded with as far as the second reading at one sitting of the House, 19 Jan., 1904.
Law of Evidence	do	....	....	....	19 Jan.	....	....	....	....	....	....	....	....	....	....	*Pro formâ* Bill.

* Assent not reported.

Legislative Assembly Office,
Sydney, 21st January, 1904.

RICHD. A. ARNOLD,
Acting Clerk of the Legislative Assembly.

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

COMMISSION ON PRIMARY, SECONDARY, TECHNICAL, AND OTHER BRANCHES OF EDUCATION.

INTERIM REPORT

OF THE

COMMISSIONERS

ON

CERTAIN PARTS OF PRIMARY EDUCATION.

CONTAINING THE

SUMMARISED REPORTS, RECOMMENDATIONS, CONCLUSIONS, AND EXTENDED REPORT OF THE COMMISSIONERS;

WITH ILLUSTRATIONS, ETC.

Ordered by the Legislative Assembly to be printed, 21 *January,* 1904.

SYDNEY: WILLIAM APPLEGATE GULLICK, GOVERNMENT PRINTER.

1904.

19862 *15—(a) [10s. 6d.]

By His Excellency The Honourable SIR FREDERICK MATTHEW DARLEY, Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Lieutenant-Governor of the State of New South Wales and its Dependencies, in the Commonwealth of Australia.

To

GEORGE HANDLEY KNIBBS, Esquire, F.R.A.S., of Sydney, in the State of New South Wales,

Greeting :—

KNOW you, That reposing great trust and confidence in your zeal, discretion, and integrity I, SIR FREDERICK MATTHEW DARLEY, as Lieutenant-Governor of the State of New South Wales, with the advice of the Executive Council thereof, do, by these presents, appoint you, the said GEORGE HANDLEY KNIBBS, Esquire, F.R.A.S, in conjunction with JOHN WILLIAM TURNER, Esquire, to proceed to Europe and America for the purpose of inquiring into existing methods of instruction in connection with primary, secondary, technical, and other branches of education, and of recommending for adoption whatever improvements you may consider might with advantage be introduced into the State of New South Wales.

Initd.—J.M.G.

Given under my Hand and the Public Seal of the State, at Sydney, in New South Wales
(L.S.) aforesaid, this tenth day of April, in the year of Our Lord one thousand nine hundred and two, and in the second year of His Majesty's reign.

FREDK. M. DARLEY,
Lieutenant-Governor.

By His Excellency's Command,
JOHN SEE.

Entered on Record by me, in REGISTER OF PATENTS, No. 24, page 29, this eleventh day of April, one thousand nine hundred and two.

For the Colonial Secretary and Registrar of Records,
CRITCHETT WALKER,
Principal Under Secretary.

By His Excellency The Honourable SIR FREDERICK MATTHEW DARLEY, Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Lieutenant-Governor of the State of New South Wales and its Dependencies, in the Commonwealth of Australia.

To

JOHN WILLIAM TURNER, Esquire, of Sydney, in the State of New South Wales,

Greeting :—

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FREDK. M. DARLEY,
Lieutenant-Governor.

By His Excellency's Command,
JOHN SEE.

Entered on Record by me, in REGISTER OF PATENTS, No. 24, page 28, this eleventh day of April, one thousand nine hundred and two.

For the Colonial Secretary and Registrar of Records,
CRITCHETT WALKER,
Principal Under Secretary.

1903.

NEW SOUTH WALES.

COMMISSION ON PRIMARY, SECONDARY, TECHNICAL, AND OTHER BRANCHES OF EDUCATION.

INTERIM REPORT OF THE COMMISSIONERS ON CERTAIN PARTS OF PRIMARY EDUCATION.

To His Excellency Sir Harry Holdsworth Rawson, Admiral in the Royal Navy, Knight Commander of the Most Honourable Order of the Bath, Governor of the State of New South Wales and its Dependencies, in the Commonwealth of Australia.

May it please Your Excellency,—

We, your Commissioners, appointed on the 11th day of April, 1902, to proceed to Europe and America for the purpose of inquiring into existing methods of instruction in connection with primary, secondary, technical, and other branches of Education, and of recommending for adoption whatever improvements you may consider might with advantage be introduced into the State of New South Wales, have now the honour to submit a Report on certain parts of primary education, its organisation and administration.

Before the issue of the Commission a letter to the following effect was received by *each* of the Commissioners from the Under Secretary of the Department of Public Instruction :—

Department of Public Instruction, N.S.W.,
Sydney, 8 April, 1902.

Sir,

In connection with your appointment as Commissioner of Education, I am asked by Mr. Perry, the Minister of Public Instruction, to send you the following directions :—

It is not desired that you should report on the general systems of education in force in the towns or countries you visit, as such information can be obtained from official reports open to all readers. If, however, in any subjects taught, you find the methods or results in any European or American Schools superior to our own, you should state in detail what you consider is the cause of the difference, and how improvement may be made here. If you find that the advantage in any subjects is on the side of this State, you should report why, in your opinion, this is so.

In visiting Technical, Commercial, Continuation, or any other schools, you should take special notice of subjects taught which have not been introduced into New South Wales, but which might with advantage be introduced. In reporting on these matters you should deal fully with the course of study, the buildings, the hours of attendance (distinguishing between day and night classes), the enrolment, the general age of pupils, whether attendance is compulsory or voluntary ; if the latter, whether it is the rule or the exception for students to complete their whole course, or to discontinue their study after the newness wears off, the teaching staff, salaries paid, total expenditure, students' fees, and other sources of income, and generally should collect such information as would assist the Government of this State, if it were thought desirable, to establish schools of the kind described.

You should make yourselves acquainted with the details of the training of Teachers and Pupil Teachers, and report on the scope of their examinations.

You should not divide your work in making inquiries, but both should be present at every visit or inspection, and in your *interim* or final reports the matters upon which you agree should be signed by both. In cases where you arrive at different conclusions, each should state his own views above his own signature.

After commencing your inquiries, a short fortnightly diary should be posted to the Under Secretary, stating what visits have been made during the period, and at the end of each month a brief interim report on work done should be sent, not for publication, but for the information of the Minister.

It is not desirable that you should give lectures or engage in public discussions.

It will be left to your own judgment, when you are on the spot, to select the places to be visited; but, speaking broadly, you are not required to visit any country or town where it is generally recognised that there is little or nothing to be learned in connection with the objects of your journey.

. . . . . .

Generally, it is the wish of the Minister that you should report on any matter that you think may be of value to the Department. This may be done in your final comprehensive report.

I have the honour to be,

Sir,

Your most obedient servant,

(Signed) J. C. MAYNARD,

Under Secretary.

G. H. Knibbs, Esq., F.R.A.S.

J. W. Turner, Esq.

We left Sydney on 12th April, last year—1902—and returned on 23rd February of this year, having travelled through the United Kingdom, France, Switzerland, Italy, Germany, Belgium, Holland, Denmark, Norway, Sweden, Finland, Russia, Bohemia, Austria, Hungary, the United States and Canada, visiting various educational institutions and conferring with distinguished educationists.

It is undesirable, in your Commissioners' opinion, to delay certain improvements which your Commissioners recommend for adoption, until sufficient time has elapsed for the preparation of the full report. This report, therefore, does not traverse the whole subject-matter of inquiry, but deals only with certain features of primary education, which appear to your Commissioners to demand attention as early as possible.

Summarised Report on Certain Parts of Primary Education.

I.

GENERAL.

G. H. KNIBBS AND J. W. TURNER.]

1. *The Scope of the Present Report.*—An inquiry into practically all branches of education is necessarily an elaborate task, involving three elements, (1) The subject-matter of education; (2) the organisation of instruction; (3) the administration.

It was necessary to consider these three for the following reasons, viz.:—

(*a*) The subject-matter is not identical in substance, form, or range in different countries;

(*b*) The general plan of instruction differs; and moreover

(*c*) The administrative scheme, by means of which the general plan is made best to serve its object, is very variously organised.

These matters are more fully set forth for certain parts of primary education in Chapters I to LVIII of the extended Report.

It

It should be observed that the scope of inquiry, to determine the organisation of primary education alone, must necessarily be comprehensive, and a purview of the higher education to which it must lead, for those whose circumstances and ability admit of their advance, is essential. For the unity of educational organisation demands that the *primary system shall be properly adjusted to the higher.*

2. *Scheme of Extended Report.*—It has been thought desirable to discuss the many questions, the consideration of which was essential in the course of the Commissioners' investigations, in a series of separate chapters, which may be regarded as constituting the body of this Report. Seeing that the Commissioners had necessarily to traverse a considerable range of subjects, and examine a large number of documents, this course was the only practicable one by which the appearance of the Report could be expedited. *Neither Commissioner has attempted to cover the whole range himself.*

The several chapters are either reports upon the details of the visits of educational institutions, or are monographs on the scheme of work therein, or upon subjects of special importance.

In order to enable each Commissioner to freely express his views, the various chapters have been written by the Commissioners independently, the name of the writer being indicated beneath the title. For this reason each Commissioner is responsible only for the facts and conclusions set forth in the chapters written by himself, and is not responsible for those appearing in the chapters written by his fellow-Commissioner. This proceeding secured whatever advantage was to be derived from independent study of the important question of public education. To some extent, division of labour was also made possible thereby, thus considerably economising time.

3. *Time involved in investigation.*—In regard to the time devoted to the investigation, it ought to be said that however long it may appear, it has been really *inadequate.* The Commissioners felt that their duty could not be properly discharged unless they undertook a thorough study of educational systems of the lands through which they had travelled, and unless they disclosed in the Report sufficient evidence to shew the high character of education in those countries. It is by contrast alone that we can justly estimate where we stand educationally, and only by realising the extent of our defects that we can hope to progress.

The letter of instruction, dated April, 1902, previously referred to, carries with it at least a *virtual* implication that a complete examination of educational systems of other countries was unnecessary, and states that "such information can be obtained from official reports *open to all readers.*" To this statement the Commissioners must enter a respectful demurrer.

Had the educational system of the State of New South Wales been substantially perfect, and had it, therefore, needed but slight modification in regard to detail, such direction would have been applicable. In view of the fact, however, that important reform has appeared to the Commissioners to be necessary, it was incumbent on them to report on educational systems as a whole, and to compare education in New South Wales with the whole scheme of education in other countries.

For this reason, both the details *and the system itself* should be regarded as under review in this Report.

A comparison of the time occupied by the Commission over so extensive a task, with the time occupied by other Educational Commissions dealing with a much more limited educational field, will reveal the fact that the time spent has been, as said, insufficient. The urgency of reform, however, will condone the effort of the Commissioners to discharge their task as expeditiously as possible; and, at least, the place of our educational system among others has been determined by them with sufficient accuracy for practical purposes, viz., to outline the features of that reform through which alone it can hope to reach the plane of American and European education.

4. *Scheme of Summarised Report.*—Although it was necessary to set out in considerable detail, some part of the basis of facts, upon which the opinions of the Commissioners have been founded, both for the purpose of illustrating the difference

between

between Continental and American primary education, and that of this State, and also for the purpose of affording, as far as possible, the opportunity for the formation of independent opinions, it is very difficult, in an extensive document, to bring into clear relief the real issue. The aim, therefore, of this summary, will be to present a sketch of the whole question, and of the conclusions reached; and detail will generally be ignored, as tending to obscure the main issue.

5. *Coincidence and divergence of view.*—A critical study of the chapters written by the Commissioners would, of course, reveal the extent of the coincidence and divergence of their views. It was considered desirable, however, that all agreement or difference should be brought into prominence in this summary, and an endeavour has been made to do this.

The logical consequences of the coincidence or divergence of view are disclosed in the detailed recommendations of each Commissioner. They also appear to some extent in the Synopsis of Conclusions forming an appendix to this summary.

It was not to be expected that an independent study should lead to absolutely identical views, and it is believed that the best interests of public education will be served by each Commissioner fully stating his own opinion.

It may be added that the detailed conclusions, at which the Commissioners have arrived, are in general set out at the end of the various chapters, and their general drift will appear in this Summarised Report, the synopsis of conclusions herein being somewhat more complete than a mere aggregation of the conclusions set forth at the end of each chapter.

6. *Visits in Australia.*—Before leaving Sydney, the Carpenterian and Parramatta Reformatories, the "Sobraon" boys' training-ship, several of the leading public-schools, and the Technical College, Sydney, were visited. Calls were made on the Consuls of the different countries, through which it was proposed to travel, and their advice was sought.

The Commissioners were met by these gentlemen in the kindliest possible way, and afforded valuable advice and introductions. Acknowledgments of their courteous services will be found in Chapter I of the full Report. In passing through Melbourne, Adelaide, Fremantle, and Perth the opportunity of visiting the Departments of Education, of seeing something of their school organisation, and of ascertaining their school-law, and the drift of their opinion, was embraced, and acknowledgment of the kind assistance rendered is also made in Chapter I.

It may be added that, since the return of the Commissioners, several primary schools have been visited, including three of very recent construction.

7. *London, etc.*—On reaching England, the Commissioners, after putting themselves into communication with the Agent-General of New South Wales, and the Board of Education, worked partly together and partly independently of each other, each seeing both primary and secondary schools and technological institutions, and each drawing the attention of the other to features considered to be conspicuous.

In no other way would it have been possible to accomplish the task involved, viz., of seeing something of the educational establishments in and about London.

In regard to London and its suburbs, and in fact the United Kingdom generally, the principle that the Commissioners were compelled to act upon, in view of the limitation of time for the accomplishment of their task, was, that only those places should be visited that were likely, or were said to shew *newer features in their material equipments, or in the arrangement of their buildings.* It is, of course, regrettable, that many educational institutions of eminence had to be omitted, but it would have been quite impossible to have visited them all; and this will explain the deliberate decision to leave out of the visiting programme many institutions of very high reputation. Their curricula, histories, and special features were inquired into as far as was deemed necessary; and every endeavour was made to ascertain from all available sources of information, the spirit guiding their educational effort. In this connection it ought to be stated that many schools of high reputation, which are doing excellent work in building up manly characters, and in maintaining high

traditions

traditions, have, after all, very inferior material organisation. In such cases a mere visit to the actual building, and a view of equipments, would be of no value; but to learn the way in which they aimed at realising their ideals, is of the highest value. This could be ascertained in other ways. It should be remembered in this connection that the Commissioners had at their disposal, not only the very kind advice of able officers of the Board of Education, but also of various professors engaged in the higher teaching institutions of England, of distinguished men of science and other branches of learning, and of public men who had given special attention to educational matters. This advice was in all cases most cordially given.

As is generally the case, progress, from a variety of causes, was somewhat slow in the initial stages of the Commissioners' work. In addition to endeavouring to see the best institutions in and about London, and also to get at the best informed opinion as to the educational needs of the English people, inquiry had also to be made as to the best scheme of movement through the various countries of Europe. [Chap. I, secs. 19, 20.]. Passing through France, Switzerland was visited first, commencing in the French portion and going on to the German.

8. *Switzerland.*—From the standpoint of any democratic community, Switzerland is a very important place to visit, since the spirit of the people has in some respects a semblance to our own. What difference there is, is mainly due to the temperaments of the Swiss, which are very dissimilar in the French, German, and Italian parts. In democratic spirit they are more thoroughly in agreement with the Australian. (It is worthy of note that one of the Presidents of the Swiss Confederation, did not regard it as beneath his dignity to continue his academic teaching during the term of his office as President.) But as regards their attitude to public instruction it may be said that Switzerland has a practical respect for education which has no counterpart in this State. Their educational institutions are very fine and very thoroughly equipped; their organisation and plan of instruction possesses a degree of thoroughness, that would well serve as a model for our future effort! The study of Swiss education was therefore made as thorough as was possible in so rapid a movement, for its primary system is probably unsurpassed.

In regard to certain features, this was one of the most profitable parts of the Commissioners' tour. The cities and towns seen in Switzerland were Geneva, Lausanne, Moudon, Payerne, Neuchâtel, Berne, Lucerne, Winterthur, Zurich, and Basel.

9. *Italy.*—Passing southward, Italy was visited; the schools, however, were, unfortunately, in vacation. The proper Minister being absent, His Excellency Signor Malvano was seen, also the chief of the Department of Public Instruction, and a number of professors and teachers; each most courteously affording all the information in his power as to their educational systems. These appear to be very finely organised, *so far as scheme is concerned,* and in the superior branches of education attain to a high degree of perfection. Recent *primary* schools in Northern Italy are excellent, one in Turin being much superior to anything in Australia.

The cities of Italy seen were Milan, Venice, Bologna, Florence, Rome, Naples, Genoa, Pisa, Turin. At the last-named place a very fine exhibition was visited, as it afforded a valuable opportunity of observing the development of the decorative arts, etc.

10. *Western Germany.*—Returning from Italy and completing the examination of Switzerland, the Commissioners travelled through Alsace, Baden, Bavaria, Hessen, and the Rhine Provinces, visiting Strasburg, Karlsruhe, Heidelberg, Darmstadt, Frankfort on the Main, Marburg, Mayence, Coblenz, Bonn, and Cologne. In these cities and towns, folk-schools, real-schools, gymnasia, polytechnica, and universities, etc., were seen, and some insight into German educational institutions was obtained. The equipments of the polytechnica were excellent, and far superior to anything in this hemisphere, hydraulic and electro-technical equipments, being, perhaps, among the most striking features.

11. *Belgium and Holland.*—Belgium was next visited; the cities, etc., seen being Liège, Brussels, Louvain, Malines (Wavre Notre Dame), Gembloux, Ghent, Bruges, Ostende, and Antwerp. The Agricultural University at Gembloux was an institution of more than ordinary interest. It may be mentioned that Belgium is bilingual, instruction in many parts being given in both French and Flemish.

Passing then into Holland, some of the educational institutions of Rotterdam, Delft, The Hague, Leyden, and Amsterdam were visited, all shewing important developments in response to modern educational needs, and a serious attempt to thoroughly equip the Dutch people educationally.

12. *Germany and Denmark.*—Returning somewhat on their path, the Commissioners next visited Aachen (Aix-la-Chapelle), Düsseldorf (where a large exhibition, in which Education was represented, was being held), Hanover, and Hamburg, in Germany; and Fredericia and Frederikshavn in Denmark. Later, Copenhagen was also visited. In the last-named place an important technical establishment for the improvement of dairying, etc., was inspected.

13. *Norway, Sweden.*—Crossing the Cattegat, various schools, etc., in Gothenburg, Nääs, Trollhättan, Kristiania, Bastö, and Stockholm, were visited. The equipments in this country were also excellent. Features of special interest were the Seminarium for Sloyd (Slöjd) at Nääs, the Art School of Stockholm, an exhibition of Swedish gymnastic in that city, and the Reformatory at Bastö.

14. *Finland and Russia.*—It was originally the Commissioners' intention to return southwards, but comments on the excellence of some of the institutions of Finland and Russia led to a determination to see at least the capital cities.

Crossing the Baltic Sea, and passing through Åbo, the old capital of Finland, the present capital Helsingfors was visited, where the Commissioners learnt that the Finns also have excellent primary schools. St. Petersburg was next reached by rail, and some of its magnificent educational institutions were seen, the stay there, however, being all too short.

15. *Prussia and Saxony.*—Returning from Russia, Berlin was made the next place of sojourn, the great Reichanstalt at Charlottenburg, and the Versuchsanstalten at Charlottenburg and Gross-Lichterfelde, being among the institutions of special technical interest. On leaving Berlin, Leipzig and Dresden were visited.

16. *Bohemia, Austria, Hungary.*—Prague, the capital of Bohemia, a bilingual country, with Czech and German schools often housed under the one roof, was the Commissioners' next city of call. Its fine Czechish polytechnicum has a special laboratory for investigating questions relating to sugar production. Vienna, and Buda-Pest, the capitals of Austria and Hungary, were next visited, but the stay was ridiculously short. The information collected by the Commissioners has, however, been very kindly supplemented through the valuable and generous efforts of His Excellency the Ambassador at Vienna. A return was made *via* Breslau to Berlin, where the examination of the Prussian system was completed.

17. *France.*—Passing on then to Paris, the French system in primary, professional, and training schools was examined. The time available was becoming very limited, and although much was seen in a short time, the inquiry was necessarily hurried. Among places of special technical interest were the Bureau des Poids et Mesures, St. Cloud; and the Bureau Central Météorologique at Paris. Through the kind offices of the English Ambassador and Consuls, a large amount of information was gathered, however, from various important cities of France. The French primary system was deemed excellent, and was therefore thoroughly studied.

18. *The United Kingdom.*—After some further investigation in London and its immediate neighbourhood, a journey was made to Birmingham, Manchester, Leeds, Newcastle-on-Tyne, Edinburgh, and Glasgow. Then crossing the North Channel, Belfast and Dublin were visited, and crossing the Irish Sea, a return was made

made *via* Holyhead, etc., to London. The various Welsh institutions most readily gave the Commissioners a large amount of valuable information as to their school systems, for which their appreciative thanks are here expressed.

19. *United States and Canada.*—Leaving Southampton, the journey to America was made *via* Cherbourg. On reaching New York the Commissioners took train at once to Washington, visiting afterwards Philadelphia, New York and its suburbs, Newhaven (Yale University), Springfield, and Boston (Harvard University). Next Canadian institutions were seen at Montreal and Toronto; then the Niagara Falls, Ithaca (Cornell University), Detroit, Ypsilanti (Normal School), Ann Arbour (Michigan University), Chicago and San Francisco were visited, and a return was made *via* Honolulu and New Zealand.

20. *Assistance afforded the Commissioners.*—It would be difficult to over-appreciate the very kind assistance that was afforded the Commissioners in the details of their inquiry, not only in the United Kingdom, but in all parts of their tour. In each country the greatest consideration was shewn, and both Ministerial and Educational officials did all that was possible to facilitate the very rapid movement necessary to return within the limited time available.

For the assistance referred to, the Commissioners desire to express their warmest appreciation and thanks; and it is only just to say that any success that may attend their efforts must be credited largely to the unexpected way in which assistance was given, both during the occasion of their visit, and since through correspondence.

For this universal and generous help our State is deeply indebted.

Nothing that would help to reduce the time spent at each place to an absolute minimum was omitted, for it was only in this way that so extensive a tour could be accomplished in the very brief time allowed. It is to be regretted that more deliberate study was not possible.

It is but right to record here the very valuable assistance given by the officers of the Department of Public Instruction, assistance that has much facilitated the task of the Commissioners.

Finally, the Commissioners desire to express their heartiest thanks to the Honourable the Minister for Public Instruction for the assistance afforded them under his authorisation, and for much personal kindness and encouragement during a very lengthy and arduous inquiry.

21. *The conclusions and recommendations of each Commissioner.*—It remains to be added that the Commissioners, while in substantial agreement as to *the necessity of abolishing the pupil-teacher system, of making the professional education and training of the teachers more thorough, of changing the scheme of inspection, of taking fuller account of hygiene in regard to the general arrangement of schools and the furniture therein, of increasing the practical efficiency of education, and of improving the equipment of schools,* have, nevertheless, thought it wise to summarise their views independently. Those of one of the Commissioners (G. H. Knibbs) are given in Divisions II to X, and of the other (J. W. Turner) in the remaining Divisions of the summarised report, viz., XI, etc., the name of each Commissioner being attached to each Division.

In all parts of the summarised or extended report which have been written independently, the word "Commissioners," when (or though) used in the plural, is to be regarded as involving only the individual writer. Sometimes, of course, it will also express the opinion of both.

Each Commissioner desires to place on record an acknowledgment of his sense of obligation to his fellow Commissioner, a sense of obligation that any existing difference of view has not in the least diminished.

Summary and Recommendations; by G. H. Knibbs.

II.

INQUIRY INTO EDUCATION.

[G. H. KNIBBS.]

1. *Introductory.*—The comprehensiveness of the Commission demanded a review of the whole matter, from the standpoint of the *Education of the People*, rather than from that of the education of particular classes, or of the education that may happen at the present time to fall under a particular jurisdiction [Chap. LV, sec. 1.]. The State is concerned with the well-being of the entire community, and has an undoubted and unequivocal interest in such an organisation and *liberal* unification of educational methods, as shall assist in creating a self-reliant, mentally able, practically capable, and moral community. This matter is more fully dealt with in Chapters LIV and LV, and will be again referred to, and the significance of such an undertaking will be seen from Chapter III.

The Commissioners endeavoured to study the educational systems of each country from the standpoint indicated, and further, to acquire an accurate knowledge of the material and mechanical side of school administration and organisation in the various countries visited. They sought also to ascertain, what is far more important, viz., the *educational principles* upon which the organisations were founded, and further, to estimate the consequences of these upon the people.

It is only in such a way that educational systems can be truly and properly appreciated. A review of the merely mechanical side would often lead, and has often actually led, to most erroneous views, and many subjects have, in this way, been misunderstood. For example, true kindergarten has the freest possible organisation, and does not resort to *repressive* discipline, for the reason that it proposes to stimulate self-expression and respect for one's own individuality, and to secure, *ultimately*, steady behaviour by self-control instead of through coercive discipline. This is characteristic, yet it has often been so completely misconceived that in its place have been found a few Froebelian occupations, with a *régime* of ordinary infant-school discipline, absolutely without freedom! [Chap. XVI, sec. 5].

It is worthy of comment that in countries where great weight is attached to the fundamental principles of education, and to educational theory generally, and where, consequently, these have been most thoroughly debated, it is naturally realised that the *mechanism* of education is relatively (but not absolutely) of slight importance; and yet it is in such countries that the equipment and material organisation have been most developed [Chap. LI, sec. 1].

This is explained only by the significance of every aid to education being appreciated in proportion as its theory and principles are thoroughly studied, a fact which throws light upon the value to a teacher of a study of the *theory* of education before its practice is undertaken by him. Either in the case of an individual, or in the system adopted by a State, the intellectual outlook and grasp is completely transformed by a knowledge of educational theory, and, it may be added, of educational history. It remains to be said that the great pædagogues of many countries have, both by their lives and ideas, stimulated and inspired the teaching profession in its arduous daily work, for the virile mind needs the support of a large view as to the real character of the work, in order without deterioration to tolerate daily association with the child-mind.

2. *State of Education in New South Wales.*—It would have been a most agreeable task had it been possible to return with the report that the educational system of our State was excellent, or needed but slight amendment or insignificant additions. Unfortunately to so represent it is quite out of the question, for it has been made evident to the Commissioners that *the citizens of this State have educational opportunities falling far short of those in other parts of the world* [*vide* Chap. I, secs. 1, 11], and in the training of our teaching-staffs there are *defects, the seriousness of which can hardly be overstated* [Chap. I, sec. 8].

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To have to make a report in such terms is naturally a painful and disagreeable duty, but in view of the great issues which depend upon education, issues which involve the whole future of our people, candour is an essential, and any disposition to hide the defects of our educational system could not, under such circumstances, be too strongly deprecated [Chap. I, sec. 7]. A clear and unqualified recognition of our shortcomings, *and of their gravity*, is the initial condition for that complete reformation which seems to the Commissioners to be necessary. The details of this will be referred to hereafter.

It is proper here to observe that *a condemnation of the educational system should not be confused with a failure to appreciate the labours of the teaching staff.* The industry, devotion, and genius of many a teacher has, luckily for the children of this State, enabled him to minimise its evils. Despite the poverty of the professional education and training it supplies, many a teacher, by assiduous use of every opportunity of self-culture, has become able and well-informed. If he has been cramped by the mechanism of the system, and has been forced to adopt methods which his judgment could not approve, he has also put himself under pressure to avoid its untoward incidence upon his pupils. Thus there has often been *good education under a bad system*, and there is no inconsiderable number of teachers in the Department who will most gladly welcome reform.

3. *On the significance of Education.*—The significance of education to any nation can be understood only from general considerations. It is most vividly realised in contact with the better-educated peoples, and in sight of their daily activities. The range of the influence of education may be said to cover all individual, communal, or national effort, whether, industrial, commercial, literary, or scientific. It affects all that a nation is or does; it gives not only the power of wisely creating or exploiting territorial wealth, but also the power of recognising its existence [Chap. I, secs. 2, 9]. Countries ahead of us are progressing, and their better education is rewarded by certain achievements which need not here be referred to.

There are two special reasons why our State system of education should be advanced till it is comparable with the education of Europe and America. These are:—

(*a*) The issues which may arise at any time through national rivalries demand that our industrial and commercial activity should be at least as wisely and ably directed as in other countries of the world. To secure this we must depend upon our primary education conferring the requisite self-reliance, purpose, general intelligence, skill, and moral force on our population, [Chap. I, secs. 5, 10, 14].

(*b*) The rapid progress in all departments of human knowledge, and in the application of science to industry and commerce, demands that our educational system should be such as to make it possible to keep in touch therewith. It is necessary, therefore, so to educate our teachers as to enable them to follow intelligently and with interest the world's economic and scientific development, in order that they may become inspirers of the children æsthetically, intellectually, and morally. [Chap. I, secs. 12, 15].

4. *Urgency of Improved Education.*—We are, as already implied, so far behind America and the leading countries of Europe in,—

(*a*) The character of the education given, and in

(*b*) A sufficient education and training of our teaching-staffs,

that the improvement of education is *urgent*. [Chap. I, secs. 8, 16]. Evidently it will take some time to properly develope our teaching power, and our educational transformation ought to be without violence in respect of existing conditions. [Chap. I, sec. 6]. The teachers already in office will have to be brought into line with the new methods and developments.

There can be no doubt also that the development of the resources of our territory depends largely on *practical* education, viz., that which developes *character* and teaches to *think*. [Chap. I, secs. 9, 10, 12, 13]. A wide-spread recognition of the value of education, if it can be brought about, will greatly strengthen the hands of the people of our State, and the increase of intelligence, consequent upon any forward movement, will be the fulcrum for further development.

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5. *Reasons of Existing Defects.*—What has been said implies grave defects in our existing educational institutions, and among these is the organisation of our primary system. In this connection it ought to be said that the task of educating a large and very sparsely-populated community is far greater than might at first sight appear, and the administration of Public Education has had a gigantic problem to deal with. There has obviously been much zeal and devotion in its work, and there is mechanical precision in its scheme. The greatness of the work undertaken should command public respect for it. How far it meets public needs will be discussed later. It has already been indicated that reform is needed.

Some idea of the magnitude of the work of the Department may be had from the following statement, kindly supplied by the Chief Inspector (now Acting Under Secretary), Mr. F. Bridges.

The total number of schools under the Department of Public Instruction of this State, open in 1902, was as follows:—

High Schools	4
Public	1,903
Provisional	464
Half-Time	406
House-to-house	26
Evening	43
Total...	2,846 comprising 3,065 departments.

The following will give a general idea as to the distribution of these schools:—

The State is divided into thirty-five inspectorial districts, five of these being in the metropolitan area. For these districts there are thirty-one inspectors' headquarters; Sydney being the headquarters of five inspectors.

Some idea of distance and area to be covered by inspection can be had from the following table, which shews that, approximately, 114,000 miles are covered annually by the Inspectors of the Department. This travelling extends over an area of about 281,000 square miles. In compiling these figures, suburban districts have not been included. The details are as follows:—

Number of Miles Travelled on Inspection Work.

Inspector's Headquarters.	No. of Miles travelled.	Area of District.	Inspector's Headquarters.	No. of Miles travelled.	Area of District.
		sq. miles.			sq. miles.
Armidale	6,372	5,000	Kempsey	2,650	4,500
Glen Innes...	4,000	7,000	Maitland, East	3,500	3,000
Tamworth	2,900	7,583	Newcastle	2,000	180
Quirindi	5,114	12,000	Dungog	3,500	5,000
Bathurst	2,500	1,400	Sub-Metropolitan... ...	4,073	1,650
Blackheath	3,900	6,000	Parramatta	3,000	1,100
Forbes	4,937	12,000	Wagga	5,500	2,500
Bowral	3,290	1,120	Albury	3,500	5,000
Wollongong	3,800	900	Young	3,400	5,500
Crookwell	2,920	4,600	Hay	2,630	30,000
Goulburn	2,492	8,550	Broken Hill	3,440	60,000
Braidwood	3,465	3,500	Wellington	3,490	13,200
Yass...	2,992	5,000	Mudgee	2,600	10,000
Grafton	4,100	8,700	Dubbo	7,500	36,000
Taree	2,615	4,200			
Lismore	5,169	4,000	Total	114,279	280,683

The early difficulties of the departmental work, viz., those connected with travelling, with the food, the accommodation, and the difficult communication, in a sparsely populated territory, can be adequately appreciated only by those who have travelled extensively over the State.

Here it may be said that however much, in the Commissioners' opinion, the educational system adopted in this State falls short of what it ought to be, past endeavour to meet the educational needs of our widely scattered population must challenge respect.

The state of education in any territory is a relative thing, and must be judged by comparisons with the state of education in other countries. In making such a comparison between education in New South Wales and elsewhere, it may often happen

happen that what one (or both) of the Commissioners has to say will seem to assume the character of strongly adverse criticism, or to lose sight of elements of merit in our own educational scheme. By way of rejoinder it ought at once to be said that this is in appearance only, for it is impossible to bring our system into real comparison with that of other lands without revealing in a strong light its grave defects. In order that it may be known exactly where we stand educationally, it is the bounden duty of the Commissioners to speak absolutely without reservation, and to reveal unequivocally the true state of the case as it appears to them after long investigation. But, inasmuch as it becomes necessary to disclose how much we have to progress, it is all the more incumbent upon the Commissioners to acknowledge their *unqualified appreciation of the labours, often under most arduous and disheartening conditions, which the teachers and other officers of the Public Instruction Department have been called upon to discharge* in the great cause of education.

In submitting their conclusions, and expressing their views, therefore, the Commissioners, however seemingly severe, are not unmindful of the strenuous efforts of the teaching profession on behalf of the rising generations of New South Wales; and to anyone acquainted with the state of our interior, the above synopsis of the activity of the Department will sufficiently suggest how great is public indebtedness to the teaching staff of our State.

To what is above said may be added that *the teachers of the State cannot be held directly responsible for the present state of things.* They, as others, can transcend their surrounding conditions only with the greatest difficulty. In loyalty to the system adopted, in facing hard conditions bravely, they deserve undoubted praise; and further, it ought not to be forgotten that the existing *régime* by no means expresses a consensus of their opinions or their educational ideals. The *fault lies in a scheme of education* to which the State has been long committed; *the supposed excellence of this will be shewn to be quite mythical*, and our demerits are the inevitable consequence of an espousal of the pupil-teacher system, which *tends* to limit the horizon of the teacher educated under it.

6. *The Nature of an Inquiry into Education.*—Inquiry into a public, or, indeed, into any educational system, involves an investigation chiefly of four things, [Chap. III, secs. 1, 2], viz.:—

(1) The laws concerning education.
(2) The curriculum or subject-matter of instruction.
(3) The organisation of the teaching, including training and supervision.
(4) The administration of the laws, and of the Department created under them.

An analysis of educational theory has been outlined in Chapter III; this will shew at a glance what must be taken into account. Chapters LIV and LV may also be referred to as shewing the fundamental features of education.

In subdividing the several matters (2 to 4) they naturally fall under the following heads:—

(1) Statutes relating to Public Instruction.	(a) Normal Education.	(i) Primary. (ii) Secondary. (iii) Continuation and Technical. (iv) Superior.
	(b) Education of the Abnormal.	(i) Defectives. (ii) Criminals.
(2) Subject-matter of Instruction.	(a) Subjects. (b) Extent of Instruction therein. (c) The methodology of their teaching.	
(3) Organisation of Teaching.	(a) Material equipment.	(i) Schools. (ii) Furniture. (iii) Teaching materials.
	(b) Teaching Staff.	(i) Education of teachers. (ii) System of teaching. (iii) Maintenance of efficiency—*i.e.*, Inspection, etc.
(4) Administration.	(a) Scheme of administration. (b) Personnel of administration.	

In regard to the second and third sections, it may be said that if efficiency can be reached in the organisation of teaching, the subject-matter of instruction will present no difficulty, but will simply have to be declared. 7.

7. *General remarks on Education in the State of New South Wales.*— Looking at Education in the State of New South Wales as a whole, it may be said that, in common with England, it has as yet no properly organised system—that is to say, there is no scheme embracing in a comprehensive and connected way all branches of public education. Strictly speaking, the State has no general system, for the various grades of education do not fall as individual elements into any definitely co-ordinated scheme.

This feature, common to Australian as to English education, may be said to be the characteristic difference between English and Continental education; and it is one of the most serious defects of the former. In respect of different stages of education, of the scheme of qualification for particular callings, of the relationship between the State and private schools, and of the connection between lower and higher institutions, absence of proper co-ordination makes everything indefinite, uncertain, and unsatisfactory.

In Chapters LIV and LV, the mode in which education is co-ordinated in different countries, and thus unified, is referred to, and it will be seen at a glance that countries which have a definitive scheme have great advantages.

When in any country *having a properly qualified teaching staff*, the curriculum of each class of school has by law to conform to at least a definite minimum of education, the transfer from school to school, whether of the same or different grades, can be fixed on definite lines. Thus, the passing through a certain stage, say, in a higher primary school—the examination being held by the primary school itself,—would qualify for entrance into the lower secondary school (equivalent in New South Wales to passing, say, from the "Public School" to the "Public High School." Similarly, qualification in the last stage of a higher secondary school could be taken as *matriculation*. This is, generally speaking, the Continental system, and has great advantages over the English system of the University holding examinations to determine the conditions of entrance. This important matter will be referred to more fully in the later report.

In certain professional callings, preliminary qualification has to be assured in several ways. In a country with a real *system*, it is much easier to say how far this qualification exists, and to prescribe conditions ensuring its thoroughness. [Chap. LIV, sec. 9].

Further, the satisfactory preparation of teachers for different classes of teaching is facilitated when the main lines of their professional occupation are clearly determined, because a primary teacher has to be *generally* proficient—*i.e.*, possessed of considerable knowledge of many subjects, while a secondary teacher has to be *specially* proficient—*i.e.*, possessed, in addition to general proficiency, of thorough knowledge of a limited number of subjects.

From what has preceded, it can be seen that it is important in the public interest for the State to so shape its educational policy as to bring all educational institutions under such degree of control as will ensure efficiency and full participation in the State system. This, of course, cannot be done instantly and by mere enactment; it is to be brought about only through increase of mutual sympathy and touch between the totality of educational institutions and the State Department. For practical objects, this would have in view the permission for each institution, when thoroughly equipped both as regards material and personnel, to determine the qualifications of its own pupils for the purpose of passing them to a higher grade of education. This may appear a matter too remote for practical concern. It is not really so. If the State Department is to fully justify its title of "Department of Public Instruction," and to forward in the best possible manner the education of the people in all grades of education, it will be necessary to develope a long-sighted policy, aiming at making all public education what it ought to be in the interests of the people. It cannot rest satisfied with the situation from moment to moment. The *de die in diem* policy will never place us on a footing comparable to that of the countries of Europe, nor one equal to that of America. It is essential that our educational system should be developed with foresight, and should aim, not at *merely* following in the footsteps of others, but at contributing its own quota to the educational experience of the world.

The direct and present bearing of this is, that the policy of the Department of Public Instruction ought *now* to be shaped, not merely in regard to its own primary, higher primary, and lower secondary schools, and its technical schools—

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that is to say, all those schools immediately under its jurisdiction,—but also in regard to coming into *liberal* relationship and sympathy with all the secondary and higher schools of recognised standing in the State. The efficiency of its administration, therefore, is in a great measure determined by its degree of prescience and its width of outlook, not merely as regards educational developments in different parts of the world, but also in regard to the interrelation of all branches of education in the State. For there ought to be thorough cordiality between all the educational institutions worth taking into consideration, and this can be secured only through liberal and comprehensive views.

In order to strengthen its influence, the State system itself, in the various schools under its direct charge, *ought to embody an education that must command the respect of educationists and the public*—a view the force of which must be obvious to all those who have given the matter real attention. That the policy of the State Department should be so determined is seen when it is realised that, to acquire the influence it ought to exercise over the entire field of education, it is essential that it should commend itself to institutions now independent of the State, which deal especially with secondary and higher education, to which the primary system has perforce to be preparatory. [See Chap. III, sec. 22].

This points out the importance of placing these branches of education, which are immediately under the direction of the State Department, on as sound a footing as possible. The defects of the present system are serious; they concern the scheme of training and educating teachers, which is one of the most fundamental elements. They concern, also, the curriculum and the hygiene of the school. Until these matters are remedied the condition of education in New South Wales must be regarded as very defective. The pædagogical equipment of our schools also is unsatisfactory and insufficient. The organisation requires considerable amendment, but this is mainly a consequence of our having adopted the pupil-teacher system and a certain scheme of inspection. Unfortunately this reacts on the quality of the education given, as will be shewn hereinafter.

These matters referred to will now be dealt with—that is to say, the nature of the defects which must be remedied will be pointed out, and the means and scheme of reform outlined.

8. *General in regard to Reform.*—In order to clearly shew what, according to the view of one of the Commissioners (G. H. Knibbs), is required to make our system of primary education satisfactory, it will be necessary to summarise what the body of the report has to say on the following subjects, viz.:—

(III) The System of Education.
(IV) The Curriculum in Schools.
(V) The Training of Teachers.
(VI) The School Buildings and Hygiene.
(VII) Scheme of Reform.
(VIII) General matters not included in the above.

These will be dealt with in the divisions indicated by the Roman figures above.

Then the conclusions and recommendations of one of the Commissioners (G. H. Knibbs) will be outlined, viz., in Division IX.

In the concluding remarks, Division X, some reference is made to the attitude of senior officers of the Public Instruction Department to the pupil-teacher question.

In Division XI, and those following, the views and recommendations of the other Commissioner (J. W. Turner) appear.

III

THE SYSTEM OF EDUCATION.

[G. H. KNIBBS.]

1. *Introduction.*—All authorities on education recognise that it must be *systematic;* and, therefore, at no stage, and in no type of education (primary or other), is it to be regarded as merely embracing a series of *subjects of instruction,* but rather as *education through subjects of instruction*—that is to say, the matter of instruction must be so organised and treated as to be *educative.* [Chap. III, secs. 9–14].

The difference between instruction and education, however inconspicuous to persons who have not thoroughly studied the subject of *education,* is fully recognised by every *educationist*[1] as fundamental. It may even be said that not to perceive this distinction would be to betray failure to realise in what education really consists.

In Chapter III its inner nature is briefly outlined, and it is there shewn that what educationists aim at developing is *human character,* the cultivation of the body and mind being really ancillary and secondary thereto [Chap. III, secs. 3, 5]. The fundamental purpose in education is to give that special direction to the will or character which shall ensure the mental and physical powers being thoroughly developed and normally applied. The second and subordinate purpose is to call into exercise the power of independent thinking, and to supply information which shall be at once cultural and useful.

There are few better ways of judging the essential character of an educational system than by taking cognizance of what is regarded as necessary in the *education and professional training* of the members of its teaching-staff, through whose personalities the system is to be realised. Suppose, for example, that stress is laid upon the *moral purpose* of education, upon the *thoroughness of knowledge* in the subjects to be communicated, upon the necessity of *realism in teaching,* upon the importance of *teaching with a wide outlook,* then, obviously, the preparation required of the teacher will reflect this, and his education will be in accordance with such a demand.

If, on the contrary, the idea of education be that it is concerned merely with imparting a few elementary subjects of instruction, then quite a different *régime* is to be expected; lower qualifications will be demanded, and training will be regarded as of less importance. The fact is, that *the system approved by an educational administration stands revealed in the provision it makes for the education of its teachers,* for nothing so fully explains its conception of that subject.

A second element by means of which an educational system may be judged is its *curriculum,* or rather the evidence which that affords of co-ordination of the various subjects included therein. That reveals the theory of education adopted, rather however indirectly than directly, and must be taken with the general personality and education of the teachers and with the character of the professional preparation for their work.

Where comments upon the mode in which a curriculum is to be developed exist, these are much more serviceable as an indication of the educational method than the curriculum itself. For this reason, when translating the curricula of other countries, comments of the character indicated have always been included. Throughout, European programmes reveal the thoroughness with which educational method is developed.

2. *Defects in the New South Wales' System of Education.*—There are two points of view from which a system can be judged, viz.:—

(i) The perfection of the mechanism of its administration.
(ii) The thoroughness with which it achieves its proper aim.

As a means to the end, the first is, of course, important, but does not here call for special consideration, and sufficient reference has been made to the matter in the previous division (II). The

[1] Not necessarily by every teacher. Educationist is used to denote one who has systematically studied the theory and practice of education from the higher standpoint.

The second is the all-important and difficult matter, the former being relatively simple, inasmuch as it involves mainly mechanical elements. Those which demand immediate and serious attention directly concern the realisation of the objects of education. They are—

(*a*) Higher education of teachers, especially in regard to the significance of education.
(*b*) Better instruction in the individual subjects which they will be called upon to teach.
(*c*) Considerable change in the curricula of schools.
(*d*) Improvement of the educational equipment of schools.
(*e*) More thorough attention to school-hygiene, both as regards buildings, furniture, and the condition of children while in school.
(*f*) Special education for abnormal children.

These several matters will be now referred to.

3. *Educational theory.*—Any system of education whatever, in so far as it is deliberately organised, is the expression of some *theory* of education, and such theory must necessarily deal with three questions, viz. :—

(i) Why education is undertaken.
(ii) What to teach, so as to *teach educatively.*
(iii) How to teach so as to *educate.*

It is by the answer given to these questions that the system of education is really determined. It is, moreover, obvious that, in order to secure the intelligent co-operation of a teaching-staff in the realisation of the system, the outlook upon such questions must be commensurate in breadth with the system itself.

In Europe, during their training, teachers are made conversant with the general theory of education and with the special system adopted, so that their whole work may be done in the light of an intelligent understanding thereof. Thus, in dealing with individual subjects of instruction, teachers so prepared do not rest content with the mere methodology of teaching. They must recognise its place in the general scheme, and what constitutes its educational value.

True teaching can never be reduced to a merely mechanical process, and relies therefore not merely on the intellectual knowledge of a teacher, but also on his sympathy and power to inspire. This is true, not only in regard to teaching addressed to the intellectual faculties, but still more in regard to that which more immediately aims at the building up of character.

Some knowledge of the *history of education* is rightly regarded as essential to the proper understanding of the present position of educational theory, and as some defence against an ignorant and ill-advised introduction of exploded ideas. It has, however, a very much higher function, viz., that of revealing the magnitude of the task of raising educational theory and practice to its present position. Such knowledge is disciplinary. The great educationists of history have been men of conspicuous devotion ; hence the record of their labours is a source of inspiration to every person who by character is suitable as a teacher, and is capable of sustaining him in a higher degree of effort than is possible where he views his work only from a purely professional standpoint.

In the curricula of the training colleges of this State, *the general theory of education is not adequately taught.* A certain amount of *methodology* is included, but is not founded upon a psychological basis. This absence of systematic treatment of the theory of education, the absence of the teaching of pædagogic psychology, with its important bearing upon methodology, are the strongest possible evidence that the educational system of our State is undeveloped. In this connection it ought, however, be said that teachers are advised to read certain books on education. [Chap. XXVIII, sec. 7]. Such text-books as Gladman's "School Method," Bain's "Education as a Science," Baldwin's "Elementary Psychology and Education," are prescribed for study, at a stage, however, when teachers have been engaged in their professional work for many years. In Europe, such important preparatory work *precedes* the undertaking of teaching, and *this is an essential difference in the view as to what constitutes suitable preparation.*

4. *The Pupil-teacher System.*—The most serious defect in the educational system of New South Wales is *the employment, as teachers, of young people of immature education*, of immature physical and moral development, utterly without experience in teaching, and therefore without professional knowledge of its scope and significance. Until recently they could be taken at 14 years of age, a limit which, it was suggested at the Departmental Conference of January, 1902, should be merely changed to 15. [Under regulations coming into force in 1904 the age will be 16].

A conception of *what is involved in education*, which both advocates and defends, or even which tolerates, the employment of such persons as teachers, is in collision with that of the whole of Europe and America. With few exceptions, and these men of little eminence, it is admitted in the United Kingdom that *economy, and not efficiency*, is the justification for the employment of such persons, and their employment is deplored by educationists of high standing as injurious to the interests of British education. [Chap. XXXI, sec. 1]. It is quite impossible in a country employing untrained and poorly educated persons as teachers to make popular education comparable to that of the countries where teachers are required to be previously well educated and trained, and *if the State should decide to adhere to the practice of employing pupil-teachers, it should be with the full knowledge that in so doing it is electing to maintain a system of education decidedly inferior to the systems of Europe and America, and one that cannot possibly produce satisfactory results.*

In considering, therefore, any proposal to retain the pupil-teacher system, with its—to the minds of the Commissioners—educationally injurious consequences, it is important to bear in mind that the effect of these in any system is *cumulative.* In contrasting education under a pupil-teacher system with education under a system demanding previous training, it should be recollected that the inferior system tends to provide inferior material from which to draw the teaching staff. For under the better system pupils at a given age will, on the whole, be better than the pupils educated under an inferior educational system. Hence a lad is actually better qualified in countries that do not permit him to embark on teaching without training than he is in countries with a pupil-teacher system. And since the adverse judgment of other countries as to this system is based on their experience with better educated children, with those educated under our system it would be still more adverse.

The removal of aspirants to a teaching staff from systematic education at so early an age as 14 or 15[1], and the endeavour to make good their educational limitations, by private reading, by instruction to be had from a more or less exhausted primary teacher, by the year spent in the training-school, etc., cannot be viewed with complacency if it be desired to make our education comparable to that of other countries. Let it be borne in mind, also, that, inadequate as it is, the training-school experience is that of only a relatively small number. Thus the whole case is even less favourable than above implied.

In regard to the outlook of a teaching staff, a matter of no small importance, it may be said that under the best of circumstances, teachers, as a consequence of their daily association with children—that is, with those who cannot meet them on a level of equal intelligence and information, and cannot subject their opinions to criticism, as would an adult—need a corrective, viz., one which will tend to broaden the view, and give a more normal outlook upon the totality of things. There can be no doubt whatever that the professional employment of children as members of the teaching-staff, places that staff under such limitations as must, in their influence upon the spirit of the community, be regarded as detrimental; for under any *régime* that tended to leave teachers generally restricted in outlook, their power of *educating—i.e.*, of developing children's characters and minds—must be correspondingly defective.

The training-system of New South Wales—that is, the teaching of pupil-teachers by primary school-teachers, coupled with a year spent at the training-college by some (not all) of the teachers—cannot be considered as an alternative to the European method—*i.e.*, as an alternative in any way comparable therewith. The difference is *radical*, and has been set out in full in Chapter XXVIII, where the two methods are contrasted. [See especially sec. 4].

It should be borne in mind that, in respect of the thoroughness in his education, the Continental teacher has conspicuous advantages as compared with teachers taught under the departmental system of this State. During his career in the

[1]Or even 16.

the normal or training school, he is taught each of the various subjects by men, with extremely few exceptions, of university standing, and who are in all cases specialists in their subjects of instruction. Each teacher limits himself to a single subject or to a cognate group, and is a professionally trained teacher of higher and better education and training than in the case of the continental primary teacher. Here the primary teacher, with less educational advantage, is actually the instructor of the junior teacher.

5. *Contrast between Pupil-teacher and other Systems.*—As already mentioned, the pupil-teacher system has been contrasted with the previous training systems of Europe in Chapter XXVIII, sec. 4. This is so important that the following brief indication is given. Reference to the chapter mentioned is necessary to fully understand the difference of the two methods.

Pupil-teacher.	*European and American Teacher.*
Receives initially a very ordinary primary education.	Receives initially a primary and secondary education.
Enters on teaching work without any special education and training.	Cannot enter on teaching work until he has been *specially* educated and trained.
Commences teaching at the age of 14 or 15.	Commences teaching at the age of 18 or 19.
Is *not* prepared by systematic study of theory, history, and psychology of education, and educational methodology.	Is so prepared, and by persons who are specialists in such matters.
Is immature physically, mentally, and morally.	Is more mature, having passed a critical age.
The pupil-teacher has not a prepared mind, and has no adequate conception of the nature and responsibility of his task.	The previously trained teacher has, by maturer years, higher education, and special professional instruction, a better conception of what he is undertaking.
Is in general a poor disciplinarian, and *has* made *no* systematic study of the theory of discipline.	Is in general a good disciplinarian, and *has* made a systematic study of the theory of discipline.
Cannot appreciate the physical, psychical, hygienic, and other conditions of school life and school education.	Has been taught how to recognise satisfactory physical, psychical, and hygienic conditions.
Is generally incapable of inspiring children with high ideals.	Is better capable of inspiring high ideals.
Starts with the idea that teaching is communicating information in subjects of instruction.	Starts with the idea that teaching aims at *Education*—that is, the building-up of the moral character, and of the mind and physique of the child.

This inadequate contrast should be read with sec. 4, previously referred to.

6. *Tendency of Pupil-teacher System.*—It will be seen that under the pupil-teacher system *there is an inevitable and distinctly recognisable tendency to deterioration*, while under the European system there is an equally certain tendency to improvement. The very fact of permitting mere children to teach implies, on the face of it, what would in Europe be regarded as an extraordinarily low estimate of what constitutes a normal qualification to teach. As a matter of fact, such a practice excites among educationists of Europe nothing short of astonishment. It is only because we are accustomed to it that a system so seriously defective does not arouse a similar censure.

The fact of starting on one's professional career with so low an estimate of what constitutes competency has, on the pupil-teacher himself, a morally bad effect. There is nothing to inspire him with ideals, and without such inspiration he is not likely to labour strenuously to make good his educational deficiencies. In this connection it ought to be said that a pupil-teacher's efforts to educate himself after his routine duties have been discharged are quite inadequate, unless he be uncommonly gifted and industrious. He is sufficiently occupied in learning subjects of instruction, and in the preparation of the lessons he has to give; and to think it possible that, other things being equal, he could by private study make himself the peer of the European teacher taught by specialists in a seminary, would be to wholly misunderstand the situation, and to betray a complete failure to recognise the character of the education supplied in the normal schools and pædagogic seminaries.

7. *Character of Instruction for Student-teachers.*—To form a proper idea of the instruction afforded teachers in the training schools of Europe, the very high professional qualifications of their instructors must be borne in mind when reading the curricula. Both

Both as regards matter and form, each subject is thoroughly studied; it is studied, too, from the standpoint of liberal and thorough education, and definite opinions are entertained as to the principle of its development.

So as to give a clear idea of the degree of education received by primary teachers in Europe, the curricula have been translated. [See, for example, Chap. XXXV, secs. 2–18, giving a translation of the official programme in the French normal schools; Chap. XXXVII, secs. 7–10, for the programme of some of the normal schools of Switzerland, and sec. 11 for some indication of the Hungarian programme; Chap. XXXVIII, secs. 4–6, for an idea of the training for the German folk-schools.]

Much more could be cited to the same effect. To afford evidence of the detailed treatment, however, the preparation of teachers for specific subjects is referred to under the several chapters dealing therewith. Thus, for example, in Chapters XXIII, XXIV, and XXVI, dealing respectively with the teaching of drawing, geometry, and geography, not only are the programmes for the primary schools given, but also the mode of development of the subjects in the training of the teachers. [See Chap. XXI, sec. 17, regarding the education of primary teachers in Switzerland in drawing; Chap. XXIII, sec. 12, regarding the education of Swiss teachers in geometry; Chap. XXIV, sec. 12, for their education in geography, etc.]

8. *Difference in tendency between European system and New South Wales system of training Teachers.*—Owing to the fact that in the European system the instructors of student-teachers, during their course in the normal schools and seminaries, are men whose education is of a higher grade than that of the primary teachers,—since they are men of university experience, who have specialised in their particular subjects, and who endeavour to keep themselves in touch with universal progress in their subjects—the primary teacher there is favourably influenced by the wider outlook. It is easy to see that, in contact with such teachers, he must enlarge his vision, and, as time rolls on, the primary teacher is continually advancing in thoroughness and breadth. And since he is the centre of moral and intellectual influence for the community at the most critical period of life, viz., that when the mind and character are plastic, and most subject to formative influences, the European system possesses the essential characteristics of progress. *Not so, however, the pupil-teacher system*; that tends distinctly to deterioration.

Starting with an implied or expressed assumption that education of children is possible through the employment of immature and imperfectly educated children, it wields no adequate moral or mental influence during the formative period, viz., the younger years of school life. By engrossing the young and undeveloped mind of the teacher with his professional work, it prevents him from himself receiving an adequate education, and it fails to create in him any sufficient recognition of the work he has elected to undertake. His teachers, being primary teachers themselves, developed under the same imperfect system, and prevented by their professional occupations, viz., preparation for lessons, teaching pupil-teachers, ordinary school-teaching, etc., from higher self-culture (since practically the whole of their time is thus taken up), are on the whole incapable of inspiring him. Nor can they be adequately qualified to teach him. It is not possible, under such conditions, for any but exceptional men to be even moderately well-informed, and *this is in no way their own fault*, inasmuch as the difficulty is forced upon them by the system.

It is a well-known fact that limitations of knowledge and self-sufficiency are likely to go hand-in-hand, and that this worst of all dangers is one to which the pupil-teacher system is peculiarly liable, and which needs the corrective of broader outlook through better education. Primary teachers developed under the pupil-teacher system are in great danger of never being able to rightly estimate their own limitations; whereas, under the previous training system, they are likely to more definitely recognise their true function in the economy of education,—a matter of importance.

9. *Pupil-teacher System not endorsed by the entire Primary Teaching Staff of the State.*—It ought here to be said that it must not be supposed that the pupil-teacher system expresses the ideals of the entire staff of primary teachers in New South Wales. At the same time, it must be admitted that at the Conference held in January, 1902, of Inspectors and Departmental Officers of the Department

of

of Public Instruction, there was no definite dissent. On the contrary, the system was strongly approved. The Minister for Public Instruction specially submitted the question whether it was a good one, asking whether the present methods succeed in "*not only imparting knowledge of the technique of the teaching profession, but also in inspiring teachers with high aims.*" The Conference affirmed that "*the existing pupil-teacher system, with modifications, should be continued.*"

Under the system of the Department, individual teachers can hardly be expected to publicly express views strongly antagonised to the general policy, and in fact are commanded by Regulation (32) to "abstain from public controversy upon the merits of the system of education now in force." There are, however, many teachers in the Department who recognise the inefficiency of the pupil-teacher system, and who will welcome its abolition.

10. *University Education no Substitute for Special Education as Teachers.*—It may here be pointed out that, while there is an obvious advantage in having highly educated teachers rather than ordinarily educated ones, a university education in Arts, etc., is not a proper substitute for special education definitely aiming at the professional qualification of the teacher for his work. A university education is valuable on account of the advanced character of the teaching, and because it teaches science subjects realistically. It is valuable also, because in university life the narrowness of elementary education tends to be corrected. The larger view and wider outlook are calculated to create liberal sympathies, and to make men realise that criticism is valuable, and that limit of touch with the outer world is serious, inasmuch as it is likely to deprive one of that corrective to the sense of self-sufficiency which is so liable to arise, and which constitutes one of the most serious of obstacles to individual, communal, and national progress.

11. *Training of Teachers.*—At the Departmental Conference previously referred to, the subject of the *training* of teachers was discussed. In this connection it must be pointed out that considerable confusion appears to exist as to the *difference between mere practice in teaching and training.* The efficiency of the latter depends obviously upon the efficiency of the system under which it takes place and upon the educative value of the scheme. Training, in the Continental sense, operates mainly on the *mind* of the student of teaching. This mental preparation, coming through a study of the theory, psychology, and history of education, through a sound education, including not only the subjects of instruction as taught, but also their broader and higher developments, through the systematic elucidation by specialists of their methodology, is the *main* element of the training. This is the part where the difficulties really lie, not in the mechanical part of the teacher's work.

Since, however, teaching is an *art* depending upon a science, practice in the art is also necessary; for it familiarises the student of teaching with the *mechanical* and purely administrative elements of his professional duty, and it enables him to make some observation of the importance of the routine of school life, of the mode of dealing with human beings; it gives him confidence in himself; it enables him, by coming into disciplinary relations with children, to feel and develope the touch of his moral personality with theirs; it reveals to him the weak points in his professional equipment, and generally it focusses his attention on the *art of teaching* in a practical and definite way. Nevertheless, important as this element in training is, it is undoubtedly subordinate to the higher part, viz., that which has to do with the mental preparation of the teacher. This is at once seen in the fact that a teacher may teach all his life and yet be quite unworthy of the name of "*trained* teacher," or indeed to be called "teacher" at all; so that *the merit of training does not lie in the amount of practice in teaching.* Hence, if the dictum be correct that a particular system is bad, the "experience and the training" under it is correspondingly discounted, since it is not true training for the office of teacher. And even more may be said, viz., that *the system's defects may actually operate as a hindrance, in virtue of false ideas as to the real nature of education, acquired under the defective system.*

Reviewing all the circumstances, it ought to be stated that the kind of training supplied at present under the Department of Public Instruction is quite inadequate; it cannot be compared in thoroughness with the training in Europe. It omits the elements of most conspicuous importance, as already pointed out, and the prejudicial effect of this is inevitable.

Though it ought not to be forgotten that there are teachers who, to some extent, make good the defects in the departmental programme by attendance at other institutions of learning, by private study, and by thorough analysis, in the light of psychology, etc., of their own experience in teaching, yet they are also greatly handicapped in comparison with the European teacher. As compared with him, they have small opportunity to learn an adequate amount of science realistically, —practically none in connection with their official life and experience. It ought to be stated that at present the Department of Public Instruction has no mechanism for training teachers equal to that of England, Europe, or America; and its two training colleges cannot compare with any of the colleges seen by the Commissioners, since they are not equipped for a thorough course of teaching.

It is impossible to suppose that those who abandon the ordinary courses of education at 14 or 15 can compare in knowledge with those who continue till they are 18 or 19, other things of course being equal; and this difference between the two classes of teachers is striking, for one commences his professional work at 14 or 15 with absolutely no training, and with only a primary education given by primary teachers, and the other commences at 18 or 19 after both primary and secondary education, the latter given by secondary teachers of still higher education than the primary teacher. The properly-educated teacher has studied psychology and history of education; he has had some little practice under almost ideal conditions; and he has learnt to some extent the art of handling and developing the child-mind, of directing and guiding the child-will, and these prepare him thoroughly for his professional task.

12. *Absence of teaching in Science, and its effect on the System.*—The absence of a sufficient amount of science-teaching in the case of a primary teacher is of serious import. An intelligent attitude to modern industrial and commercial activity demands a far greater amount of science now than was requisite in the past. In order to profit by their opportunities, especially in our young country, it is requisite that the people as a whole should have some idea of the significance of science for daily life and for ordinary avocations. For example, a dairyman or agriculturist ought to know something of the meaning of botany, zoology, chemistry, bacteriology, etc., in relation to his chances of success. Therefore, he must get elementary instruction in the primary school about such matters, and clearly the only persons competent to give it would be the persons who have at least been taught by specialists, and who have had opportunities of *confirming* and applying that knowledge by actual experiment, and who, moreover, enlarge their experience through suitable means. Here it must be pointed out that the consensus of opinion among persons competent to judge is, that mere literary attempts to learn science are of small value [Chap. XXVI, secs. 2, 3]. Bearing this in mind, the system adopted by us for training our teachers is also wholly unsatisfactory in this respect. The physics that is obtained by male teachers (only) at the Technical College, under the particular conditions now in force, may be disregarded, as it cannot in any way be compared with the teaching in the European seminaries.

The training colleges of Sydney are not equipped for science teaching. It has to be remembered that the special instruction in science for teachers in Europe has a definite orientation, viz., that which directly concerns the art of teaching science subjects. It serves, therefore, a double purpose, viz., of subject-instruction and instruction in methodology.

13. *Limitation of system as regards practical orientation of teaching.*—The practical orientation of education is a common feature almost throughout Europe. It has to be remembered, however, that instruction must first of all be *educative*, and that all attempts to reduce it to useful occupation, or to mere practice in various trade handicrafts, are injurious. It is of the first importance to maintain its *educative value.* The practical orientation of education is not an introduction of practical arts, agriculture, trades, occupations, etc., but is the selecting as illustrative material in lessons, such things as are more immediately intelligible and useful. For example, in conveying to children in an agricultural district some scientific point, an illustration would be selected, throwing light upon things with which they were familiar, or which, under surrounding conditions, they could readily test. If the place were an industrial centre, the same scientific truth might be illustrated by some feature of local industrial activity.

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It is easy to see that an intelligent command of illustration, and real ability to practically orientate knowledge without allowing it to degrade in educative value, involve a very different kind of scientific education from that which is received by our teachers during their training. Chapter XXV has been devoted to the discussion of this question.

The better and more practical teaching of Europe is not a matter of recent origin; in order to demonstrate which, programmes even more than ten years old have been translated in various chapters of this Report. Thus, that of Lille is dated, in the preface, 1883, and the programme cover bears the date 1891 [Chap. XXI, sec. 13]; those of Belgium are dated 1893 and 1897 [Chap. XXI, sec. 2, and Chap. XXVI, sec. 7], etc.

14. *Training of Teachers in relation to Curriculum.*—The limitations in the training of teachers, to which reference has been made, affect the significance of, and reappear in, the curriculum. Not only so, but the actual development of instruction has also to suffer. The limitation is further reflected in the *equipment* of the schools; for example, where Science is not realistically taught, the necessary equipment for such teaching will not be found.

That the quality of teaching is necessarily governed by the quality of the education and professional training of the staff, is a truism; hence, identical curricula do not necessarily mean identical grades of teaching. *Science, for instance, cannot be efficiently taught by mere direction of the administration*, but only by properly educating the teaching staff so that it may teach from a real and sufficient acquaintance with the subject matter of Science.

In order to understand the qualification of teachers to teach Science in the Public Schools of New South Wales, as compared with the qualification of teachers in primary schools in other parts of the world, the teaching of Science subjects in the respective training schools must be compared.

Take Chemistry for example. In the Training College at Borough-road, Isleworth, near London, there is a large chemical laboratory, in which students do practical work. The teachers of this State do none, unless they are university graduates, etc. In Europe the subject is taught, not by general teachers, but by properly trained chemists. The courses of instruction extend over a sufficiently long period to really learn something of the subject. It is learnt as one element in a general course in Science. So far as the training college here is concerned, it may be said that *Natural Science is practically absent*, and, further, the majority of the teachers do not go even through this college, and therefore officially get no instruction at all, unless they get it from the head (primary) teacher. This, however, they do not, since it is not a prescribed subject of study for pupil-teachers.

15. *The New South Wales System of Inspection.*—The work of inspection is intended to maintain efficiency in the work of an Educational Department. Where the employment of an insufficiently educated and trained teaching staff is a feature of the administration, the normal function of the Inspector is at once affected.

In this State he is charged with endeavouring to ascertain how far the teaching has been efficient, and an attempt is made to do this by the holding of examinations.

To some extent such a course, perhaps, is, under the circumstances, necessary, though even that is doubtful. It lends itself, however, to well-understood abuses, which ought to be pointed out, so as to make clear the nature of the defect to be remedied; but what is far more serious is the fact that it is detrimental to the cause of true education, as will be explained hereinafter.

Where Inspectors undertake the examination of the pupils of a school, and where the official estimates of the teacher's efficiency is based upon the Inspector's percentages of marks, etc., it becomes necessary for the teacher to study the Inspector's idiosyncrasies, as exhibited in his examining scheme, and his predilection for particular subjects. And the teacher's effort must be directed to making his pupils, as far as possible, respond thereto, mainly by taxing their *memories*. The effort ought normally to be directed to making the best use of the opportunity to promote the education of the children in the light of the teacher's own experience of *their* special conditions, not to satisfying some examination test applied by one who has *not* a daily acquaintance with the children.

Supposing him to be *qualified* to teach, the teacher undoubtedly is himself the proper judge of the best way to lead along the path of education the pupils under his charge at the particular time. It can easily be demonstrated that the Department's inspection does not gauge the merit of the teacher's work, nor reveal how far he has made the best use of his opportunity with the material passing through his hands. Two illustrations will make the matter clear; they need not be regarded as anything more than typical of what can happen under the present system.

Teacher A., knowing that Inspector B. believes that a detailed knowledge of the constituents of the atmosphere, including those most recently discovered, are very important, and that the percentages of these constituents to decimals ought to be known by children, gives an "object lesson" thereon, writing upon the board all the said constituents, with their percentages, and such supposed important facts in regard to the atmosphere as he thinks will be appreciated by the Inspector. He then demands that his pupils shall memorise them. At the inspection by Mr. B., it is found that the children have memorised, say, fifty facts, including the decimals; this the result, say, of two lessons on the same thing. Mr. A. is awarded 100 per cent., Inspector B. going away highly gratified at the success in scientific teaching. Later, the same teacher, having really learnt, let us suppose, something of physics and chemistry, repeats the lesson on "the atmosphere," actually *demonstrating*, with such simple apparatus as he can command, some of the physical laws of gases, the nature of its constituents (by removing its water, carbon dioxide, oxygen, etc.), and also the actuality of the atmospheric pressure and its consequences. This lesson makes so much demand on the available time that reference to some element—argon let us imagine—and the decimals are omitted, the children, however, learning realistically and thoroughly something of the constituents and properties of the atmosphere, and how these can be actually proved. At a second visit of Inspector B., the atmosphere being again taken as a subject of examination, it is found that a very large number of standard questions (50) as supposed, and the percentages elicit no response. Teacher A. has his new effort rewarded by a low marking, and the expression of disapprobation, and it is also possible, under the system of the State, for this result to prejudice his career.

Or in Latin say, a teacher takes the first 30 exercises of a "Via Latina," and by thoroughly drilling his pupils gets 100 per cent. On a second occasion the same teacher, having taken them over a more extended course, giving a far broader and better idea of that language, but of course leaving many things in abeyance on account of the range of work, finds his work is deemed poor because the children cannot answer *every* question. Thus, with *better* teaching, he may get inferior marking.

Such cases can easily be multiplied. As a matter of fact, the literary way of learning science, which is in vogue in our system, lends itself to such results as are typified in the first illustration, and the mode of examination to such consequences as are typified in the second. The unimportant is often magnified out of all proportion to its merit, critical facts are often wholly ignored, and to obtain good marks subjects are restricted. Moreover, mere memory knowledge is cultivated.

The morale of the system is moreover obviously bad. The tendency to develope dexterity in meeting the special demands of individual Inspectors, by the mere training of the memory within a limited field, so as to escape the consequences of a bad report, does not end merely with the teacher, but affects the pupils too. They see something of what is going on, and cannot be favourably influenced thereby; and further, their normal education is sacrificed to satisfy the Examiner's demands.

In a normal system, the Inspector, while exercising a sort of general oversight, is constituted the professional adviser and friend of the teacher, and devotes his energies to helping the latter in his educational method. His visit to the school, instead of being an occasion for some trepidation, may be looked upon with pleasure, not only by the excellent but also by the indifferent teacher; for, after all, the object of an Education Department is to make the best possible use of the teacher as an element in the educational machinery, for the benefit of the children concerned, and for the ultimate good of the public; and to do this it must play upon his moral nature through sympathy.

The present system of inspection-examination involves a sacrifice of the educational efficiency of the school to the meeting of the Inspector's demands for ready responses to his questions. Since the value of the teacher's work is practically determined by the number of questions that are answered by his scholars,

and

and since also the teacher's official position and emoluments depend upon the result, the whole scheme of teaching has to be framed to meet, not the demands of a rational system of education, but the Inspector's anticipations.

Children are drilled in replies that involve mere memory response, for this is the easiest way to ensure results. Obviously there is no real interest in such work and no really educative element therein.[1]

The whole matter reveals the importance of the proper education of our teachers and of our Inspectors. The only correct judge of profitable attention to the lessons is the teacher himself; he is, in the nature of the case, the only person qualified to estimate the progress of his pupils.

What is most serious in the matter is this, that teachers need be loyal to the interests of their pupils, but under our defective *régime* they are compelled to study self-interest. This *régime* is, to a large extent, a consequence of a general want of confidence in the teachers, which in its turn is the outcome of the employment of pupil-teachers. Where no doubt exists as to the education and professional qualification of teachers, the whole situation is changed. The above defects do not appear in Continental systems. There is no such thing as special preparation to meet the contingencies of examinations.

16. *Defect in School Equipments.*—The system of education is reflected, among other things, in the pædagogical equipment of its schools, and, as already stated, this is defective. To this day the State Department of New South Wales has not an ideally equipped primary school, neither has it in connection with its training school a model pædagogical equipment, nor an educational library, such as would give teachers during their training some notion of the normal outfit of a good school. This defect limits the teaching, and, what is still more adverse, the ideals of the teacher. The educational equipments of schools in Switzerland are an "object lesson" in the proper method of fitting out a school for its educational work.

The opportunities in Sydney for teachers to ascertain what is being done in other parts of the world are also wholly insufficient. They have no *rendezvous* in each centre where they may have an opportunity of acquiring special information about the latest developments of any branch of their calling in which they take a special interest. Reference may be made to Chapters LI and LVII for a more adequate idea of the matter. It will suffice here to say that in Europe they have the advantages referred to.

The system of New South Wales is further defective in regard to the small attention paid to hygiene.

In the schools of those countries which have given systematic attention to this subject, and have consequently provided proper seating for the pupils—in which their backs are suitably supported, their bodies erect, and at their desks they are in a natural position—there is no difficulty in maintaining such a posture as would satisfy any disciplinarian. Every lad who has sat in a New South Wales' "public school" and has retained any memory of his experiences, will remember that the "sitting-up straight" and affecting to look profoundly interested in what was going on, was no light task. Of the morality of the affectation little need be said. [Chap. XVI, sec. 5].

The sooner we recognise that, when properly seated, the discipline of position presents no difficulty, and that a child comfortably seated has a far better opportunity of concentrating his mind upon his work, the better for the efficiency of our schools. That is the way to really secure efficiency and to dismiss an affectation of discipline, which is worse than worthless. The consequences of bad hygienic conditions will be referred to hereinafter.

17. *Conclusion as to New South Wales' System.*—The system of education in New South Wales indicates, by its scheme of training its teachers, by its absence of scientific and literary equipment in its training schools, by its curriculum, by its treatment of the subjects in its curriculum, by its lack of proper educational equipment in its schools, by its inattention to proper hygiene, that it *needs to be radically reformed*; and one of the most important elements of the reform will be the better education and training of its teachers.

The curriculum question will now be discussed. IV.

[1] An illustration will explain what is meant. Suppose for example that the lesson is geography. The towns on the rivers are, let us suppose, required. The teacher says to his class, "Repeat after me—*Murrumbidgee:* Gundagai, Wagga Wagga, Narrandera, Hay. *Murray:* Albury, Echuca," etc. This is repeated several times. Such repetition ensures a response to the question, "What are the towns on the Murrumbidgee," etc. Being absolutely void of human interest, it is quite *thoughtless and educationally worthless*; yet it would secure marks in an inspectorial examination.

IV.

THE CURRICULUM IN NEW SOUTH WALES SCHOOLS.

[G. H. KNIBBS.]

1. *Introduction.*—When one compares the curriculum of the ordinary primary-school ("public-school") of New South Wales with that of the primary schools of the majority of other countries, class by class—that is, according to the age of the children therein—it becomes evident that we have much leeway to make good. If, further, regard be had to the particular way in which the curriculum is developed in each case, and to the more thorough education of the teachers in other countries, the recognition of this fact intensifies in significance. We are not on a par with England, and yet English teachers who have studied European methods, recognising how much need there is for reform there, are strenuously labouring to bring it about. *A fortiori*, the need of reform is more urgent here.

Two things require *thorough* reform, viz., the *System of Education* as previously stated, and the *curriculum* and its treatment. The character of the reform of the system has now been partly dealt with, viz., in the preceding division, but will be again referred to. In this division the curriculum must be discussed, subject by subject.

The elements in the curriculum that stand in particular need of improvement are natural history, physical science, mathematics, languages, and the subjects previously mentioned.

The characteristic difference between our school education and that of Europe and America, inheres in the greater importance which the latter attach to the formative elements; with us the curriculum, is practically, merely informative.

It is recognised by modern educationists that *the important question is not how much is learnt, but how thoroughly each thing is learnt*, and what is its educative value. The notion that subjects of instruction can be satisfactorily taught by any one whose acquaintance with them is limited to the grade of the required teaching has disappeared. Not only must every element in a curriculum be taught with a wide outlook in the subject itself, and a recognition of its relation to other subjects, but also in such a way as to truly give it educative value—that is, the teaching must lead to *apperception*.

Hence, the need of pædagogic *psychology*, a subject wholly neglected in our scheme of training teachers. The question of the defects in this training have been partly, and will hereinafter be more fully, dealt with.

Restricting this consideration to the curriculum, it may be said that the two most important matters requiring attention in regard thereto are reform in the teaching of individual subjects, and the development of *type-programmes* for the different classes of schools. In treating these programmes, great attention should be paid to *intuitive methods*, to the co-operation of the children, especially in regard to their own thought. The teaching must ensure *apperception*, it must develope original thinking power, and it must *educate*—not merely instruct.

2. *Kindergarten.*—The introduction of kindergarten is important. A commencement has already been made in the schools of the Kindergarten Union. That in the public schools belongs rather to the transition from kindergarten to the primary school. It is good so far as it goes, *but is not proper kindergarten*, and misses some of the most important elements, viz., freedom, and full opportunity for awakening the children's self-expression. Further, there are not a sufficient number of teachers who have studied kindergarten thoroughly, and have command of the psychology of the subject. Kindergartners in the United Kingdom, in Europe, and in America are thoroughly trained [Chap. IV, secs. 4, 5]; that will be necessary here also.

The transition-period from kindergarten to the primary school should be between the ages of 6 and 7, and every effort, therefore, should be made to afford the opportunity of attending kindergarten schools earlier than this; it should be organised on the principles indicated in Chapter IV. The school-rooms for kindergarten must allow of free movement. To have fixed-desks, as in the schools of the Department

Department of Public Instruction, is to make true kindergarten an impossibility. To lose sight of the element of freedom is to miss the whole meaning of kindergarten, for this condition is a *sine qua non* in developing as much as possible the individuality and originality of the child. The occupations and instruction of the children should be on Froebelian lines.

In the chapter referred to, an account of the theory of kindergarten, of the kindergarten work seen by the Commissioners, and also of the spread of kindergarten throughout the entire world, is given.

The *importance of kindergarten* can hardly be overstated. It is the basis of a good educational development, its formative value being very high indeed. It awakens good will in the children; *its moral influence* (in the hands of the right class of teachers, properly trained) *is excellent*—it prepares the children to think vigorously and with originality; it has engendered—if it has been developed properly—that mental habit which transforms perception into apperception.

There is no doubt that good kindergartens are the initial and one of the most important steps in a good system of popular education. The Commissioners' conclusions are given later.

3. *General in regard to Curriculum.*—The subjects referred to by special chapters in this Report are:—

Drawing [XXI], Ancient and Modern Languages [XXII], Geometry [XXIII], Geography [XXIV], Arithmetic and Algebra [XXV], Natural Science [XXVI], Physical Culture and Gymnastics [XVII], and Manual Training and Sloyd [XVIII and XIX].

Ethical subjects are dealt with in chapters on Ethical and Religious Instruction, the Education of the Will, and are touched upon also in other chapters.

If education in New South Wales is to be comparable to that in Europe and America, considerable improvement will have to be made in regard to the teaching of *all* these subjects. The aim of the several chapters has been to exhibit the nature of the teaching in other countries, so as to shew both that improvement is necessary, and the direction it must take.

It should be stated that *no spasmodic inclusion of new subjects in a curriculum, nor sudden adoption of new methods in teaching, is real reform, and it is important that we should not fall into the delusion that a few superficial changes will bring our work into line with European education.* Reform involves an absolute change in the education of the teacher, in his knowledge of the history and theory of teaching, of the psychological method, as well as a great improvement in his knowledge of subject-matter, by acquiring it systematically. It is to be remembered, also, that University education is, as previously stated, *not in itself a substitute*, and at the present time the University of Sydney is not equipped for the training of teachers. It cannot provide special education adapted to the requirements of primary teachers, or equal to that provided by the great Normal Schools of Europe, nor has it a chair of pædagogy.

Before passing to the details in the curricula of the Primary Schools, a few general matters may be referred to.

4. *Moral Elements in Education.*—From the standpoint of modern education, one of the most serious defects of our system is the insufficient attention paid to the elements of character-building. This is shewn in inadequate training of teachers, in the absence of definite plan for influencing character, and in the details of the system. Character-building involves, in ascending order of importance, the consideration of physical culture, civic instruction, those elements of education which are concerned in the education of the Will, and with ethical and religious instruction. The Department of Public Instruction has published no clear expression of the official view as a systematic guide for its teaching staff in regard to these matters, and everything is practically left to the individual teachers. In the absence of a type-programme such as is used in other countries, there can be no adequate system of dealing with such subjects. Nor is there, in the training of the school-teacher, any treatment of that part of educational theory that would give *form* to the ethical teaching, or explain the bearing of psychology and ethics in dealing with the child-mind, and in endeavouring to secure a normal development.

To

To understand the continental position, and its moral force, account must be taken of the fact that the ethically tonic effect of physical culture gymnastic is well appreciated [Chap. XVII, sec. 6]; manual training is viewed from the ethical standpoint [Chap. XIX, sec. 2]; the special instruction in ethics or religion is systematised; and all is dealt with by teachers specially educated and trained [Chap. XV, sec. 3].

The value of civic instruction has been recognised in Europe, and recently in America. It is felt that, to intelligently discharge one's duty in a community, a definite idea of its Constitution and the laws to which its members are subject is essential. And, further, a conception of personal responsibility in relation to the affairs of the State and the Empire is necessary to create an intelligent patriotism, in contradistinction to a mere "jingoism" and to that vulgar and unthinking national prejudice which is not without serious danger.

5. *Co-ordination in Teaching.*—In modern educational method, subjects are taught, as far as possible, in the light of their mutual relationship. This may be called the "natural method" in contradistinction to the empirical, and to the logical or analytical, which tend to dissociate each subject from every other. Although for certain purposes it is necessary to analyse human knowledge, and to classify it under subject divisions, it does not follow that that process is sound from the point of view of pædagogy; on the contrary, the psychology upon which modern educational method is founded has shewn that the more intimately subjects are interrelated in teaching, the more fully is apperception developed thereby, and the more thorough does education become. Thus, for example, if drawing, geometry, arithmetic, geography, subjects which have inherently most intimate relationships, are treated as far as possible simultaneously, and always as mutually helpful, they will be far better taught. In the several chapters dealing with such subjects, attention has been drawn to the matter. Here, again, the necessity for a more thorough education of the teacher is apparent in order that he may appreciate the full significance of what is here merely suggested.

6. *Logical and Pædagogical Order in the Development of Subjects.*—By analysis, all subjects of knowledge may be exhibited under a scheme of development, passing from what may be regarded as elementary forms to those which are more complex. Both in England and in this country the greater part of the teaching has been based upon this logical development, a consequence of our failure to attend to the contributions of psychology to the theory of pædagogy. For example, in arithmetic, the first four operations are learnt in succession instead of simultaneously; similarly in regard to the differential calculus, integral calculus, and differential equations. This method is, however, unsatisfactory from a pædagogical point of view. Instead of instruction being given in this way, it should, as far as possible, traverse each subject as it were from end to end, dealing initially with the most elementary facts or principles and developing them by recapitulation with inclusion of more complex material. [Chap. III, secs. 11, 12]. This general principle of methodology totally transforms teaching, and undoubtedly makes it vastly better. It demands, however, higher qualification on the part of the teacher, and a keen appreciation of how far, with individual children, it is desirable to push a subject in its initial and developing stages. This method of extending a child's knowledge in any subject over as great a range as he can understand, and of early familiarising his mind with its fundamental ideas and principles, goes far to remove its later difficulties, for the ideas introduced into his thought germinate and develope of themselves.

The pædagogical order also differs from the logical in taking more account of the psychical elements, viz., *interest*, etc., and of the moral and intellectual influence of the sphere of ideas created by the teacher in the child mind [Chap. III, secs. 9, 10, 13]; a fact revealing the need of psychology in the training of teachers. The mere reading of a book or two on this subject is, however, not sufficient. What is wanted is exercise in applying its principles in teaching. This application is what makes the practice in a European or American seminary so valuable [Chaps. XXXVIII, XXXIX], a matter already dealt with. (See sec. 12 of the preceding division.)

7. *Religious Instruction.*—The important question of religious instruction is discussed in Chapter XV. By the Public Instruction Act of 1880, section 17, 43 Victoria No. 23, it is declared that four hours during each school-day—that is, for five days a week—shall be devoted to secular instruction exclusively. This number of hours, it may incidentally be remarked, is quite inadequate. It is further provided that "*a portion of each day, not more than one hour, shall be set apart when the children of any one religious persuasion may be instructed by the clergyman or any other religious teacher of such persuasion*," the pupils being kept separate from the others. A provision that children of different religious persuasions shall be instructed on different days would, if interpreted literally, prevent the daily instruction of children by the clergyman of any one denomination. Secular instruction is, however, held to include general religious teaching, as distinguished from dogmatical or polemical theology, and this teaching is placed on the same footing as other subjects. Scripture lesson-books are read, and historical and perhaps also ethical comments are made thereupon. Objections to the receiving of such instruction are respected.

Opinions are divided as to the efficiency of religious instruction given by clergymen under such conditions as are above indicated. The aggregation of children of different ages in a single class for common instruction in religion by a clergyman, however, is obviously a most imperfect scheme, and no doubt has much to do with the relatively small extent to which the provision is utilised.

The division of schools in Germany into Evangelical (Lutheran) and Roman Catholic leads to far better results from one point of view, for *the religious instruction is given by the teaching staff as a part of the general curriculum.* With properly trained teachers this will secure efficiency in the instruction, and under such a *régime* the ordinary Scripture lessons form part of the general programme for religious instruction. In France, however, it is held, that *such teaching tends to create divergence of feeling between children of different sects.*

It is alleged by many Germans with whom the Commissioners conversed, that the religious teaching is apt to degenerate into merely formal catechetical teaching, and an official preparation for confirmation at the close of the school career. The Commissioners, however, had no adequate opportunity of reaching a definite conclusion as to the *pros* and *cons* of this matter, for that would involve a long stay in Germany, and even then decision would, for certain obvious reasons, not be easy.

There is much variation of opinion as to how far purely ethical teaching may wisely be substituted for the religious instruction in schools. France has endeavoured to make the substitution, depending however upon an antecedent and more or less definite idea of God as the fundamental basis of the system. Later this will be referred to again.

Since all educationists make character-building the supreme aim of education, and religious people believe that the formation of character cannot be perfected except through specific *religious* instruction, it is desirable that the State system afford every opportunity for efficient religious teaching by the clergy.

Much may be said for the French system, which aims at bringing about the close association of all children during the period of primary education, so that natural sympathy and respect shall tend to annihilate sectarian bigotry.

8. *Ethical Instruction.*—In view of the fact, however, that various circumstances prevent the clergy availing themselves of the opportunity of utilising to the fullest extent the opportunity of religious instruction afforded under the Act, it is desirable that definite instruction in *ethics* should be given as part of the general programme. For this purpose, the scheme of France may well be taken as a model. This is roughly outlined in Chap. XV, sec. 4. There can be no doubt whatever of the high value of such a programme. In regard to the moral qualifications of the teacher himself, sec. 5 of the same chapter makes some reference to what is demanded of him in the official programme of the Canton of Vaud. These are important as shewing the view of a Protestant Canton; and it may be said that Protestant and Catholic countries are agreed as to the importance of both religion and ethics. Some idea of the German view may be had from sec. 6.

Ethical instruction should embrace the relation of the child or person to—

(*a*) Himself. (Personal Ethics.)
(*b*) His fellows. (Social Ethics.)
(*c*) His country. (National Ethics.)
(*d*) The World. (Philanthropy.)

And he should be so taught to recognise something of the reality of such relationships through the cultivation of—

(I) Personal ideals and character.
(II) The social virtues.
(III) Patriotism, loyal response to the just claims of his country, and the wish to see its institutions perfected.
(IV) The love of mankind, without regard to racial or religious differences.

All these elements should, in the actual instruction, as far as possible be united, not dissociated—that is to say, the above represents only the logical order, and not the pædagogical.

The relation of the child to himself, to his fellows, to his country, and to the world should be *explained*—that is to say, the teaching should embrace actual illustrations of personal, communal, social, national, and cosmopolitan relationships. [Chap. XV, sec. 13].

The present system is seriously defective in regard to its scheme of influencing the ideals of childhood, and yet in any true education the cultivation of noble ideals is of transcendent importance.[1]

9. *Education of the Will.*—It is recognised by those who have systematically studied the question, that high intellectual culture is not necessarily associated with strength of character [Chap. XVI, secs. 2–6], and further, that the latter is of the higher importance both individually and nationally. Strength of character depends upon the *vigour* of the Will, and goodness upon its right direction. [Chap. III, secs. 3, 8]. In this connection the contributions of psychology to education are seen to be of great importance, inasmuch as they shew that *discipline which secures obedience by repression is ineffective and injurious.* [Chap. III, sec. 10]. Proper school-discipline aims at securing self-expression, and therefore a good behaviour and assiduous effort by *self-direction.*

Although the education of the Will is naturally not a "subject" in the school curriculum, it is none the less necessary that the school-teacher should concern himself about his pupils in this respect [Chap. XVI, secs. 5–7], and therefore that he should be better trained and better taught than at present. In this connection, the function of *play*, referred to in secs. 8 and 9 of the last-mentioned chapter, is seen to be of sufficient moment to demand the systematic attention of the teacher. Considerable attention is given thereto in both Europe and America.

The importance, referred to above, of teachers appreciating the difference between coercive and directive discipline, dealt with in sec. 10, demands further remark.

Wherever teachers imagine that the imparting of subjects of instruction is the main function of the school, and wherever the scheme of inspection and examination makes their official future dependent upon success in this respect, much is certain to be sacrificed to mere response to the type of question given by the examiner, as previously explained, and the whole scheme of teaching is liable to be subordinated thereto. The truer education, aiming at the best results in the end, endeavours to secure thoroughness at every stage; it relies upon the co-operation of the pupil, and therefore upon the exercise of his will; it induces him to think for himself and so acquire original power and resource. This type of education may seem to move slowly in its earliest stages: *it is almost certain* NOT *to secure the approbation of an Inspector who marks percentages on subjects of instruction.* But "little and well, and with a good heart," is a maxim that will do much to build up the will-power and national force of a people, a fact which shews how carefully the efficiency of education must be judged.

Corporal punishment as an inducement to assiduity and good behaviour is not unknown in the primary schools of New South Wales. Boys are thrashed with the cane. *This ought to be abolished,* except for offences so flagrant as to almost require expulsion. [Chap. III., secs. 7, 8, and Chap. XVI., secs. 5, 6, 7, 10].

10.

[1] It ought to be remarked, however, that the reading matter is often good, and noble lessons are inculcated.

10. *Civic Instruction.*—Another important ethical element in education is what is known in Europe and America as "Civic Instruction" or "Civics." It is often taught in close relationship with history. No special chapter has been written thereon, but reference is made to the Swiss programme in this subject [Chap. V, sec. 8]. The civic instruction given to French teachers has also been outlined [Chap. 35, sec. 6], and also that given to Swiss teachers [Chap XXXVII, sec. 7].

The object of such instruction is to give children an intelligent idea of their rights, responsibilities, and duties under the laws of their country. For this State, it should embrace some explanation of both the Federal and State Constitutions, some of the larger facts of Common Law, the significance of some of the more important statutes, the development of civilisation, and the characteristic differences of government (*e.g.*, Republics, Constitutional and Absolute Monarchies, etc). It should also touch the question of international law.

A young and democratic country, whose citizens are educated without an adequate knowledge of the responsibilities of Constitutional Government, of the nature of the incidence of Common Law, of the nature of international relationships, of the effect of legislation on a community, of their rights and duties in relation to the State, to the Federation, to *the Empire*, and to the world at large, is in serious danger, both as regards its domestic development and its relations with other nations; in fact, the liability of a democracy to ignorance is one of its special dangers, to guard against which civic instruction is important. This instruction should therefore be given to school children of all ages, the development being adapted to the ages of the pupils.

11. *Physical Culture and Gymnastics.* — Since there is a well-recognised reaction between the mental and the bodily states and habits, physical culture and gymnastics may undoubtedly be made an important instrument of education, acting both upon the minds and characters of the children. By bringing into requisition the full power of the lungs, by promoting the activity of the circulatory, digestive, and excretory organs, it intensifies the feeling of vitality, and, other things being equal, gives greater mental and moral power [Chap. VIII, secs. 1, 4, 6].

So far, insufficient attention has been paid to these matters in the primary system of the State, while, on the other hand, Europe and America have given to physical education the most thorough consideration, and the physique and morale of the people have been correspondingly affected. [Chap. XVII, sec. 6].

The question of such teaching, and of the proper education of teachers therefor, is dealt with in Chapter XVII, where the distinction is drawn between mere athletic gymnastic and *true physical culture based on physiology.* It is shewn in section 6 that there is a curious duality between the needs of the body and of the spiritual part of us, which may be expressed as follows:—

Human duality.

Body needs.	Result.		*Soul* needs.
Nutrition (food)	Physical Growth	Mental	Experience (knowledge).
Proper nourishment	,, Normal growth	,,	Right education.
Physical training	,, Power	,,	Mental training.
Physical precision	,, Skill	,,	Mental precision.
Physical excellence and grace of form.	,, Ideal manliness	,,	Intellectual and moral excellence and grace of spirit.

Physical culture has three elements, viz., the physical, psycho-physical, and the psychical, and has two forms, viz., the systematic or educational, and the recreational. The first aims at bringing about both conscious and unconscious self-control and self-expression, and the latter at securing physical and mental exhilaration. Physical culture, therefore, should be physiologically efficient, and it should be interesting, simple, educative, and, as far as possible, recreative [sec. 7]. Its physiological aim is to enlarge the chest-capacity, and to fully exercise the lungs; to develope the muscular power of the heart and the general tone of the circulatory system; to stimulate normally the digestive and the excretory organs; and to develope the symmetry and vigour of the body generally.

Tasmania has taken a distinctly forward movement in this matter, under Mr. C. Bjelke-Petersen [sec. 12], but this State, notwithstanding that Dr. R. Roth's views practically coincide with the doctrine expounded in Chap. XVII, has not adopted

adopted any general system of physical culture. There is some imperfect gymnastic and a little swimming, but nothing in any way comparable to what is being done in the United Kingdom, Europe, and America.

Very many Continental and American schools are now provided with well-equipped gymnasiums [Chap. XLVII, sec. 22], even where education is absolutely free. In the towns, instructors thoroughly understand their art as specialists, having had the necessary physiological and other scientific instruction as a basis for their special education in gymnastics.

The primary school teachers themselves are also thoroughly taught gymnastics and its relation to hygiene [Chap. XVII, sec. 5–14; Chap. XXXV, sec. 3–15], and the exercises for children are, in consequence, everywhere systematically developed.

It may be pointed out that the study of fatigue by the means of the ergograph, æsthesiometer, etc., shew that severe gymnastic is not recreative, and indeed may be made quite as exhausting as the most difficult subjects.

There are, in nearly all recently-built schools in Europe, well-fitted shower-baths, and in some few cases splendid swimming-baths. These are, without exception, so designed that the water can be made an agreeable temperature. The function of the skin, and the importance of cleanliness in relation thereto, is recognised both by teacher and pupil, through lessons in hygiene.

12. *Manual Training and Sloyd.*—It has often suggested itself to the minds of persons with small acquaintance with educational processes, that children ought to be taught during their school life things that are *practically useful;* and those who hold this doctrine generally include in their purview some trade or handicraft teaching. The teaching of children, however, during their primary school life should have the character of *generality*, should be *educative*, and should not be merely of the nature of practical exercises. [Chap. III]. True education aims at developing their moral, mental, and physical powers in such a way that they may be turned to account *in any direction* whatsoever. *Educative* manual training, therefore, must react on the moral nature by demanding conscientious execution of the assigned task, precision, assiduity, etc. It must make a demand on the thinking power; it must develope control over the muscles; that is to say, it must give physical dexterity. These are the features which so fundamentally distinguish a carefully organised set of exercises in manual training from mere exercises in agriculture, or in carpentering, ironwork, or other trade-occupations. Just in proportion as an administration recognises that the higher functions of teaching are something of far greater importance than the mechanical elements, so will it appreciate the difference between the vulgar utilitarian conceptions and the higher utility of truly educative ones.

The exercises in Sloyd, the essential characteristic of which is that they should be *educatively organised*, should not be confused with lessons in carpentry, joinery, cabinet-making, etc. This is what the educational empiric does not clearly recognise, but what is well understood by all educationists.

The actual exercises are, of course, not absolutely identical in different places. In one respect, however, they are, viz., they are everywhere organically arranged, and are not simply a set of isolated exercises, graduated by mere differences of difficulty. Anyone who has studied the doctrines of Dr. Salomon, of Nääs, in the light of psychology and educational theory will recognise the important difference between the two classes of manual training.

All schools which aim at making education practical, should give instruction of this kind; where it is neglected, the education will lag behind that of Europe and America in an element of considerable moment to our industrial future.

It ought to be remarked here that the time for this work should *not* be taken from the present curriculum, already very short.

Manual work, when properly conducted by a good teacher, is not more taxing than play; it is highly appreciated by the children, since it strongly engages their interest. It should not, however, be taught by mere carpenters or other tradesmen, but by special teachers who have learnt the subject educatively, that is, by teachers who have studied that type of teaching with the same thoroughness as is required in other branches of instruction. Thus, at the seminaries for Sloyd, none but educated teachers will be received for tuition.

It may here be noticed that certain parts of *drawing* may be taught in connection with the course in *manual work*, and this is a way in which two subjects may be co-ordinated. Again, exercises in *arithmetic*, *geometry*, and even *algebra* may also be connected with the *manual instruction*, so that the co-ordination will be extended through the range of these four or five subjects, and the children will have a direct interest in solving such applied questions. Not only will the answers to geometrical, algebraical, and arithmetical problems be practically tested, but, by the great majority of children, the abstract principles will be more clearly grasped. Still further, the interest in purely abstract questions will be enhanced by a keener realisation of the possibilities of their practical occurrence. The manual training should extend over the whole period, from the Kindergarten to the highest class in the primary school.

Finally, it may be added, the period of 6-14 years, and the short school hours of New South Wales, will not allow of the addition of trade or business subjects, without overcharging the curriculum. It is vastly *more important to make the educative foundation sound, than to attempt to include industrial or commercial teaching.*

13. *Drawing.*—Drawing in the European schools is on a totally different plane from what it is in the schools of New South Wales. In general, the mere copying of lithographed forms, sketches, etc., is regarded as of very little value. The European view may be summed up in the following words, translated from the Belgian programme:—

"The system of *copying* substitutes for the material thing merely its graphical representation, and the task of the pupil is *to imitate an imitation.*"

And to make this dictum more impressive, it continues:—

"In suppressing direct observation, and the analysis of the outlines of the object, *one suppresses the intelligent part of the work, from which, above everything, drawing derives its educative and practical value.*"

And it goes on to add that:—

"It is important, therefore, that teachers should be convinced of the necessity of teaching drawing from actual objects placed before the pupils' eyes, *i.e.*, to employ a phrase already appropriated, drawing from nature." [Chap. XXI, sec 2].

Drawing lessons commence in the Kindergarten, where they are, of course, *freehand*. The declared aim is:—

(*a*) To develope skill in the use of the hand.
(*b*) To develope memory of form.
(*c*) To develope some power of invention.
(*d*) To develope a sense of colour, and recognition of the laws of harmony of colour.
(*e*) To assist in obtaining a knowledge of geometry.
(*f*) To give skill in the representation of objects, and in technical drawing, etc.

The Belgian programme includes the drawing of common objects, geometrical drawing, ornamental drawing, drawing from memory, composition and invention, application of the theory of colour, etc. The faculty of exact observation is said to be strongly stimulated by the practice of drawing from nature about which there can be no doubt, and Belgian children are taught to make an exact analysis of the constituent elements of the outline of whatever object is to be represented. The educative value of the work depends very largely upon this.

Considerable weight is attached to the practice of drawing from *memory*, which is regarded as indispensable to those who afterwards mean to make use of drawing in their life-work [sec. 5]. These exercises are undoubtedly excellent for developing form-sense and form-memory, and are of great assistance also in invention.

Difference of opinion exists in regard to the use of colour in the Kindergarten, it being held by some that to allow children to daub with colour is a waste of time; while others believe that not only is their interest in their work greatly increased, but also that their colour-sense is more thoroughly awakened and trained. The Commissioners incline to the latter opinion.

Drawing is used in connection with arithmetic to illustrate magnitudes, and to explain processes; in geography, to illustrate by diagrams, maps, etc., to make the conceptions of cosmography, etc., more clear. It is used also to illustrate natural science.

The French theory of drawing outlined [sec. 10], insists on the *unity* of all drawing, on the recognition of geometry as its foundation, on the necessity of free-hand drawing, on the great importance of visual observation, and on the reaction of this last upon manual observation. Hence it attaches considerable weight to geometrical drawing in the development of the programme, this, however, being executed at first freehand.

On the other hand it has been urged by some German authorities that geometrical drawing should *not* be taken early since it imperils the æsthetic sense; some go even so far as to propose the abolition of geometrical drawing in the lower classes. [Chap. XXI, sec. 14]. In some countries objects belonging to various periods in the history of art, are drawn so as to give some idea of the development thereof [sec. 16].

Perspective drawing is widely taught, both for its value as geometry, and its great value in guiding one in freehand drawing.

In the development of forms borrowed from the vegetable and animal kingdoms, the method usually followed is to first draw the object, and then to conventionalise it; beautiful decorative patterns are evolved in this way. Some of the recent drawing of this character in English schools is excellent, and was occasionally comparable to anything seen elsewhere. Teachers are thoroughly prepared for teaching the subject, its methodology being fully treated in the normal schools [sec. 17]. Of the advantages to any teacher, of the ability to draw, it is needless to speak; it is also important that he should be educated in the general theory of pædagogy.

It may further be pointed out that many of the drawing exercises are directly valuable in connection with arithmetic, algebra, geometry, physics, and natural history, and the drawing lessons should be co-ordinated with the others as much as possible. Especially is this true of *geometry*, geography, etc., while graphic arithmetic and algebra can be made of service as one of the technical forms of drawing.

14. *Teaching of Languages.*—The general practice throughout Europe is to restrict languages to the mother-tongue in the case of people who desire to qualify themselves for unskilled labour only, or who intend to follow only trade avocations. In a democratic country, however, it becomes necessary to constitute the ordinary primary school a preparatory school for higher education, and, therefore, at a suitable stage languages should be taught to those who desire such instruction. If, however, they are taught at all, the teaching should be *thorough*. The difficulties of *unlearning* erroneous quantity or accent in Latin or Greek, or mispronunciation in French or German, are far greater than those of correctly learning the elements. [Chap. XXII, secs. 15, 16].

The general question of language-teaching, at least so far as French and German are concerned, was recently very carefully considered by an American committee of twelve language-professors, who, two years after their appointment, presented a report on the subject. In Chapter XXII a synoptical statement of their opinions is given, and the question is further discussed in the light of subsequent experience.

If one analyses the various methods of teaching languages, they may be divided [Chap. XXII] as follows, viz., into :—

(*a*) The grammatical method, viz., that in which an attempt is made to learn the language through its grammar. This is the method generally adopted, and is also the poorest method [sec. 6].

(*b*) The reading or empirical method in which the grammar is to some extent dispensed with, and the language is learnt by reading it and from its vocabulary. This method is also common [sec. 7].

(*c*) The so-called "natural" or conversational-method in which it is attempted to learn a language as one learns the mother-tongue. This has elements of value, but in its simplest form is by no means satisfactory [sec. 8].

(*d*) The psychological or visualising method in which one associates the heard and printed forms of the word with the object or action represented, and endeavours to form in that way an indissoluble association [sec. 10].

(*e*) The phonetic or vocal-analysis method, which starts by drill in phonetics, aims at securing accurate pronunciation, by overcoming the difficulty introduced by the vocal habits engendered in learning one's own language [sec. 12.]

In a highly-developed form this last is taught in Sydney for German by Mr. F. Bender.

There is a method which seems to give good results generally known as the Berlitz method [sec. 11]; and in Sydney M. Périer has a method based upon psychological principles for learning French which also gives good results. The latter is, in a quasi-official way, taught at Fort-street school.[1]

The psychology of the relation between thought and its expression as applied to learning languages is indicated in section 9.

The teaching of languages in other countries is very successful, and leads to an idiomatic knowledge of the language and to accurate accent and pronunciation. English people when properly taught are also able to learn foreign languages with facility.

The methods adopted by different classes of teachers have been indicated. It is well known that the ordinary or classical method of learning through grammar is one of the most tedious and unsuccessful of all possible methods. On the other hand, the psychological-conversational method leads to excellent results, especially if supplemented by phonetic suggestions as to pronunciation. It has quite lately been pointed out that this method will lead to a far more rapid acquirement of languages than is possible under the old system, and Professor Postgate of Cambridge gives it as his opinion that children who are taught by this method will hopelessly outdistance their competitors. Further, grammar should be learnt after some acquirement of the language—not before.

In a country such as ours, and bearing in mind the present state of education, the importance of securing correct methods of pronouncing Latin or Greek, and French or German, suggests the use of the phonograph. This has lately been largely called into requisition for the teaching of languages, apparently with good results [Chap. XXII, sec. 14].

The question of the importance of teaching the dead languages and modern languages is touched upon in Chapter XXII. It may be said that the great difficulty of finding sufficient time for the teaching of Latin (and Greek), and also for teaching modern languages, will be much alleviated by better methods of teaching. Whatever languages are to be learnt, lessons therein should commence at 10 years of age, or, if attention has been paid to etymology beforehand, they might, perhaps, be deferred till 12. Properly taught, language is not a difficult subject.

Wherever modern languages are taught by teachers unfamiliar with the correct pronunciation, the phonograph should be made available. Seeing, as previously stated, how much more difficult it is to unlearn erroneous pronunciation or quantity, than to initially learn correctly, the pronunciation should be most carefully attended to at the commencement of the instruction.

15. *Teaching of Geometry.*—By the great majority of European countries, the use of Euclid's Elements as a means of learning geometry has, for a long time, been wholly abandoned. England has retained this method, and though the unwisdom of this retention has been pointed out, and though it has also been obvious that mathematical education in England has been placed at a great disadvantage thereby, it is only lately that it has been admitted that we must follow in the footsteps of European method. The matter has been the subject of a long debate, in which a great number of persons, whose opinions have weight, have taken part, and the whole issue has been discussed by the British Association for the Advancement of Science. The recommendations of a committee, specially appointed by that Association, approves such abandonment. [Chap. XXIII, secs. 43–46].

The defect of a text-book of Euclid's Elements is that it teaches, after all, very little geometry, and that in a most tedious way. Its scheme of demonstration, while affecting to be extremely rigorous, is not really so (*e.g.*, the 5th proposition cannot

[1] A general arrangement permitting special teaching in the schools of the Department would be an excellent one. The lessons are not actually given in the Fort-street school buildings.

cannot be proved except by the introduction of a new postulate allowing the rotation or inversion of a figure); by false construction (not obviously false) impossible results can be established by the scheme of reasoning followed. [See Sir John Gorst's remarks, Chap. XXIII, sec. 31].

Not only can nearly the whole of such geometry be taught intuitively, but by a different scheme of demonstration the proofs can be more readily and more obviously reached. [Chap. XXIII, pt. 2, secs. 48–60].

French and German treatises on geometry of quite a moderate size teach a great deal more of the subject than can be gleaned from Euclid, and there is no doubt that the abandonment of Euclid's Elements will not only make it possible to handle the subject more interestingly, but also to learn it more thoroughly and more comprehensively. [Chap. XXIII, secs. 5, 6].

Since the greater part of Euclidean geometry can be reduced to almost self-evident propositions, so that the teaching may be made intuitive, quite small children may learn a considerable body of geometrical truth in an interesting way, and very easily. The widespread dislike for Euclidean geometry is largely responsible for the indifferent appreciation of the subject and for a general absence of geometrical knowledge. Moreover it ought to be said that the reading of the books of Euclid occupies a considerable time in the primary schools, (though in the end but little geometry is learnt), and the more interesting branches of the subject are left absolutely untouched.

16. *Geography.*—The methodology of the teaching of geography in Europe is very thorough, the subject being made interesting by being taught in relationship to allied subjects. In many places it commences in the kindergarten, the morphological element receiving first attention; then the idea of locality, the orientation of places known to the child being dwelt upon. His local knowledge is then extended to surrounding regions, of which he has some knowledge; from these to his country generally, and from his country to the empire, and from that to the world at large. In every way possible it is made *interesting*. Dry repetition is avoided. History is taught in connection therewith, each subject helping and making significant the other. By little exercises in geographical drawing, sometimes made from his own survey, the child learns also how maps are built up. The maps of Europe, it may be said, are excellent.

The European view, viz., that it is of the *first* importance to have a realistic and thorough knowledge of one's own country, of its characteristic features, its ways of communication, its touch with the outer world, its natural wealth, and its general resources, should govern the teaching of the subject in this State also. By explanations of its historical and commercial relationships, our country should be connected with England, and the possibilities of the mission of English-speaking people should be broadly outlined. Then the relation of the British Empire to the rest of the world could be made intelligible, viz., through subjects giving a real interest in the issues that lie open to any great race. In this way national dignity of character, a very necessary corrective to blind national prejudice, may be developed.

The characteristics and resources of other countries, in relation to our own, will not be without interest to children. If all branches of geography were, as far as possible, taught simultaneously, its educative value might be made very high indeed; and here again is seen the need for well-educated teachers with broad outlook, such as a scheme of training, similar to that of other countries, can assure.

Wherever history is taught, maps illustrating historical movements, and pictures giving reality to geographical forms, and giving general information, should be largely used. In this connection may be mentioned historical, ethnographical, and similar pictures. To give a vivid idea of the world's morphology, or the real appearance of different places, the Commissioners saw nothing better than the beautifully coloured, photographically reproduced scenes, known as *Photochromes*. [Chap. XXIV, sec. 10, Chap. LI, sec. 3], and a small selection was made at the instance of the Commissioners, and supplied to the Department at a remarkably low cost.

Physical geography is always taught. The place of the world in the solar system, and of the solar system in space, are explained, thus carrying onward the conceptions of children into the larger reaches of time and space.

An

An important aspect of the subject is its dualistic nature [Chap. XXIV, sec. 2], touching abstract science on the one hand, and human relationships on the other. This is obvious from the following :—

GEOGRAPHY.

Scientific side—	*Humanistic side—*
Mathematical,	Historical,
Morphological,	Political,
Topographical,	Commercial and Industrial,
Physical, etc.	Ethnographical, etc.

Some idea of the perfection of maps may be had from Chap. XXIV, sec. 4.

It may be mentioned that in the rural schools of France, and many of the schools of Switzerland, elementary *surveying* is taught, so that the people can measure up their crops, etc., and undertake any simple surveying desired. [Chap. XXIV, sec. 5.]

Another feature of great interest is the practice of taking school children for *geographical excursions*. With teachers who know something of geology, physical geography, history, general science, etc., such excursions are extremely interesting and very instructive. [Chap. XXIV, sec. 17]. The mere copying of maps is everywhere falling into deserved discredit, but map drawing may be made educative. [Chap. XXIV, sec. 13]. This subject is worthy of our serious attention, and if the State Railways made the opportunity here, it would be an excellent thing for both teachers and scholars.

The equipment for the teaching of the subject consists of a black globe, a tellurium, a planetarium, an armillary sphere, a uranotrope, sometimes a relief globe of the moon, pictures, photographs, *lantern slides*, etc. [Chap. XXIV, sect. 18, to which reference should be made].

Reference is made to the special method of teaching the blind geography. By a special series of maps this subject is most successfully taught to them [Chap. XXIV, sec. 19], and often their achievements in the subject are surprisingly excellent.

17. *Arithmetic and Algebra.*—In the school system of New South Wales, arithmetic is taught early and algebra comparatively late. It is desirable, however, that subjects, the logical elements of which are so fundamentally identical, should as far as possible be taught together, although in the early stages of the teaching the algebra need not be formal. The mode of teaching these subjects in other countries is briefly outlined in Chap. XXV. Perhaps the characteristic difference between the European and our teaching is the weight attached in the former place to mental arithmetic, and it is often required that mental processes shall be followed unless they are liable to lead to mistake or are tedious. It may be remarked that the lengthy arithmetical sums often given with us are practically valueless, since in practical computations professional computers have no difficulty in making use of abbreviated methods. The educative value of arithmetic lies in the thinking involved. The principles underlying arithmetical and algebraical processes are very carefully handled in European schools, stress being laid upon the importance of the children thinking accurately. Endeavour is made to give the children concrete ideas of the significance of number. The mere writing down or utterance of such a number, say, as 10,000, has no meaning for a small child ; if, however, he be taught to represent it to his mind as groups of real objects, the numerical conception acquires reality.

Examples in arithmetic, to be of direct interest to the child, must have some practical value, be in concrete form, or concerned with something in which he is interested. Mere *rule-of-thumb processes are to be avoided*, such, for example, as certain forms of compound multiplication, duo-decimal multiplication, etc. It is better to take simple cases that are thoroughly understood, and expound the rule when the intelligence is sufficiently advanced.

It is, of course, eminently desirable that no arithmetical or algebraical examples leading to false conception of physical phænomena should be given. Some English treatises on arithmetic offend in this particular, an example being given

given in the chapter on "Reform in the Training of Teachers" [Chap. XL, sec. 13]. A question leading to false physical conceptions will not be given when the proponent has a proper knowledge of physics, and similarly for other sciences; and hence the necessity for thorough education in general elementary principles, even for the proper teaching of arithmetic. Questions for arithmetical practice should be always normal cases.

The nature and laws of arithmetical operations may readily be explained to quite young children, provided they are thoroughly understood by the teacher, are put in proper form, and are suitably illustrated. The aim in Europe and America is to *make every step rational.*

Special care is taken in Europe not to develope mere "parrot-memory" of multiplication and other arithmetical tables. Unfortunately, all English children are greatly handicapped by the English systems of weights and measures—systems that, so long as they are retained, must place our people at a disadvantage, both industrially and commercially. By teaching the metric system to children in schools it will be very easy, even in one generation, to eliminate the difficulty and to avoid the inconveniences of the present cumbrous system.

In the German methodology of arithmetic, distinction is made between the introduction to arithmetical ideas, facility in arithmetical operations, and the application of arithmetic to various problems. As far as possible the whole range is covered in the earliest classes, the arithmetic, however, being so developed that the cases, simple at first, become more and more complex as the pupil passes into higher classes. Mental arithmetic receives the greatest possible attention, the arithmetical problems being drawn as much as possible from other branches of instruction [Chap. XXV, secs. 2 and 6].

In dealing with mathematics generally, the British Association for the Advancement of Science recommend a constant appeal to concrete illustrations. They strongly urge the introduction of the metric system, the abandonment of the elaborate manipulation of vulgar fractions, the introduction of the ideas of ratio and proportion concurrently with vulgar fractions, the early introduction of decimals, the use of contracted methods and the exhibition of the method of finding result true to a limited number of figures, the use of tables of simple functions—for example, of logarithms, circular functions, etc. These recommendations must commend themselves to everyone who has given the matter any attention. [Section 6].

In algebra they recommend the testing of formulæ by arithmetical applications, the use of graphs, the method of commencing with simple illustrations, the abandonment of extravagantly complicated algebraical expressions, of elaborate resolutions into factors, of difficult combination of indices, of equations that demand considerable ingenuity and manipulations; and so on. [Section 6].

It is desirable that the connection between algebra and geometry should also be more clearly indicated in teaching, so that the three subjects—arithmetic, algebra, and geometry—may be closely inter-related in the scheme of instruction.

Vector algebra is not taught in this State in the primary schools, but it would be very easy to make children understand its elementary conceptions—a matter of great importance as an element of mathematical thought. Some little idea also could easily be given of the significance of determinants. Naturally, all this involves a training of our teachers comparably to the training in Europe and America.

18. *Natural Science.*—The place of natural science in the curriculum for primary schools is receiving increasing recognition in the United Kingdom and is well recognised in Europe and America. [Chap. XXV, sec. 1]. That it should find a place in the curriculum of this State is evident if reference be made to the work done in other countries. A special committee of the British Association for the Advancement of Science, consisting of eminent scientists and educationists, strongly recommended in 1902 the introduction of science teaching in English elementary schools. This has been done in recognition of the fact that such teaching is essential to enable the community as a whole to respond to the demands of existing conditions in commerce and industry. The very serious consequences to Great Britain of national neglect of scientific knowledge has been pointed out in no unmistakable terms by Lord Rosebery, Mr. Joseph Chamberlain, Dr. Haldane, Sir Norman Lockyer, and many others, who fully recognise the necessity of English industry and commerce more fully availing itself of scientific knowledge

knowledge. To do so in a way comparable to European practice, it must create interest in scientific subjects in the elementary school. In order to accomplish this there must necessarily be adequate scientific equipment for the schools, and proper scientific training for the teachers. The report of the British Association Committee, above referred to, is to be found in Chap. XXXVI, sec. 4.

At the present time the schools of the Department of Public Instruction are inadequately equipped for scientific teaching, both in respect of material and personnel; nor have the teachers, even when passing through the training school, any adequate scientific teaching—certainly nothing comparable to what they receive in Europe. This absence of science-teaching in the primary (public) schools of the State is a grave defect, and cannot be remedied except by a different scheme of educating our teachers. What little science is learnt is not, *speaking generally* of course, realistically learnt, either by the teachers or by the scholars. In the words of M. Dr. Guex, of Switzerland, "Direct observation of *things* must be substituted for the study of *words*; the child must be taught to exercise his judgment, by guiding it, without imposing upon him ready-made ideas; he must be made to learn little but discover much," etc.

Special attention is drawn to the teaching of natural science in Europe in the lowest classes of schools. Anyone who has been through the primary (public) schools of this State, or knows the nature of the object lessons given therein, will see, on making a comparison with the programmes given in Chap. XXVI for Austrian, Belgian, German, Swiss, and other schools, how very far behind we are in this State. Primary schools in some parts of Europe are excellently equipped for the teaching of science (far better than even the *secondary* schools here), and it is a hopeful sign in England to see that the training schools for primary teachers are recognising the necessity for properly educating their teachers in this respect, by having well-equipped laboratories for the scientific education of the student of teaching. The great educative value, as well as the immense practical importance of scientific knowledge, affords one of the strongest reasons for making reform in this matter urgent.

Reference may be made to the recognition by Belgium of the value of scientific knowledge to the farming and dairying population and its influence on education. At the present time Belgium practically supplies her own needs in respect of dairy products, whereas a decade ago her imports were large. This is the result of a suitable education of her people. *Scientific instruction in the primary school is an essential basis for proper subsequent development*, either in higher education, or in education for ordinary agricultural, commercial, industrial, or other pursuits. The child, properly taught the elements of science, has a far more intelligent outlook upon the world, and a better understanding of its present activity, than he has where the subject is neglected. Chapter XXVI should be read in connection with these remarks.

A very interesting circumstance noted by the Commissioners was the frequency of gifts of materials for the school museums by the principals of various industrial establishments. Another matter of interest was the fact that collections are frequently contributed to by the school children themselves.

In regard to apparatus, there will be little difficulty when the teacher is properly educated. "It is by simple and inexpensive apparatus that such conceptions of physical science as may be included in the programmes of the primary schools, are established," says the French official programme [Chap. XXVI, sec. 8], and the student-teachers in at least one of the normal schools take, on leaving, a cabinet for chemical and similar experiments, made by them during their course. [Chap. LI, sec. 4].

Given an education equal to that given in the European schools for the training of teachers, our teachers throughout the country will have little difficulty in practically orientating their teaching according to the circumstances of the locality, and without causing the instruction to lose its educative value. In this way the instruction will not only be of far greater interest to the children, but will also materially help to increase our wealth and well-being.

The primary school is not the place to substitute trade or professional for educative instruction; nevertheless, a *practical orientation* of all subjects is in no way inconsistent with the maintenance of the educative value of the teaching. To make primary schools mere schools of book-keeping, of agriculture, of dairying, of carpentry,

carpentry, joinery, etc., would enormously reduce their educative value. On the other hand, an intelligent and properly-educated teacher will have no difficulty in illustrating the subjects in the curricula (arithmetic, algebra, geometry, science, etc.) in such a way as to immensely reinforce their interest, and render them directly beneficial. It is important not to be betrayed into this mere trade or professional view, on the assumption that the value of the education is increased. The contrary is the truth.

It ought to be added that systematic science-teaching by a properly educated and trained teaching-staff should not be confounded with a spasmodic inclusion of science-subjects in a curriculum, to be taught by insufficiently educated teachers, who will at best learn the science in question in a merely literary way.

V.

THE TRAINING OF TEACHERS.

[G. H. KNIBBS.]

1. *Introduction.*—There is but one way of making the educational system of this State satisfactory, and that is by—

(*a*) Properly educating and training our teachers.
(*b*) Making our school buildings respond to the requirements of a good school-hygiene.
(*c*) Making the educational equipment of the schools more complete; and
(*d*) Introducing a suitable scheme of instruction.

The defect in our *system* at present, unmistakably evidenced by our employment of pupil-teachers, and by the method of educating and training of the teachers, both during their pupil-teachership and in the training college, has been dealt with in Division III. It remains to shew how our teachers may be thus better educated *as the most fundamental step in reform.* Anything short of an equal education and training to what is received in Europe, must necessarily be inadequate, since it would inevitably leave our system inferior. Mere changes in the curriculum amount to very little, unless they are parts of a properly organised system, taught by adequately educated and trained teachers; for the thoroughness of the teacher's professional preparation for his work is what makes any curriculum significant, and it is obvious, therefore, that the personal factor must be taken into account. *Education cannot be materially improved by merely mechanical changes.*

In considering how much the State has to make good in this respect, it ought to be borne in mind that the *effect of good teaching is cumulative*, and that where the primary school is supplied by a thoroughly qualified staff, the education and outlook of the candidates for teaching are, age for age, far better than in countries where, from defects in the curriculum, imperfect methods, or from want of properly qualified teachers, the teaching is inferior. Consequently, one of the most serious difficulties is that of rapidly improving the average professional qualification of the teacher. Owing to the system followed, the teacher's calling does not command the respect it should—*an inevitable consequence of the pupil-teacher system*, and, indeed, of any system that is lax as regards such qualification. This reacts, of course, upon the willingness of the better class of men and women to engage in teaching, far more so than the question of emoluments, which also is not unimportant. In Germany and America, and in fact in many European countries, ladies of good social standing are entering into primary and kindergarten teaching, despite the fact that the emoluments are small. In Europe especially, the social status of female teachers is often distinctly higher than that of male teachers. This influx of a better class into the teaching profession is a consequence of increasing public respect for the office of the teacher and of a recognition of the fact that woman, especially in junior classes, has an important mission, and one which will greatly affect the national future, viz., the creation of noble ideals in the child mind. When viewed in relation to its ultimate influence on the community, and when the nature of true education is regarded, the improved status is seen to be one of the most potent factors for good, for it fundamentally affects the development of the national character. Teachers are called upon, in fact, to deal with the human heart and mind at a period of life when they are most susceptible to formative influences,

and

and this is why all educationists realise that the earliest influences are those of highest importance. It is for this reason that so much weight is attached to the kind of work done in the kindergarten, and why kindergartners are asked to prepare themselves very thoroughly, not only by acquiring a good education, but also by studying psychology, educational theory and history, the phænomena of child life, etc., in addition to their special professional work, viz., the technique of the kindergarten. No one can witness the effect of the true kindergarten without realising the justice of this view of the teacher's function, and what a transforming influence the kindergarten has on the character and ideals of the little child.

When the question of the education and training of teachers is examined, the importance of the formative elements for their own development is equally obvious, and it is seen how much depends upon the tone and character of the whole scheme. This is important in two respects—firstly in relation to the teacher directly, secondly in relation to public appreciation of his work; for it is desirable to induce men and women of the highest character and education to enter this calling, to remain in it, and to command for it public respect. To some extent the inducement may be created by increase of emoluments, and in this State that aspect cannot be overlooked. It is, however, more dependent upon the fact that the people of this State, as a whole, recognise that the higher qualification of the teacher is necessary. *A public opinion in favour of sound education is an essential if we are to be educationally the peers of America and of Europe.* Without the preparation we must be content to admit our inferiority. Pretence at anything else is idle, and it is in this way that one may see the unspeakable importance to the future of our State and Empire of our educational system, and the Commissioners feel that it would be difficult to state this too strongly.

2. *Principles of reform in the training of teachers.*—The subject of reform in training our teachers is discussed in Chapter XL. In order to place education in this State on a proper footing, it will be necessary to pass as quickly as possible from the present system, which charges itself only with a very imperfect training of (only a portion of) its teaching staff, to one *which completely abandons the pupil-teacher system*, and which gives all teachers a better preliminary education and an adequate professional training before they are allowed to teach at all. *This will involve strenuous effort* and, as pointed out in Chapter XL, sec. 41, the sending of several of the younger and better educated men to Europe to learn the methods of the great pædagogical seminaries of France, Switzerland, and Germany, the men being selected from those who, in addition to possessing the necessary general qualifications, have also qualified themselves linguistically.

Much may be done through the personal influence of the directors of the training colleges, for their ability to inspire with high ideals is among the most powerful of the formative influences that affect student-teachers. In this light it is evident that a director should have the fullest opportunity of maintaining close touch with the higher view of education, and with its movement throughout the world. That he should be liberally cultured and possess *savoir faire* so as to help to form the disposition of the teachers during their professional education goes without saying. As his personality must react on the teachers, so must the teachers react upon the rising generations of the State in order to reach the results desired. All this is obvious when account is taken of the elements determining the moral and mechanical efficiency of the teacher. These elements [Chap. XL, sec. 3], may be indicated as follows :—

Efficiency of teacher depends upon his—

(*a*) *Moral*—	i Character.	(*b*) *Mechanical*—	i Intelligence.
	ii Moral outlook.		ii Intellectual outlook.
	iii Grasp of moral significance of education.		iii Grasp of intellectual significance of education.
	iv Knowledge of moral or ethical subjects.		iv Knowledge of subjects of instruction.
	v Sympathy and enthusiasm.		v Force and vitality.
	vi Knowledge of the art of stimulating ethical expression, will, purpose, etc.		vi Knowledge of the art of stimulating intellectual effort, developing practical skill, etc.
	vii Ability to direct, in regard to moral culture.		vii Ability to direct, in regard to intellectual and physical culture.

3. *Formative Influences.*—The formative influences, the powerful operation of which on a teacher's mind, in order to prepare him for his work, is so necessary, are partly historical and partly philosophical in their origin. The function of the study of the history of education is indicated in Chap. XL, sec. 4. Properly treated this subject will efface the narrowing tendency to empiricism, and will serve as a source of inspiration to high effort. If the selection be properly made, no candidate for the teaching profession can help feeling his moral fibre stirred by the noble examples of the great figures in the history of education.

The function of the philosophy of education is indicated in Chap. XL, sec. 5. The study of this subject ensures recognition of the real aim and process of education, and guards against the belittling effect of that self-sufficiency to which, through daily contact with the child-mind, the teacher is liable, unless he specially safeguards himself; thus it tends toward professional thoroughness. The philosophy of education, covering, as it does, the question of its *purpose* (teleology), and its *method* (methodology), greatly broadens the outlook on the subject. The former deals with the moral aims of education [Chap. III, secs. 3–8, Chap. XL, sec. 7], and the latter largely with the psychology of method [Chap. III, secs. 9–18, Chap. XL, secs. 6–13].

From the study of pædagogic-psychology it has been learnt that the essential difference between empirical and rational methods depends, not upon the empirical prescriptions of psychology, but upon its rational guidance [Chap. XL, sec. 10].

Bearing in mind that the teacher is daily moulding the child, by influencing the formation of his physical, mental, and moral habits [Chap. XL, sec. 7], it is evident that he ought to have an intelligent knowledge of physiology, hygiene, general psychology, and ethics. How great the need for the first two subjects is shewn, both in the way we have built our schools, and the conditions under which we have placed the children in them, especially in regard to lighting and seating [Chaps. XLVII to XLIX], and in regard to the physical discomfort of schools in cold parts of the State during winter. Without serious increase of cost, and often without cost at all, the hygienic conditions of school-life could be made to correspond with normal requirements. This defect is deplorable, and illustrates the importance of keeping our system in proper touch with the progress in school hygiene elsewhere. One matter, viz., the seating, was referred to long ago by Dr. Reuter Roth (1885), and there is no doubt that the physique of our people suffers through it. [Chap. XLVIII, sec. 3–18]. In this connection, the importance of better and wider professional education for the teacher is clearly seen.

It may be remarked that these ideas are not Utopian. They represent the practice of other parts of the world where the value of sound education is appreciated; and *what is possible elsewhere is possible here if only we are in earnest.*

4. *The Curriculum for Teachers.*—The subjects in the curriculum for teachers may be analysed under two divisions, viz., the *formative* and *informative*, or, in other words, those that favourably influence his mental attitude toward his professional work, and those that inform him, *i.e.*, qualify him to give instruction with a sufficiently wide outlook. These are dealt with in Chap. XL, secs. 11 and 17. The formative subjects, or those which confer *educative power*, may be regarded as the following:—

(i) History of Education.
(ii) Theory of Education.
(iii) Psychology in relation to Pædagogy.
(iv) Ethics in relation to Pædagogy.
(v) Elementary anatomy and physiology.
(vi) School Hygiene.
(vii) Physical Culture and Gymnastics.

The inclusion of these is necessary to place the teachers of this State on the same footing as their confrères in Europe, and to properly develope our education system, through the force of a wider outlook.

5. *Qualification in subjects of instruction.*—When the curricula of the seminaries of Europe and America, and the modern training colleges of England, are compared with the work done in the training colleges of this State, it will be at once realised that we are a long way behind. It is, of course, impossible to compare a short

short course like that of the New South Wales system with fully developed courses like those of Europe, where the necessity for educating and training *every* teacher is more thoroughly recognised. To place the teachers of this State on a similar footing in regard to large outlook and educative power, the subjects of instruction ought to have about the following range :—

(i)	English	(*a*) The development of the English language and literature, (*b*) Grammar and analysis, (*c*) Prosody, (*d*) Outlines of logic and rhetoric.
(ii)	Languages	(*a*) Latin, or (*b*) French, or (*c*) German.
(iii)	History	(*a*) Ancient, (*b*) Modern, (*c*) English.
(iv)	Geography	(*a*) Topographical, (*b*) Industrial, (*c*) Commercial, (*d*) Political, (*e*) Physical, (*f*) Mathematical.
(v)	Cosmography ...	(*a*) The solar system, (*b*) The stellar universe.
(vi)	Mathematics ...	(*a*) Arithmetic, (*b*) Algebra, (*c*) Trigonometry, (*d*) Planimetry, (*e*) Stereometry, including spherical trigonometry, (*f*) Projective geometry, (*g*) Historical development of mathematics.
(vii)	Natural Science ...	(*a*) Botany, (*b*) Zoology, (*c*) Chemistry and Mineralogy, (*d*) Geology.
		(*e*) Physics, (*f*) Anthropology and Hygiene.
(viii)	Music	(*a*) Theory of Music, (*b*) Class-singing, etc.
		(*c*) Instrumental Music.
(ix)	Drawing, etc. ...	(*a*) Freehand, (*b*) Geometrical, (*c*) Modelling, etc.
(x)	Writing, etc. ...	(*a*) Theory of position in writing.
		(*b*) Plain and Ornamental Writing.
		(*c*) Lettering.

An outline is suggested in secs. 17–34, based upon the work done in the Seminarium at Küsnacht, Switzerland, which should be regarded as *illustrative* of the kind of work done in Europe. This may be read in conjunction with Chaps. XXXII–XXXIX for a more complete idea.

6. *Instructors of Teachers.*—The principle followed in Europe is that the instructors of teachers shall be men of good general education, either University graduates, or men of University standard of general education, and that they shall be *specialists* in their particular subjects. They teach either a single subject or a cognate group. This method obviously has enormous advantages. [Chap. XXVIII, sec. 4]. Each teacher is a master of his subject, having enthusiasm therein if he be rightly selected.

Moreover, each teacher is expected to have thought of the methodology of imparting his subject. His function is not merely to instruct the teacher, but also to reveal to him the relationship of cognate subjects, and to educate him *as a teacher*. The difference between a properly-equipped teachers' training college and a University proper should be distinctly recognised. A training college is a *professional school*, and must adapt its teaching accordingly—that is, it must aim at properly equipping the teacher for his professional work.

7. *Proper Nature of Training Colleges.*—The defects of the New South Wales training scheme are stated in Chap. XL, sec. 37. These defects touch the curriculum, and the scheme of the college itself. Attention may now be restricted to the latter. No seminary for teachers can be regarded as properly equipped that has not an *adjunct school* for practice. This school should be ideally equipped, so as to be an object-lesson in educational equipment, and in school-method, to all teachers passing through it. The adjunct school must necessarily be *small*, and provide for student-teachers as auditors. The idea of such an establishment is outlined in Chap. XL, sec. 38. Athough, perhaps, it should not be part of the University, yet it is eminently desirable that the training college in the metropolis should be in the closest possible association therewith, so as to maintain sympathy and touch with higher education generally ; and, further, that, as far as possible, it may have such instructional advantages as a University can offer. Student-teachers will be favourably influenced by being thus brought into direct contact with higher education.

The

The teaching staff of the Seminary should be specialists in their subjects, and the grade of teaching should be superior to ordinary secondary school teaching.

The length of the curriculum should be three years, and during a portion of that time—say, twelve months—practice in teaching, substantially on the lines, say, of the Jena Practising School, should be a feature in the curriculum. [Chapter XXXIX.] This practice is not to be confounded with the type of practice obtained in the primary schools or training colleges of this State.

Before a single lesson can be given in the Jena seminary, it must be drafted so as to give it such methodical unity as the subject will admit of; its matter must be exactly and clearly articulated, the individual parts being indicated by marginal headings. The synthesis of the lesson must be clearly defined, so that there shall be distinct evidence of the student-teachers' apprehension of the theory of education. In developing the lesson, it is required that a system of questions be devised (known as concentration questions), the object of which is to strongly direct the mind of the pupil to the essentials, to intensify his attention, to make him apperceive those elements in which the logical unity inheres. Each one of these concentration questions have to be definitely set out in the draft of the lesson. After the first lesson has thus been carefully sketched out, it is submitted for the approval of the Director of the Seminary. If faulty it is revised, and when finally approval is accorded the lesson is given. It is then criticised, first by the student himself, and afterwards by the instructors and fellow students. This process ensures thoroughness of preparation and gives the practice a high educative value. It tends also to perfect the *form* of the lesson to the last possible degree, and to ensure that the psychology of its method is satisfactory. The merely mechanical part of any properly designed school system is of course very easily learnt, and does not require discussion. This thorough professional practice is what is so sorely needed for the teachers of this State.

8. *Adjunct Schools for Practice.*—As just implied, the adjunct school for practice is a most important part of the equipment of a training seminary. It gives the Director an opportunity of testing how far the student-teachers really grasp the matters they are studying; it enables him and the special teachers to assist them in that self-criticism which, more than anything else, is necessary to perfect their training. It helps to reveal how individual freedom in teaching may be secured, notwithstanding that a definite type-programme must be followed; it accustoms the student-teacher to the disciplinary problems that arise in school life, and so on. The adjunct school serves also as a model to which the student-teacher will afterwards aim at making his school conform. It should of course be a *primary school*. There are obvious reasons for this. The *art of teaching* should be most highly developed in the teacher of the youngest, while the *extent of knowledge* needs to be greatest in those that are called upon to teach adults. The reason for this is, that the teacher of little children is called upon to create their ideals, to stimulate their self-expression, to establish them in good physical, mental, and moral habits; and owing to the adaptability or plasticity of the child, what is done in its earliest years has, as is well known, the greatest influence on its development.

In one sense, all education is self-education, and the teacher of young children needs therefore the greatest sympathy and tact, the help that an intelligent study of educational process can give, and all the inspiration that the history of past achievement in education can afford, in order that he may lead children into those habits of thought and action which will help them throughout life in self-development.

Here it may be parenthetically remarked that it is by no means an unknown thing in American elementary schools to place the ablest and most highly paid teacher in charge of the youngest class.

In the higher classes of schools, where the children are more established in their bodily and mental habits, and where the content of the instruction has to be increased, the *knowledge* of the teacher becomes of increasing importance, and his *skill in teaching* is of less moment, since the formative influences become less and less effective as time goes on. Hence, as the school life progresses, the purely educative content of the instruction decreases in importance, while the informative content increases in importance.

The adjunct school must, as previously stated, be a *small* school, so as to afford the best conditions. To send teachers to an ordinary school for practice is not satisfactory, and cannot be compared in efficiency with the method above indicated. The *special* practising school is the more educative.

The practising schools of the type mentioned have generally so excellent a reputation that considerable fees would readily be paid by children attending them, for throughout their efficiency is very high. [Chap. XXXIX, sec. 1]. An amount of attention can be bestowed upon every part of the organisation and equipment, upon the curriculum, and upon the pupils, which is neither necessary nor possible in the ordinary school.

The great advantages of a seminarium associated, as at Jena, with a University, are pointed out in Chap. XXXIX, sec. 3.

9. *General matters.*—Since teaching by sense-perception ought to be as conspicuous a feature of our schools as of the schools of Europe, the methodology thereof should constitute a special feature of the training colleges. The art of stating that which it is desired to impart so as to make it obvious—that is, so that it will be *apperceived* by the children—is the secret of thoroughness in education. A clear perception of each new idea, a wide association with pre-existing ideas, and a recognition of their general significance, make them truly permanent items in one's intellectual endowment.

Education in a University ought not to be in any way regarded as a substitute for proper professional education at a teaching seminary of the character indicated. While it is of great importance that primary teachers should be liberally educated, it is by no means necessary that they should be University graduates, and a graduation course is not in itself an adequate preparation for a teacher. *The seminary, with its adjunct school, is undoubtedly a better scheme of preparation; in fact, it is the only efficient scheme.*

Although at the present time it may be necessary, at least in the metropolis, for the student-teachers to attend for certain subjects at the University, it is desirable that ultimately much of their instruction should be received in the training-college itself. If, however, a Chair of Pædagogy were established in the University of Sydney, and student-teachers were required to attend for lectures, this dictum would be modified. The occupant of such a Chair would, doubtless, deal with the history and theory of education, and, as a part of the latter, with pædagogical psychology and methodology. Such a course would be necessary for both primary and secondary teachers.

The staff of the *practising-school* should consist of the ablest class of primary teachers, and passage through this experience might be regarded as a normal element in the qualification for the position of Inspector of primary schools. Each teacher should be a specialist in methodology, and this would make his subsequent services as an Inspector more than ordinarily valuable.

As already pointed out, the educational equipment of the training-college is a matter of importance; so also is the existence of a suitable pædagogical museum, not only for the education of teachers, but also for the education of the public as to the requirements and value of education. A good pædagogical library and museum, containing respectively all the most important works on education, and teaching-material from all parts of the world, would not only be a focus of interest for members of the teaching profession, it would also give the public a suitable opportunity of learning something definite in regard to the material organisation of modern education in other countries. Such a revelation as it would afford of our educational position in relation to that of other nations would probably assist the Department of Public Instruction in acquiring that cordial financial support, without which it is difficult to see how to bring about the desired reforms, or in fact to secure any reform that could promise to make our system comparable to the better systems of Europe and America. Chapter LI should be referred to in connection with this matter.

VI.

SCHOOL-BUILDINGS AND SCHOOL-HYGIENE.

[G. H. KNIBBS.]

1. *Introduction.*—The question of school-hygiene has in this State received very little systematic attention. This is evidenced by the ventilation-conditions of most of the schools, their orientation, their scheme of lighting, the arrangements for seating the pupils, the yards and conveniences associated with the school, the general conditions to which children are subject while in the schools, and the absence of proper provision for physical culture. Recently the question of ventilation has received increased attention, but the whole arrangement in regard to heating and cooling our schools is still far from satisfactory, from a European standpoint. This will be seen on a comparison with what is indicated in Chapters XLVII–XLIX, in which school-hygiene in relation to school-buildings and premises, in relation to school-furniture, and in relation to the conditions of the school-pupil himself, are briefly discussed.

School-hygiene is to-day fully recognised as a part of the normal treatment of an educational system [Chap. XLVII, sec. 2], and there is great force in the Swiss dictum that it is "only through the fruitful alliance of hygiene and pædagogy" that "the great hopes which have been born in every heart by the splendid development of primary instruction can be realised" [sec. 3]. Teachers are required, therefore, to understand the subject of school-hygiene, and to be seized of its importance.

Attention is drawn to the Genevese Regulations of January, 1898, in regard to hygiene for schools [sec. 4]. A synopsis of the whole subject is given in sec. 7, to which reference should be made.

2. *School-plots.*—However hopeless it is to now think of attempting to acquire ideal school-plots in existing towns, all future selection of school sites should err, if at all, on the side of liberality, and we can do little better than follow the indications of Switzerland set out in Chapter XLVII, sec. 8. London has already realised that, however costly, valuable sites must be acquired for school purposes. In 1883 the Swiss Federal Council enacted that the plot for gymnastic exercise alone shall be a minimum of about 86 square feet per pupil—that is to say, there must be about 200 feet by 215 feet for gymnastics and games in the case of a school of 500 pupils.

3. *Form and dimension of school-buildings.*—In all European schools there is a class-room for each class, and this must always be the case where there is any attempt to reach high efficiency. A degree of concentration on the part of both teacher and pupils is secured in the single class-room which is quite impossible to attain in the schools arranged as in New South Wales. The division of what was originally a long school-room by means of glazed partitions, is a recent feature of our schools, and, though an improvement, is still very unsatisfactory. It is one of the defects associated with the employment of unqualified teachers, for it is intended to admit of supervision by the head-master. Such a scheme of supervision is in any case a bad one. The long school-room has the further disadvantage that *the lighting arrangement cannot possibly be made satisfactory*, see section 7 hereinafter.

The

The normal equipment of a school is indicated in Chapter XLVII, sec. 9, and is as follows :—

1. Each class-group should have a separate class-room; more than one room, therefore, may be required for the whole of the pupils of one grade.
2. In addition, there should be a large room for manual-work for boys.
3. Similarly a work-room for girls.
4. A large hall for gymnastics.
5. A large hall for general meetings, reunions, etc.
6. A laboratory for physics, astronomy, etc.
7. A laboratory for chemistry.
8. A museum of natural history.
9. A library.
10. A reading-room.
11. If cooking be taught, one or two kitchens will also be required.
12. And pantry and store room.

For lower-grade schools, Nos. 6, 7, and even 8, may be all together; so also may Nos. 9 and 10 be in the one room.

4. *Orientation of Building.*—The question of orientation is one of well-recognised importance [sec. 9]. The façade of the school allowing the admission of light to the class-rooms should have a north-easterly orientation. Any orientation, in fact, between east and north, will be, on the whole, satisfactory in New South Wales.

The school-building should consist of a long row of schoolrooms, with wings containing a single class-room at each end, and perhaps a third one in the centre. Attention is drawn to Chapter XLVII, secs. 10 and 15, and to the illustrations in the chapter generally.

The question of the best material to be used in construction is referred to in Sec. 11, and of the dimensions in sec. 12.

5. *Floor-space*—The regulation floor-space per pupil of New South Wales is just about half of what, according to modern ideas, it ought to be. In a country like ours, subject to considerable heat in summer, probably rooms allowing 16 square feet per pupil, instead of 8 square feet, are needed [secs. 6 and 12]. The best colour of the walls is, perhaps, pale green; almost any pale tint, however, is agreeable. Pale grey has been strongly recommended by M. Dufour, of Lausanne.

The *vestiaries* in Europe are either recesses off the wide corridors, or are special rooms, neatly furnished. Often each hat or cloak peg is numbered, and each child has a definite number.

6. *Lighting.*—The question of the proper direction for the light has also been thoroughly studied in Europe; it should come from the left, and where the quantity so received is insufficient, a little high rear light might also be allowed. It must not be in the teacher's eyes, nor the pupil's. The question is thoroughly discussed in Chapter XLVII, secs. 14 and 15. The windows are carried as near as possible to the ceiling, so that the angle of the rays of light will be about 35° from the horizontal, the Swiss practice being to allow from 4 to 12 inches from the ceiling to the top of window. Semi-circular and Gothic tops are interdicted in Switzerland. Without doubt the rectangular form for windows is by far the best.

The complete abandonment of the long subdivided class-room of the New South Wales school, is absolutely necessary to obtain a proper system of natural lighting, and is most important if the welfare of the children is to be considered.

In regard to artificial lighting, it may be pointed out that gas flames are avoided if possible. The incandescent electric light is hygienically the best. In some schools seen the light was indirect, being reflected from a white ceiling, though the lights themselves were invisible.

7. *Ventilation.*—Children in the schools of this State are often very drowsy in summer. This arises from the diminution of oxygen through imperfect ventilation and the presence of anthropotoxines. Sitting as he is compelled to do in uncomfortable and improperly formed seats, often without back support, and

drowsy

drowsy from impure air, the school pupil is in an unsatisfactory condition for receiving instruction. In Europe and America it is recognised that good pædagogy requires attention to these matters. In winter, in colder parts of the State, the child is uncomfortable from the cold. We have no schools in the State fitted out with proper heating apparatus. This matter is referred to hereunder.

The cubic space allowed for each pupil should be about 200 cubic feet—*i.e.*, nearly double what is demanded in our Regulations. The purity of the air is a matter of considerable importance from the point of view of physical culture. The consequences of the impurity depends upon the presence of an organic poison, viz., the anthropotoxines of expired air. This may be approximately measured from the quantity of carbon-dioxide found, for it is generally sensibly in proportion to this. The rate of vitiation of air is discussed in Chapter XLVII, sec. 16. The scheme of summer and winter ventilation is discussed in the last-named section, and in sec. 17.

8. *Heating Apparatus.*—The simplest form of heating, by which means also ventilation is secured, is by a special form of stove, an illustration of which is given in the last-mentioned section. Open fires and cast-iron heating-stoves are absolutely interdicted in Switzerland. In the Swiss stoves the heated air is given with a proper degree of humidity. These stoves, however, shewn in an illustration, are used only in the inferior country schools. Special heating furnaces and ventilating apparatus are installed in all the larger schools. The supply of heated air is often controlled by thermostatic contrivances so as to maintain automatically a constant temperature.

9. *Lavatories, etc.*—The hygienic arrangements in respect of lavatories and latrines in this State are inferior to anything seen in modern schools elsewhere. The matter has been fully discussed in Chap. XLVII, sec. 18. The arrangement of cabinets in some of the schools of the State admits of no proper privacy for the children using them. This is inconsistent with a normal sense of decency; and since the depression of this sense is a positive moral injury, the existing arrangements ought not to be repeated, but, on the contrary, remedied as soon as possible.

Shower-baths are a feature of the great many modern schools in Europe, the water being heated to an agreeable temperature. Italy is following this example. A recently built elementary school seen in Turin was splendidly fitted in this respect. We have at the present time no school in our State comparable to this elementary Italian school.

In fewer schools, large bathing-tanks are to be found in which swimming can be indulged; these also are supplied with water at an agreeable temperature.

10. *Courtyards and Gardens.*—The space demanded for courts or play-grounds is about 85 square feet per pupil. For kindergartens, school-gardens are required, and it is desirable that they should exist in every school. They afford opportunities for nature-study, and for scientific instruction. Shade-trees, so little used, ought to be regarded as a necessity. The plane-tree (*Platanus orientalis*), with an upright stem of about 10 feet, with branches trained so as to form a horizontal stratum of foliage, constitutes a perfect shade in the summer months, while in the winter, when its leaves are shed, it allows full play of sunlight. The covering of a sufficient part of every play-ground so as to allow of recreation in the wet weather is desirable. The matter is fully referred to in Chapter XLVII, sec. 22.

10A. *Continental Schools.*—Examples of the form of Continental schools are given in this chapter (see secs. 24 to 31.) Sec. 29 gives an illustration of a Swiss school kitchen for the teaching of this branch of domestic economy.

11. *School Furniture.*—The question of the proper character of school furniture, and of its hygienic importance, is discussed in Chapter XLVIII. The method of seating children in this State, and the form of desk, are in serious conflict with good hygiene. We have sometimes cedar desks and forms—though cheaper material would be better—but they answer to no single requirement of school hygiene. The history and theory of school seating is discussed in Chapter XLVIII, sec. 3. The seats should properly support the back, the desk should be of the right height according to the size of the child, and the distance of the seat from the desk should be properly determined. The injuriousness of bad school furniture was pointed out by Henry Barnard as early as 1841, and by Dr. Fahrner of Zürich in 1863.

Systematically

Systematically considered, school-desks ought, as far as pædagogy is concerned, to answer the following requirements :—

(1) They should be so arranged as to allow each child to take his place without disturbing other children.
(2) Their manipulation and alteration ought to be noiseless, and without danger to the child's fingers, etc.
(3) They should be provided with places for books, note-books, ink, pencils, etc.
(4) They ought to admit of easy supervision by the master.

From the hygienic point of view, the conditions to be satisfied are :—

(5) They ought to enable the pupil, during writing, drawing, etc., or during rest, to take up a position which is normal as regards his vertebral column, and as regards the distance of the eye from the paper.
(6) They ought to be proportioned to suit the bodies of the children that occupy them.
(7) They ought to be made without sharp edges, or points which could wound the child.

From the standpoint of convenience, etc., they ought to be :—

(8) Light, movable, so as to admit of easy shifting from place to place, and so as to facilitate sweeping and cleaning.
(9) They ought to be simple, firm, compact, cheap.

The anatomical reasons for having adjustable desks are set out in detail in the section mentioned. In brief, it may be said that there is unquestionable evidence that bad seating means injury to child development, and is responsible for increase of spinal curvature as well as myopia.

In other parts of the world, account is taken of the influence of school conditions upon the children attending, and this has shewn what might have been anticipated, viz., that bad physical conditions during school hours mean injury to the human frame, since these conditions are imposed upon it when it is most plastic.

The various dimensions for a proper school seat and desk are discussed in Chapter XLVIII, secs. 5 to 18. The type of seating found even in our most recent schools would not be regarded as satisfactory by educational authorities in other parts of the world visited by the Commissioners.

12. *School Material.*—Large sheets of ground glass, backed by black, are substituted for blackboards. These are certainly much more agreeable to work upon. Slates are rapidly disappearing as unhygienic, paper being used in their place. It is customary for each school to have a small dispensary, and material for "first aid." An outline of the material provided in Switzerland is indicated in sec. 22.

Incidentally it may be mentioned that, in a large number of schools, not only are no fees paid, but even the school material, pencils, text-books, paper, etc., are also provided gratis for all pupils.

13. *Hygiene in Relation to the School Pupil.*—Defective vision is far more common with children than is generally supposed ; so also is defective hearing;—and the investigations of countries where these matters are systematically examined have shown that the subject demands attention. There is no doubt that punishment has often been inflicted upon children whose failures to profit by the lessons were mainly due to these defects. [Chap. XLIX, sec. 2]. In European schools the distance at which each child can see and hear is always ascertained, and his position in the class-room is determined thereby. [secs. 3 and 4]. Where lighting in the school is not good, it is found that myopia is more frequent and more severe than in well-lighted schools [sec. 2]. Deviations in the vertebral column are by no means of rare occurrence, and Dr. Lorenz, of Vienna, has drawn attention to the extreme importance of school authorities being alive to the reality of the danger of bad conditions in school-life. His remarks shew clearly that in his opinion school statistics should be systematically taken with a view to criticising the hygiene of the condition of children during their school-life.

In places where there are no proper school-statistics, there is unfortunately an easy-going but erroneous assumption that these evils do not exist.

Anæmia is too often in evidence, and is conspicuous in this State. The breathing of air, in which an excessive quantity of carbon-dioxide is present, with the accompanying anthropotoxines expired by the pupil, accentuates the mischief [sec. 6].

Dental diseases are on the increase in this State as elsewhere [sec. 7]. There is a growing recognition of the necessity of paying attention to the incipience of nervous disease which is by no means rare. The matter is discussed in sec. 8. Infectious, contagious, parasitic diseases are referred to in secs. 9 to 11.

14. *Disinfection and Prophylaxis.*—In America, and also in Europe, the disinfection of schools and other prophylactic measures are very thoroughly carried out [secs. 12, 13]. In some of the Swiss schools it is required that the building be so constructed that the walls may be thoroughly washed. The flooring, being parquetry, does not allow of dust lying between the cracks, and they are kept in perfect order. Vapourised solid formalin, corrosive sublimate solution, solution of cresol and soap, and milk of lime are used as disinfectants, and in Switzerland schools are thoroughly renovated yearly at least. One cannot enter an average European school without instantly recognising how superior the hygiene is to our own.

In America, though the immigrants belong often to the inferior classes, a special effort is made to at once create in the children a high regard for cleanliness. They are thoroughly bathed by a special attendant, and acquire rigorous habits of bodily cleanliness. The American doctrine is that, whatever their nationality, they must, on arriving in the United States, be transformed into American citizens as quickly as possible.

15. *Position at Work.*—The position of children during their school-work is a matter which has been seriously studied in Europe. It has been found that the effect of sloping writing on very young children is to increase myopia and spinal curvature, owing to the position assumed by children during their writing, and that the best position is that in which the book is exactly in front of the child. If the book be parallel to the desk this involves upright writing. In the opinion of one of the Commissioners (Mr. J. W. Turner), the downstrokes should be about one-eighth of a right angle from the vertical. In the opinion of the other (Mr. G. H. Knibbs), the writing should be absolutely vertical, and sloping writing should not be learnt until the body is fairly well developed—certainly not before 12 or 13 years of age [sect. 16].

16. *Physical and Mental Fatigue.*—The investigation of the question of fatigue has proved that both physical exercises and mental tasks involve the generation in the body of an organic poison, which produces some paralysis of the muscular system. This has been established by means of the æsthesiometer, ergograph, etc., and shews that the heaviest work should be performed in the morning, and the lighter in the afternoon. Gymnastic exercises are not recreative in the ordinary sense, and if severe, may even be as taxing as mathematical subjects which are among those that produce the greatest fatigue. There is a very hopeful and rapidly increasing recognition of the necessity for teachers understanding the evidences of fatigue and of nervous troubles generally. These shew themselves by disturbance of balance, twitching of hands and face, restless eye movements, peculiar postures of head and hands, excitability, irritability, inattention, etc.

The amount of *home-work* with which children are charged ought to be made to depend very largely upon the individual characteristics—*i.e.*, in fact upon their ability to get through the task without injury.

17. *General.*—It is very desirable, not only that there should be a thorough review of the state of hygiene in all the schools of the State, but also that new schools should be built consistently with the requirements indicated in the three chapters, XLVII-XLIX. Such statistical hygienic examinations of the scholars as will ensure an intelligent criticism of their condition during school-life should be made, and physicians with a special knowledge of school-hygiene should be officially associated with schools. Probably *female physicians would be the best* for this purpose, in view of their natural sympathy with children.

VII.

SCHEME OF REFORM.

[G. H. KNIBBS.]

1. *Generalities concerning the Reform of Education.*—According to what has been indicated, a *radical reform of the whole scheme of primary education* in New South Wales is urgently needed.

This reform must include—

(*a*) The subject-matter of instruction.
(*b*) The organisation of the teaching, or system under which the instruction is given.
(*c*) The machinery of administration.
(*d*) The statutes which prescribe the general conditions governing public education.

These may be referred to in this order; but it is desirable first of all to give, in brief outline, the whole scheme, so that, after taking it in detail, the way in which each part falls into its place will be made clear.

2. *Theoretical principles of Reform.*—In any reform whatever, and perhaps especially in the reform of a great Department like that of the Public Instruction, it is essential that the existing system, organisation, and administration, shall be taken practically as it stands, and that *in bringing about necessary changes so as to completely transform the educational elements of the system, there should be the least possible disturbance, insofar as the continuity of public education is concerned,* which of course is the sole *raison d'être* of the whole system. Further, although the changes in the administration and organisation should be a minimum, the reform should nevertheless begin at once and proceed steadily to its end, being so designed that any unpleasant features of its incidence will be felt as little as possible. In other words, the changes should be made uniformly and as rapidly as possible, so as to steadily improve the educational efficiency.

The essential elements of reform are only two, viz.:—

(1) *Merely mechanical changes,* such as rearrangement of teaching system, or introduction of new material or new methods.
(2) *Changes in the spirit of education,* and in the spirit of its administration.

The first element is of undoubted importance, and there is a great deal to be done, for the educational machinery of our State does not satisfactorily attain the end for which all educational machinery exists.

It is, however, the second element that is by far the more important; and, owing to the lines on which education has for so long proceeded, nothing short of a thorough revivification and transformation of the leading ideas will be adequate. *An administration which has espoused the pupil-teacher system has elements which imply the necessity for radical change.*

3. *No real difficulty in reform.*—There is no inherent difficulty in bringing about such a reform, provided of course that those who are to be the instruments, animated by feelings of loyalty to the good of the people of the State, lend their best efforts to its execution. It need not be anticipated that there will be any serious difficulty, for doubtless there are *large numbers of zealous and devoted teachers who are willing to render the greatest assistance,* and who will make the necessary personal sacrifices *to put the education of the people upon a sound foundation.* And should strenuous opposition present itself, there are obvious ways of dealing with it.

Naturally, it must take some little time to eliminate the present view as to what consitutes a proper method of education, and to replace it by the traditions that obtain in those countries where the school-systems rest upon a better basis than with us.

Although the system now adopted, must as said be radically departed from, especially *in the direction of giving greater freedom of initiative to every teacher,* and of calling upon him to make himself acquainted with modern educational methods,

methods, it will not be found a hardship. Teaching, which operates upon the spirit of the child, which secures his hearty co-operation, which invokes his own mental effort, not by fear, but affection, completely alters the nature of a teacher's task for the better, and makes it more agreeable. Loyalty to the great cause which they have been called upon to serve will enable all teachers to do the best they can for their pupils, and a new *régime* will not be found difficult. Under this *régime the Inspector would be the inspirer and adviser of the teacher.* His visit, even in the case of a teacher of inferior mental endowment, could be looked forward to with pleasure as an opportunity for improvement. The exacting inspectorial examinations, educationally without value, would disappear. Instead of being the inquisitorial critic of the teacher, the Inspector would be the friend and helper.

Judging by experience in other parts of the world, and remembering that *no man can educate children without an inspiration of the significance of his work*, the abandonment of a mechanical system will not lead to a dereliction of duty to an extent which may be viewed as serious, and as liable to jeopardise the reform; it does not do so elsewhere, and it need not do so here, for where men are highly trusted, they will, on the whole, react to the faith put in them. The teacher who proved that he could not be trusted would have to be subjected to suitable discipline, or removed.

Just in so far as it is alleged that the teacher cannot be trusted in the way indicated, so must it be regarded as trenchant criticism upon the *régime* which creates and appoints him. The present inspectorial examining system is of value to *drive* teachers who cannot be trusted; but for properly trained teachers, who understand, or endeavour to understand, the why and wherefore of their effort, it is waste of time: it irritates; it fails to inspire by appeals to the nobler idea of duty and of the high character of the teacher's work, and it fails to estimate their work from a right basis.

Every *real* teacher will hail the day when he is free to work according to a general plan and curriculum, but within these limits on his own lines; he will have fresh inspiration in his work.

4. *The present System of Education.*—In the initiation of our present educational system, certain educational traditions derived from the United Kingdom, which even then did not represent the best knowledge on the subject, and which are now wholly outgrown, dominated the fundamental conceptions of its initiators. *The excellence imputed to them is mythical.* The defect was hardly their fault; it is one of those national limitations which the intensity of modern English educational effort is endeavouring to overcome, and which is, as a matter of fact, rapidly being overcome.

The inspiration of a *new view of their duty*, when the drudgery of preparation for inspections of schools will be no more, when there will be leisure to read the proper educational literature, when each Inspector will be expected to *inspire, encourage, and advise the teachers under him*, helping them to feel something of the new spirit, something of the sacredness of their work, will help to completely transform the spirit of educational effort. The office of the inspectorial staff will pass from a bondage to mechanical things to a far nobler sphere. The work of infusing the spirit of earnestness into teachers, of helping them to understand and use better teaching methods, not by the driving fear of bad reports, but the encouragement of large and sympathetic hearts and good advice, is the only way of producing such a transformation; for *the teacher's work will never be good while it is mechanical.*

True education of the people, education of the mind and heart, can only be achieved through a teaching-staff animated by a recognition of the real character of the work they are doing. It is in this connection that the *importance of directing the whole system by sympathy and culture, instead of placing a reliance upon mechanical elements, is seen.* A change from one mechanical system to another mechanical system is not sufficient. In this connection, too, is seen the immense significance of touch with the world's progress in educational effort and educational theory.[1]

5. *Conditions of maintaining touch with world-progress.*—To keep abreast of the world's progress in *any* department, it is important that high public officers should have adequate time for that private study, and that deliberate and mature reflection,

[1] Had adequate touch with the world-wide progress of educational thought been maintained, such declarations as were made in the 1902 conference would have been impossible, and the pupil-teacher system would probably have long ago disappeared.

reflection, *which is not only absolutely essential for the best discharge of their public duties, but is also most economical.* This opportunity of quiet study and reflection ought to be a characteristic feature of our Public Service system; for when the time of chief officers of important departments is consumed in detailed administrative duties, the best results cannot be achieved. In many other countries visited by the Commissioners, it seemed to be more clearly recognised that it is an important duty to guard against limitation of knowledge by appropriate reading and study—a condition of things which certainly helps high public officers in the discharge of the higher elements of their public duties. At present we are tempted to blame them unreservedly for short-comings which, under our present system, are inevitable. The matter is so momentous that some slight further reference may be made thereto.

6. *Method of Securing the Highest Efficiency.*—When the chief administrator of any great department merely directs the operations of his subordinates, and attends to only its weightiest affairs, and outside the relatively small amount of time so devoted is absolutely free to occupy himself with those much higher matters which, in the public interest, ought to engage his attention, the requisite condition for his continued development is secured. Not only must he be a specialist in his own proper branches of knowledge, but he must in addition be in touch with the collateral elements of human progress. This is why leisure for study and research, by which alone he can call into requisition his highest powers, viz., those powers the full exercise of which the State has a right to expect, and which enable him to review local matters in the light of world-wide experience, is so essential.

Chiefs of administration and their understudies, who keep in touch with all important progress in their special sphere, and in cognate subjects, have that purview and advantage which come from a large mental horizon. Failure to maintain a wide survey is failure to maintain the most important qualification for high office, and to spend one's whole time in mere administrative duties is not only extremely unwise, but is also a waste of talent. This is more clearly perceived in Europe and America than here.

7. *Economy of Securing Leisure for Chiefs of Administration.*—When the activities of the Public Service are characterised by those broad traditions which express the experience of the great centres of civilisation, the normal results which are attainable through the mental endowment of the higher public officers are more likely to be reached. In this way large public economies, depending upon a wide horizon, and consequent clear-sightedness into the trend of things, are better ensured, and the higher efficiency of a service promoted.

It ought, therefore, to be practically recognised that wide culture and intimate contact with modern development in any subject imperatively demand some leisure, and that responsible officers of public departments and their chief understudies can better discharge their public duties when they have the fullest opportunity of equipping themselves in every necessary way. An administrator cannot possibly maintain the truest efficiency if he devote himself wholly to mere routine duties, for this will operate against his culture and outlook, and prevent him keeping in touch with his special department and cognate matters.

Here one may see where the need for the highest element of the reform lies, viz., in assisting the direction of the administration of a great department like education—a department which demands something vastly higher than merely mechanical efficiencies to achieve its destiny.

The lower elements of reform lie in the carrying out of certain definite suggestions for improvement which may now be referred to.

8. *Subject Matter of School-programmes.*—It is necessary to prepare typical programmes for each class of school as a guide for the effort of the teachers. This should indicate the essential features of the subjects, and afford hints as to their treatment. Inspectors, by sympathy and advice, should *encourage* the teachers in their effort to follow modern methods of teaching. Driving, and the tyranny of overbearing opinion, will fail to reach the desired end. The type-programme ought to be developed in considerable detail, in view of the fact that it is proposed to wholly reform the teaching. The principles followed should be those outlined or suggested in Division IV.

9. *The Organisation of Teaching.*—The proper training of teachers, though a serious difficulty, is not insuperable. It is a difficulty, because time has to elapse to pass from the present *régime* to one which will allow of the proper training of the teachers and of their better education. Special inducements may have to be offered during the period of transition. The scheme of training is sufficiently indicated in Division V.

10. *The machinery of Administration.*—In the machinery of administration the *rôle* of the Inspector in the bringing about of reform must be totally different from that at present existing. The present system of examining by Inspectors may be abandoned as useless, and as a waste of their time and opportunity. Their whole effort would have to be directed to getting the teachers to understand the new *régime*, and to reform the views of the latter as to the aims and processes of education.

11. *School hygiene.*—The Inspectors could also greatly help in the matter of hygiene and in securing interest in schools. It has to be remembered that the public itself has to be educated to understand the reform, and if Inspectors would undertake to give public addresses in country towns on "Education in other Countries," suitably illustrated by lantern views, sufficient interest would soon be created, and it would probably not be difficult to induce the various communities to assist the local schools. There is certainly the necessary public spirit in the community if the appeal thereto be rightly made, if not, then the State would indeed be in a bad way.

12. *The Public Instruction Act.*—The only important amendment needed is that to compel attendance at school. This has been dealt with in Chapters XLIII and XLVI, by one of the Commissioners (J. W. Turner). The other Commissioner (G. H. Knibbs) has not completed his study of the question of Truant and Reformatory Schools, especially of the latter, which involves a wide review of recent studies of the anti-social and criminal tendencies of human beings.

The necessary changes that should be made in the regulations in connection with any change in the *régime* do here not demand special attention. *The public school system ought to be improved before compulsion is rigorously enforced.*

13. *Personal elements in Reform.*—To bring about real reform it will be necessary to ask the whole staff of the Department to earnestly assist by putting forth a special effort till progress is assured, and it is believed by the Commissioners that if each teacher and officer of the Department will reflect upon the real significance of education to the people of New South Wales, and to the Empire of which it forms part, there is zeal and loyalty sufficient to practically overcome the great difficulties in the way.

14. *Direction of Education.*—Under any scheme of Government the political policy and general aim of a Department of Public Instruction must necessarily devolve upon a Minister acting under the authority of Parliament. Education is, however, so special a subject that no Minister would claim to be an expert therein, and, therefore, a comprehensive educational scheme for any State needs to be shaped as regards its general technique and details by a well-directed and far-sighted policy of development. This must proceed from some individual having a commanding knowledge of modern education, and of modern educational method. In the nature of things a Minister cannot devote sufficient time to become an educational expert of the highest order himself, nor is that his appropriate function, either here or elsewhere, so that although the Minister must ever control the great questions of departmental policy which represent the decisions of the State as regards the whole issue, the realisation of the educational system requires that the chief administrator shall be really *Director of Education.* The direction must necessarily aim at the perpetual embodiment of such advances and improvement of method as the total experience of mankind shews to be necessary, and must be that of an expert who thoroughly understands the educational systems of the world, and the special needs of our own territory. *An educational system cannot be a patchwork production, it must have organic unity* if we are ever to have education equal to that of the greater countries of Europe.

15. *The Drift of Education.*—Since reform must perforce follow the trend of modern educational improvement, an attempt has been made in Chapter LVII to give an aperçu thereof, which should be read in connection with the scheme of reform. It may be remarked that to-day interest in education is widespread, and is probably more intense than at any previous period in the world's history, and naturally the generality of effort to improve education by focussing experience, and by obtaining free and thorough criticism, is a conspicuous feature almost in any part of the world. It is extremely important to guard against the developing of a departmental *régime* such as will tend to induce teachers merely to re-echo as a matter of policy the opinion of the official administration [Chap. LVII, sec. 2]. Hence as long as it is done properly, teachers ought to have great freedom to express their opinions, and should be encouraged so to do.

A wider recognition of the real end of education, of the function of one's mother tongue, of the relation between classical languages and sciences, is leading to a truer view of what constitutes real education [secs. 3–5], and *mere pedantry is approaching its doom.* The distinction between formative and informative elements of real education is becoming better understood [sec. 6], and the essential parts of educative manual training, as an integral element of a normal education, is better appreciated.

The primary school cannot be allowed to degrade into a number of divisions of trade schools, nevertheless the wisdom of a practical orientation of the education is fully recognised by great educationists. Such practical orientation, if dealt with by intelligent and properly educated teachers, will, *instead of being less educative, be vastly more so than the present system* [sec. 8].

The necessity of securing a high development of individuality and self-expression, of eliminating the brutality of *corporal punishment* (which is still in vogue in this State, and is used to compel children to learn their school tasks!), of inspiring the will so that it shall direct the mental and physical activity, and of helping the normal development of the human being by adequate attention to physical culture, are features of modern education, the import of which is as wide as is their spread over the world [secs. 8–11]. Thus one may see at a glance *how unequivocal is the demand for the better training of teachers*, and, at the same time, what need there is for the development of typical programmes for different classes of schools as a *guide*, but not an overpowering direction to the heads of various schools.

16. *Recent criticism of our Educational System.*—The educational system of this State has, as is well known, been subjected for several years past to strong criticism, which, undoubtedly, has been as strongly resented. It is well in such cases to get away if possible from the heat of local feeling, and it is an additional advantage, when it is possible, to obtain a criticism directed not solely to the question of education, but to that question as one feature only of national characteristics or development. In January this year appeared a masterly criticism of the Australian nation, published under the title, "The New Nation," by Percy F. Rowland, London (Smith, Elder & Co.), 1903. The following quotations are worthy of our thoughtful attention:—

" . . But perhaps most hope of all, in the acceptance, albeit tardy, of kindergarten principles in the schools. For it is in their earliest years that men and women are most susceptible to colour and form. Children have hitherto in Australia been brought up for the most part among influences of abnormal ugliness, most Australian schools being considerably more repellant in appearance than Australian gaols p. 167. . . . . .

The key for national progress in music, as in all else, lies in the nation's schools. And there are signs in Australia of a wise and efficient discontent with the mechanical school system at present in vogue, and of a growing determination to substitute the methods of Pestalozzi and Common Sense for those of Tape and Drill (late Squeers), pp. 173–4. . . . . .

The majority pass from scholar to pupil-teacher, and from pupil-teacher to teacher, without receiving any training, or, in fact, any education worthy of the name, p. 234. . . . . .

We realise that, as in England, the large schools are enormously understaffed, and that classes of over seventy are by no means uncommon, often under the charge of a mere child.

What hope of individual attention, what hope of the personal knowledge that is the soul of teaching, under this barrack system? Can we expect any real knowledge, except of drill and of mechanical arithmetic, of unintelligent reading and unintelligible writing? The ablest and best of teachers may well be rendered hopeless by the impossibility of their task.

Any

Any efficient system of public instruction would involve halving the size of the classes, and doubling the remuneration of teachers. As this means a quadrupled expenditure,' and as the expenditure is already as high as public opinion in Australia thinks fit, it is clear we are as far from efficient primary education in Australia as we are in England, pp. 235–236.

But that Australia has done so much is the very reason for hoping that she will do much more. All is now ready for education. How long before the education will begin?

It is primarily a matter of cost. To say that Australia cannot afford it is absurd. Cannot afford to make the most profitable of all investments! Rather she cannot afford not to! It is only by improved education that the British dominions can hope to hold their own in the markets of the world. Mr. Sidney Webb has reminded England that it is in the class-rooms of her primary schools that the battles of the Empire for commercial prosperity are being already lost. The

The saying is no whit less true of Australia, which, worthy of all praise as have been her efforts to secure primary education for her far-scattered children, has now to face the harder task of rendering that education efficient, not here and there in favoured districts, but throughout the Commonwealth.

There are not wanting signs that Australians are beginning to be conscious of the need for improvement in their much-vaunted education system. The Victorian education reports are rich in good suggestions, some of which are already bearing fruit. Thus a trained kindergarten mistress has been brought out from England to Melbourne, where she is to teach, to lecture, and gradually gather round her a competent staff, with a view to revolutionising Victorian infant education by kindergarten methods.

Western Australia has departed from the calamitous custom of appointing as Inspectors only those who have passed through the sterilising routine—pupil-teacher, assistant teacher, head teacher, Inspector—and has appointed Mr. Cyril Jackson, of Toynbee Hall, as Chief Inspector of her schools. Mr. Jackson has had a free hand, and the colony is already enjoying the results. In four years the number of children attending the public schools has doubled. Instead of making the promotion of pupils depend entirely on their examination by Inspectors, Mr. Jackson allows teachers who have received good reports in the previous year to conduct examinations for promotion themselves. Realising that the wretched rate of pay obtaining in the teaching profession is a chief cause of the difficulty in securing able men for teachers, Mr. Jackson has already succeeded in raising the average salary of head teachers and assistants from £121 7s. 4d. to £131 18s. 9d., and this he looks on as only the beginning of a general levelling-up of salaries and attainments Highly-paid labour, our economists tell us, is not, as a rule, dear labour, because of its greater efficiency. And if there is any one matter more than another in which a country cannot afford cheap and inefficient labour, it is surely in the education of her future citizens.

But Victoria and West Australia are not alone in their desires for reform. Even New South Wales, in some respects the most lethargic of the States, is beginning to bestir herself; and the present Minister for Education promises several important reforms. It need not be doubted that if Australians suffer themselves to be convinced that the public school system should be rendered efficient, the State Parliaments will raise no objection, while the *Inspectors and the teachers will hail the breaking of fetters which have so long restrained them from realising the possibilities of their high vocation.*[2]

Those who have learned to respect Australians for their common sense and business aptitudes will not despair of seeing, in the immediate future, *a drastic reform of the public primary education of the Commonwealth.*[1]" pp. 237–240.

Comment on the value of candid criticism is unnecessary; and the condition of profiting thereby is the open mind which sees no ground for resentment in the call of progress. The Commissioners feel that, *unless the community acutely realises the very serious defects of our present system of education, and the relatively low place that we really take in the world's educational effort, we are not likely to make that necessary sacrifice through which alone reasonable progress is possible.* The statement that we have one of the best systems in the world is, unfortunately, very far from the truth; in most respects the converse is the fact. If it be true that education underlies the possibility of sound national development, this fact is ominous, and it will be well for us to boldly face the issue.

The Commissioners recognise also that, unless they openly declare their opinion as to the serious nature of the defects of our system, they will not have discharged the responsible duty assigned to them.

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[1] This estimate is excessive, as may be readily seen.

[2] The *italics* are not in the original.

VIII.

GENERAL MATTERS NOT PREVIOUSLY REFERRED TO.

[G. H. KNIBBS.]

1. *Special Schools.*—If this State is to keep in touch with the progress of Europe and America, more attention must be paid to special schools, viz., those for the abnormal. These cannot be left to take their chance in the ordinary school. The feeble-minded, the deaf and dumb, and the blind, require schools where the effort is specially adapted to their condition. Those of unsocial and criminal tendency need special treatment in reform schools.

All over Europe increasing attention is being paid to the education of those weak in intellect, the deaf, dumb, and blind, and children of criminal tendencies, and the results are very gratifying.

2. *Schools for the Feeble-minded.*—The question of the education of the feeble-minded is outlined in Chapter XLI. Probably about 1 per cent. of children are subject to so considerable an arrest of mental development that they cannot with profit attend the ordinary school. The manner of dealing with these has been exhaustively considered in Europe. It has been found necessary in order to secure good results to aggregate these in small special schools, the individual classes of which are also small. The head of such a school is always a man of special qualifications, it having been found from experience that the education of feeble-minded children must be directed by a teacher who is, in a special sense, a psychologist.

The decision as to the proper children to enter a special school is best left to these, viz., to teachers who are specialists in the psychology of treating imbecile children. The decision is never left to the ordinary physician, but in some cases the advice of a medical expert in mental cases is sought.

The transfer to the special school is rarely made until 8 years of age, it being deemed desirable that the stimuli of the ordinary primary school should be applied till at least that age, in case normal mental growth shall be spontaneously re-established.

Experience has shewn that *special education* can develope feeble-minded children into useful citizens, quite capable of earning their own living, and even of discharging certain kinds of tasks with great excellence. The custom in Germany is to have one special school for every town of 15,000 inhabitants, from 0·1 to 0·2 per cent. of the *total* population needing this special instruction.

The scheme of the German special school (Hilfsschule) has been outlined in the Report. [Chap. XLI, sec. 6]. For each child who enters it a complete record is made [sec. 7], shewing his whole history, these records being kept in like cases throughout the Continent of Europe. They are most valuable for the purpose of forming opinions as to the success of the method in general or of any particular feature of treatment.

The children are kept in the special school until after they have passed the critical age of youth, inasmuch as idiots may at such a period become, temporarily or permanently, purely animal in their instincts, imbeciles violent, and the feeble-minded morally uncertain. [sec. 2].

Morally perverse children, epileptics, and *hopeless* idiots are not associated with the imbecile or mentally feeble. The morally defective, who betray themselves by intense egoism, by mischief, spite, perverted animal tastes, perverted affection, etc., have to be dealt with quite separately, and not be allowed in the ordinary special school on account of their injurious influence.

To form a correct judgment one has to be extremely careful in regard to estimating the measure of capacity of the intellect, or the true value of the powers of backward children. Mere ability to read and write is not considered a proper basis of estimation.

Much of the success in training these backward children depends upon the use of the intuitive methods and upon the educative value of manual training. The feeble-minded often become excellent workmen and workwomen, and the consciousness of their utility to the world and of their ability to take a place in its normal economy developes their self-respect, which is a matter of importance.

Even should we be disposed to repudiate our human duty to the unfortunate feeble-minded, there is no doubt that to qualify them for the duties of life by means of these special schools is a distinct economic advantage. It is desirable, therefore, from every point of view, that special schools should be established in New South Wales on the lines of the Swiss and German schools, the classes being limited, say, to ten pupils, and the teachers selected from those who, in addition to a proper knowledge of the psychology of the abnormal, feel disposed to truly devote themselves to their special study. Such teachers ought to have a somewhat higher status than the ordinary teacher, since they require higher qualifications.

3. *Schools for the Deaf and Dumb.*—These schools are discussed in Chapter XLII. The modern method of instruction, now fairly wide-spread, depends upon teaching the deaf and dumb children what is sometimes called lip-reading; that is to say, the child learns language from the motion of the lips in ordinary speaking. They themselves also learn to speak, notwithstanding the fact that they can never hear. America, France, Germany, Holland, Hungary, Switzerland, and probably many other countries, are undertaking this class of instruction *very thoroughly*, the teachers, in addition to the ordinary qualifications, being specially trained to give instruction in such schools. It is very desirable that this State should follow in these modern methods.

Apart altogether from the humanity of this special education, which ought to constitute a sufficient appeal, the education is justifiable on economic grounds.

4. *General as regards backward children.*—Backward children under the New South Wales system are apt to receive much unkind treatment. Under the scheme of examination by inspectors they are a danger to the teacher, and, as previously explained, he is liable to be injured by their failures to progress at the rate regarded as normal.

One can hear from teachers anywhere that the learning of subjects disliked by the children is secured by the solicitation of corporal punishment. This moral wrong to childhood ought to disappear. In the majority of instances the fault lies with the system, not with the child, and the cruelty and moral insolence of inflicting pain on children is on a par with the pupil-teacher system. As a *punishment* implying disgrace it is, unfortunately, necessary to retain it, but as a provocative to attention and to mental effort it is unworthy of any educational system.

Backward children need encouragement, and perhaps more or less special teaching. Throughout the world it is coming to be recognised that inaptitude in particular directions is not by any means the serious evil supposed by the antiquated mechanical systems of education, and *more and more is it realised that intelligent education is not cast in a single mould, but is adaptable to the natural diversity of the human being, and to the infinite variety of his endowment.*

The mechanical system tries to secure uniformity, and to obtain evidence of success in that effort it employs its inspectorial staff, instead of making that staff the teachers' powerful ally. School-work under such a system consists of *tasks* properly so-called, and the gladness of learning and the interest of knowing are supplanted by perfunctory accomplishment of its tasks under the spur of fear.

It cannot too soon be realised that *uniformity of result is not an aim of education.* The child, with his natural endowments and natural tendencies, is to be made the most of for the purposes of life, and it is a matter of no concern whatever to the teacher in what special direction his powers can be developed. The aim of education is to make the most of each child as he stands, not to mould him in conformity to some stereotyped ideal. True education does not thwart the variety of human tendency or the diversity of human accomplishment; in one respect only does it desire uniformity in the human race—that is, in the matter of good-will. While no educationist will too lightly yield to the natural aversion of children to particular subjects, he will nevertheless see to it that a child will not be distressed by attempting subjects in which he cannot possibly succeed.

5. *Other subjects.*—There are many other subjects of importance to deal with, as, for example, the relation of the school to the military system of the territory, the question of the cadet system, the higher activities of school-teachers, school-inspectors, etc. In this last connection it will suffice to mention that the European and American practice of appointing directors to the larger schools, who are required merely to supervise, or, at the most, to do a small minimum of teaching, is one that secures considerable advantages, since the directors are generally men of special culture, and, in virtue thereof, are able favourably to influence the teachers under their control. This work of helping the ordinary teacher to achieve his task, and to maintain the higher view of his vocation, is of an importance hard to be over-estimated.

IX.

RECOMMENDATIONS.

1. *Introduction.*—The following recommendations are based upon the several assumptions hereunder mentioned, viz. :—

(*a*) That the educational system of New South Wales should aim at becoming at least the equal of the best systems in other parts of the world.

(*b*) That to attain to equality with either European or American education the whole spirit and method of the existing system of primary education must be transformed in respect of

(i) The professional education and training of teachers, and
(ii) The development of the curriculum.

(*c*) That merely mechanical changes in the machinery of the Department, or *mere changes in the curricula or additions of new features thereto* in themselves will not suffice.

(*d*) That the chief activity of the inspectors and other officers of the Department, especially in the immediate future, will have to be mainly educative, with a view to bringing the existing teaching-staff into touch with the spirit of modern education.

(*e*) That in departing from the present régime the change should operate steadily and continuously until a new system is fully developed.

It may be added that change in the teaching method, and in the whole scheme of inspectorial activity, while important, is but *mechanism*, and the supreme need is *a deeper understanding, not so much of educational mechanism, as of the spirit and the philosophy of the European and American systems.*

The attempt to provide a higher education and sounder professional training for future teachers will have to be supplemented by an attempt also to give a new direction to the activity of those at present on the teaching-staff of the Department. These things, together with better curricula and equipment, are necessary to real reform.[1]

2. *Nature of recommendations.*—The recommendations touch several matters, viz. :—

(A) The scheme of administration.
(B) The scheme of educating and training teachers.
(C) The régime and curricula of the schools.
(D) The arrangements for maintaining efficiency in the educational system.
(E) The material educational equipment.
(F) General matters not included in the above.

Necessarily some of the recommendations will transcend the limit of *primary* education, i.e., education during the obligatory period, viz., from 6 to 14 years of age, but since the foundations of an educational system are supremely important the recommendations are properly applicable to the primary system.

3.

[1] The new activity cannot be secured by the mere issue of circulars, directing teachers to incorporate subjects in the curriculum, or to teach subjects in a new way as has been shewn. It depends upon something far deeper and more thorough-going, viz., a new outlook upon and deeper understanding of education, something which the pupil-teacher system does not give.

3. *Administration.*—(A) In order that the educational system of the State should have unity of development, and be homogeneous, the whole administration of the Department of Public Instruction should be placed immediately under a *Director of Education*, who, subject to the Minister and Parliament, should be charged with the entire direction of primary, secondary, and reformatory education, and the direction of the education of the abnormal.

This direction should include the entire scheme of education, the selection of school-sites, control of the building of school-houses, the maintenance of a system of school-hygiene, control of the educational equipment of schools, of the staffing of the schools, fixation of the conditions of professional education of the teaching-staff, the maintenance of efficiency of the working of the educational system, the arrangement of curricula for the various classes of, and matters appertaining to all or to each of these. Above all, the Director or Chief Administrator should be competent to direct the details of the great reform movement indicated as necessary.

The title of *Director of Education* expresses the proper function of the permanent head of an educational department, on whose personality must depend the whole spirit of the new educational system.

4. *Education and Training of Teachers.*—(B) The scheme of education and training of teachers needs to be completely changed. The recommendations will, of course, deal with the passage from the present state of things to that when reform is secured.

It is assumed that kindergarten is necessary, as hereinafter indicated.

(1) It is recommended that, in future, persons who desire to be ordinary *kindergarten teachers* should be required to possess a good secondary education, and to have specially studied the following subjects, viz. :—

(a) The general history and theory of education;
(b) School-hygiene, the hygiene of child-life, and physical culture;
(c) Educational psychology, with especial reference to the education of very young children;
(d) The technique of kindergarten;
(e) Music and drawing;

and they should be *professionally trained in a kindergarten training college.* The study of these subjects ought preferably to be undertaken in such a college. The length of the special course in kindergarten should be at least one year, provided that the preparatory education be sufficient.

(2) A central *kindergarten college* for the education and training of kindergarten-teachers, with an adjunct-school (kindergarten) for professional practice, should be established.

(3) The curriculum of the kindergarten training college should include subjects (a) to (e) in recommendation (1) above; should in general follow the lines indicated in Chapter IV, and should deal thoroughly with the organisation of kindergarten.

(4) Later, as the need arises, courses for the education and training of kindergarten-teachers should be established in the secondary schools of the larger population centres.

(5) *Professional practice* for such teachers should be arranged in connection with any properly organised kindergarten, but not in a school that has only the transition stage from kindergarten to primary school.

(6) *The pupil-teacher system should be abolished as quickly as possible.*

(7) A large *non-resident training college* for primary teachers should be established sufficiently *near to the University of Sydney* to render attendance at University lectures possible without loss of time travelling to and fro. [Chap. XXXIX, sec. 3.]

(8) In the training colleges for primary teachers no distinction need be made as regards sex.

(9) A small *adjunct school for practice*, similar to that in connection with the Jena Seminary in Germany, should be attached to the Training College. (1)

(10)

(1) On account of the very special character of this school, pupils might be charged a considerable fee.

(10) The pædagogical equipment of the principal training college, and of its practising school, should be as perfect as possible, constituting them a *model-college* and *model-school* respectively, so as to act educatively on the teaching staff passing through it.

(11) A special educational library and museum of pædagogy should be established in connection with the Principal Training College. (2)

(12) As soon as possible, pædagogical sections for the education and training of teachers should be established in a number of secondary schools. (The whole question of secondary education will be dealt with in a later report.)

(13) Entry upon *purely professional* education as a teacher should commence after attaining the lower secondary standard (16 years), [Chap. LIV, sec. 2], and should last not less than three years. This professional education should be either in a training college or (until a sufficient number of training colleges exist) in a secondary school with a fully organised course in pædagogy, and with proper provision for teaching-practice in a primary school.

(14) The subjects of instruction for primary teachers during the three years should be those outlined in Chap. XL,secs. 11, 17–36, certain alternatives being permitted in regard to languages.

(15) All teaching in the pædagogical courses of secondary schools should be given by teachers who have specialised in their subjects of instruction.

(16) In order to move towards the system indicated as desirable, the whole scheme of training at present in force should be at once re-organised.

(17) The condition of entrance for professional education and training should be at once made the standard of the Senior Public Examination, but hereinafter should be specially determined in an appropriate manner.

(18) The period in the training college should be initially two years, to be changed later to three years, viz., in three or four years' time.

(19) Three of the ablest of the younger teachers of the Department, who have had a University education, and who have qualified themselves linguistically, or will undertake to do so in a reasonable time, should be sent for twelve months to study and report upon the methods of training teachers at *Jena*, in Germany, at *Küsnacht*, near Zurich, in Switzerland, and at the écoles normales (for each sex) in *Paris*, under suitable guarantees of subsequent service.

(20) The services of such teachers should afterwards be utilised in promoting the better professional education and training of teachers.

(21) Students of teaching in the Training Colleges, or in the pædagogical courses of the secondary schools, who distinguish themselves in respect of character and intellectual ability, and who give promise of natural aptitude in teaching, should be granted scholarships to enable them to attend the University, and should be eligible for the higher positions of the service of the Public Instruction Department.

(22) Teachers who are required to enter upon practical teaching under the present régime, before having received such proper qualification as has been indicated, should be given later a special opportunity to obtain more thorough professional education, and an effort should be made to induce a sufficient number to enter the departmental service to carry out the change of régime without prejudicing the present educational activity of the Department.

(23) The details of this must necessarily be left in the hands of the Director of Education to deal with, according as the exigencies of the situation demand from time to time.

(24) The professional qualifications of teachers in the lowest class of schools should be raised collaterally with those of teachers in the higher, with a view ultimately of employing no other class of teacher than those who have had a proper education and professional training.

(25)

(2) The cost of this will be relatively slight, because publishers and manufacturers of school material would gladly forward educational works and material.

(25) It is desirable that a *Chair of Pædagogy* be established in the University of Sydney. If the *Professor of Pædagogy* were *Director of the Principal Training College*, so that his personality should affect its development, there would be considerable advantage to the cause of education, but the conditions of his Directorship should involve him only in direction, so as to leave him absolutely free to undertake the necessary study and research in his subject; that is to say, his duty as Director should not unduly occupy his time. A Professor of Pædagogy would necessarily have to study very widely, as this Report will clearly shew.

5. *Régime and Curricula of the Schools.*—(C) While the improvement of the curricula of the "Public Schools" is urgent, it must be remembered that *really substantial progress is dependent upon a better professional education of teachers, and upon a deeper understanding of the modern theory and practice of education.* Insertions of new matter without the proper education of the teachers would only be misleading. All additions to curricula should, moreover, be properly co-ordinated with the entire scheme; this involves due preparation of the teacher. The notion that he can be easily qualified by a little text-book reading, or directed to teach a particular subject in a particular manner, is especially to be guarded against as liable to thwart the attainment of true reform, by substituting the *apparent* for the *real.*

(1) *Kindergartens* should admit children of from three to seven years of age.

(2) Every kindergarten should have an *infants' garden*, to make at least one form of "*nature-study*" possible, and should admit of free organisation.

(3) Up to the age of six years the kindergarten should be kindergarten proper, the method following the *Froebelian principles.*

(4) From the age six to seven the kindergarten should be somewhat modified so as to initiate the children into the work and discipline and method of the primary school. This may be called the *transition* period.

(5) The general idea of the kindergarten method is indicated in Chapter IV.

(6) As soon as kindergarten is fully organised in the schools for infants, and those schools are made satisfactory hygienically, *but not before,* the obligatory period should be enforced in the case of children of six years of age.

(7) The present period of obligatory attendance, 6–14, should be divided into *four stages*, viz., Transition kindergarten, 6–7; Elementary, 7–10; Primary, 10–12; and Higher Primary, 12–14.

(8) It should ultimately be possible to take ancient or modern languages as optional subjects as early as the primary stage, 10 years, in the principal schools of the metropolis and larger population centres, and in the second grade of school at the entrance to the higher primary stage, viz., at 12 years of age.

(9) *General scientific knowledge* introduced in the form of *object-lessons* should extend throughout the course, 6–14.

(10) *Formal science*, with practical illustration and real experiments should be introduced in the primary stage, 10–12, and should be as general as possible. This should include *physics and chemistry.*

(11) The definite practical orientation of scientific subjects should commence in the higher primary stage, 12–14.

(12) Pure trade-teaching, commercial teaching, agricultural teaching, etc., *should* NOT *be introduced during the obligatory period, 6–14, since it would reduce the educative value of the educational scheme*; nevertheless, as above said, the instruction should be practically orientated, with a view to *illustrating* the relation of educative instruction to the practical affairs of life. This practical orientation would on the contrary make the education realistic and of great utility.

(13) The special character of the practical orientation of primary instruction should be determined by the local need and opportunity, *i.e.*, it may be agricultural, industrial, etc., according to the character of the principal forms of local activity.

(14) *Natural Science* ought to be taught on lines similar to the teaching in Swiss and German schools (or European schools generally), sufficient scientific equipment being provided therefor. Such teaching ought to follow the indications of Chapter XXVI. At present scientific teaching is practically absent, and speaking generally the teaching-staff is not qualified to give it.

(15) Mathematical subjects, such as *arithmetic*, *algebra*, *geometry*, *trigonometry*,[1] *mensuration* of surfaces and volumes, etc., ought to be taught in co-ordination, viz., on the principles outlined in Chapters XXIII and XXV.

This implies practically complete reform in the scheme of teaching these subjects; such reform will ultimately greatly relieve both teacher and pupil, besides producing better results educatively and practically.

(16) The "Elements of Euclid" should be *abandoned* as a text-book controlling the learning of geometry, and the continental methods of learning that subject should be introduced instead. Such reform will make geometry far easier, more interesting, more valuable practically; and will greatly extend its range, for at present the total quantity of geometry learnt is very small and quite inadequate.

(17) The instruction in *Drawing* should follow the indications of Chapter XXI. It should be related to "*Nature Study*" on the one hand, and to *geometry* and *mathematics generally* on the other, and should be co-ordinated therewith.

(18) Drawing from copies, sketches, etc., should be abandoned, and colour should be used, even in the kindergarten, in order to develope the colour-sense.

(19) *Modelling* should be taught in order to develope the sense of form.

(20) The teaching of *geography* ought to be wholly reformed. The subject as taught in Europe and America has higher educative value and is extremely interesting. The teaching should follow the methods outlined in Chapter XXIV.

(21) The teaching of *languages* should be undertaken on the conversational-psychological method, by properly qualified teachers who have a sufficient knowledge of phonetics. Foreign languages should be taught by persons able to speak the language accurately. Where that is impracticable, as it often is in the country districts, the *phonograph* should be used to obviate the adoption of false pronunciation, more difficult to unlearn than to learn. The educative value of languages is high.

(22) *Manual Training* should be generally introduced, and should take the form of "*Sloyd*," which may be developed for wood, or metal, and consists of a definitely co-ordinated series of educative exercises. (Sloyd may be specialised so as to orientate it in a definite direction if necessary, since it is the educative co-ordination of the exercises which makes it Sloyd in the technical sense.) Exercises in mere carpentry, joinery, etc., should not be substituted for Sloyd, as they are educatively very inferior.

(23) Girls should be permitted to take Sloyd if they so desire.

(24) *Needlework* should of course be retained in the curriculum.

(25) *Domestic economy* with practical lessons in domestic occupations, *e.g.*, *cooking*, *washing*, *ironing*, etc., should be taught to girls, and all the larger "Public Schools" throughout the territory should be equipped for such teaching. The theory of food and of its preparation should be taught.[2]

(26) *Gymnastics* on the lines of *physical culture*, and for children from kindergarten age upwards, should be systematically introduced into all schools as soon as possible. The indications of Chapter XVII should be followed in respect of its development.

(27) The *science teaching* should be so directed as to enlighten the pupils as to the significance of *play* and of *physical culture*, to their bodies and minds, and also as to the significance of *personal hygiene*, of the important *functions of the body*, to their physical and mental well-being. (28)

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[1] Elementary trigonometry is easily learnt by children of the primary-school age.

[2] Ignorance as to the nature of food is more widespread than is commonly supposed, and *infant* mortality in particular might be considerably reduced if our "Public Schools" taught as suggested, *e.g.*, why *starch* foods should *not* be given to infants before the true saliva is secreted.

(28) In view of the insufficient amount and often complete absence of *religious instruction*, and of the unsatisfactory character of the arrangement which practically does not allow of teaching appropriate to the different ages of the pupils, it is eminently desirable that there should be *systematic instruction in ethics*. This should be on lines similar to the instruction in France. [Chapter XV.] Every facility within the limits allowed by the present statute should be afforded to clergymen to give efficient religious instruction.

(29) *Civic Instruction*, that is, instruction in the rights, duties, and privileges and responsibilities of citizenship, should also constitute part of the ordinary curriculum. This subject can be co-ordinated with history in teaching, and is of daily increasing importance, in view of the general trend of Australian political development. [See Chap. XXXV, sec. 6, and Summarised Report IV, 4.]

(30) *Type-programmes* elaborating the scheme of teaching various subjects should be prepared for each grade of teaching in each class of school, for the *general* guidance of the teachers. [Summarised Report VII, 8.]

It will be seen that this Reform of the curriculum is *radical*. But it is *necessary* if the education of New South Wales is to reach the plane of European education, and it is *practicable*, for what is recommended is actually carried out in other countries. It demands, however, proper *education for the teaching staff, not merely a sudden inclusion of the subjects in the curricula, or the issue of a direction that the subjects are now to be taught in a particular manner.*

6. *Maintenance of efficiency in the educational system.*—(D) This covers several subjects, viz. :—

(i) Inspection.
(ii) Education of Inspectors.
(iii) Special effort to assist primary teachers in the Reform of existing system.

These will be severally referred to.

(1) *Inspectors* should be charged with the maintenance of efficiency of the schools in their several districts, and the oversight and care of the district educational requirements. Thus they should be the advisers of the teachers as to local developments, etc.

(2) Necessarily, they must be authorised to hold any type of *examination* deemed requisite to assure themselves of the methods in vogue, and so as to be able to advise and assist the teachers in the discharge of their duties. The duty of holding such examinations should not be regarded as their normal function, but as a power to be exercised, if necessary, in order to assist the teacher, or to deal with flagrant cases of lack of industry.

(3) The present system of *examination by inspectors should be abolished*, subject only to the above indicated exception.

(4) *Every inspector should be required to become an educational expert*, fairly conversant with the methods of education in other countries, and his duties should be so ordered as to allow him the time and opportunity for the necessary study, otherwise it is impossible for him to maintain his educational efficiency.

(5) *Future inspectors* should be University graduates, or teachers of exceptional ability and information.

(6) The time set free by abandoning the system of examination by inspectors should be devoted to helping individual head-masters, and the teachers generally, to grasp the scope and spirit of the reforms recommended.

(7) In view of the narrowing influence of the existing scheme of education, inspectors should be encouraged to make strenuous efforts to thoroughly grasp the spirit of modern methods of education, and to help the teachers in their districts to understand them.

(8) Every possible facility should be afforded existing inspectors to acquire as wide a culture as possible, both in literary and scientific subjects, so that their personal influence on the teaching staff shall materially help the latter in moving along the path of reform.

(9) The progress of pupils in the schools should be determined solely by the teachers.

(10) Teachers should be encouraged to aim at *thoroughness, rather than quantity*, in their work, and should be appreciated in proportion as they are capable of stimulating the self-expression of the pupils, that is, the *power to think* for themselves, and to rationally grasp the subjects of the curricula. Less importance should be attached to mere memory work.

(11) Special inducement should be offered to teachers to attend *holiday courses of lectures* on the fundamental principles of modern education, as a means of bringing them into touch with the spirit of modern education.

(12) Head-masters of the larger schools should practically be wholly occupied in supervision, and in assisting the subordinate (assistant) teachers in carrying out the work of the school to the best advantage. Their position should be analogous to that of Director in a continental school. This system enormously increases the efficiency of the school.

(13) The *whole pædagogic effort* of the immediate future should be to get into touch with the *Reform movement.*

In regard to the special activity of the Inspectorial Staff, it may be added that it is *quite impossible to approach the plane of American or European education without such special effort*, and it is believed that, when this is publicly recognised, the devotion of either the lower or higher staff of the Public Instruction Department will not be found wanting in endeavouring to transform the State System of Education. The devoted effort which in the past has failed to achieve what it might have done, owing to the system to which we have been committed, will find fuller opportunity for expression under the régime of Reform.

7. *Material Education Equipment.*—(E) Material education consists of

(i) The schools and their accessories.

(ii) The furniture of the schools.

(iii) Special equipment for subject-teaching.

These will be referred to *seriatim* in the recommendations.

(1) A systematic examination by an expert in European school hygiene of existing schools should be undertaken with a view to improving them as far as their construction will allow.

(2) All future sites for schools should respond to the requirements indicated in Chapter XLVII, *i.e.*, in respect to sanitary conditions, possibility of satisfactory orientation of school building, etc.

(3) All future school buildings should be properly orientated, and should conform to the conditions specified in the Swiss regulations, indicated in Chapter XLVII.

(4) The form of building, arrangement, and dimensions of school-rooms, the scheme of ventilation, heating, or of cooling, etc., the accessories, as lavatories, latrines, etc., the yards, shade-trees, etc., should meet the demands generally indicated in the same chapter, XLVII. These matters are more fully referred to hereunder.

(5) The present arrangement of the building approved by the Department, viz., the long class-room, at best subdivided by glass and wooden partitions (designed to make supervision of pupil-teachers by the head-master possible), *absolutely prevents the architect arranging for the light to fall in the proper direction. It should therefore be abolished* for hygienic reasons, apart from the pædagogic reason, viz., that it hinders concentration both in the case of pupil and teacher.

(6) The *single class-room* for each class-group should be adopted.

(7) Proper hygiene demands greater *cubic and floor space* than has been allowed in the State, for it should, in both instances, be about *double* the present amount. [Chap. XLVII, secs. 12, 16.]

(8) The *lighting arrangement* needs to be wholly altered, as previously indicated, and as shewn in Chapter XLVII, secs. 14, 15. This matter is important, since bad lighting tends to produce myopia.

(9) The *lavatory and latrine* (w.c.) arrangements are very unsatisfactory in the "Public Schools," the latter being *inconsistent with a due sense of decency*. They should conform to the indications of Chap. XLVII, sec. 18.

(10) *Shade-trees* should be provided in the school-yards, as indicated in Chap. XLVII, sec. 21.

(11) Every school should have, when possible, its *school-garden* to assist in the "*Nature study*," and in the practical orientation of the scientific teaching.

(12) All the larger schools should be looked after by *caretakers*, who should keep both school and grounds in proper order, as in Europe.

(13) The *school-desks* should satisfy hygienic requirements, that is, the relations of seat and desk should be properly adjusted, and the seats should have suitable backs, supporting the body of the pupil.

(14) The present system of *seating* is unhygienic, and operates adversely to the proper physical development of the rising generations of this State. It tends to produce myopia, spinal-curvature, and to reduce the lung-power and consequently the vitality of the people.[1] Much of the lassitude of children in school is due to the unhygienic system of seating, and to the want of adequate cubic space, as well as to bad ventilation and bad conditions as concerns heat. The matter is extremely important as it continuously affects the physique of the Australian people.

The present form of seating (a long desk) is the worst seen by the Commissioners, and should therefore be abolished as soon as possible, while that indicated in Chap. XLVIII, secs. 3–18, viz., the best forms of seating used in Switzerland, should be adopted.

(15) Every school should be provided with a simple *dispensary* and '*first-aid*' *chest* [Chap. XLVIII, sec. 22].

(16) All schools should be provided with *simple apparatus* for the demonstration of facts in *physics* and *chemistry*, and also with *science museums*.[2]

(17) Larger schools should have simple *physical and chemical laboratories and museums for scientific material*, to enable the science teaching to be made realistic.[1]

(18) The *general equipment* in the way of wall-charts, diagrams, pictures, maps, etc., needs to be considerably improved [Chap. LI]. The use of slates should disappear as unhygienic.

(19) All larger schools in the chief centres of population, at least, should have *projecting lanterns, and slides*.[3]

(20) Larger schools in the chief centres should be at once equipped for manual training and Sloyd, and such equipment extended to smaller schools also, in the near future.

(21) Similarly for the teaching of domestic economy, cooking, laundry work, etc.

(22) The general educational equipment of schools should conform to the requirements indicated in Chapter LI.

(23) All schools should be provided with libraries for the use of teachers, containing suitable works of reference, encyclopædias, etc., to enable them to maintain a high degree of efficiency.

(24) The establishment of suitable libraries for the children is worthy of encouragement.

[1] The evidence is much more serious than is commonly supposed.
[2] The cost of these is not so serious as might at first be supposed.
[3] Many of these matters might well be allowed to offer scope for the expression of *local interest* in education and school equipment. Unfortunately it is not yet the fashion for our State schools to benefit by local generosity.

8. *General matters not included in previous recommendations.* A number of subjects have not been dealt with. These include:—

(i) Hygiene in relation to the school-pupil, corporal punishment, etc.
(ii) Co-education.
(iii) Schools for the feeble minded.
(iv) Schools for the deaf and dumb, etc.
(v) Reformatory schools.
(vi) Truant schools.
(vii) Special courts for the hearing of cases of truancy, offences by children, etc.

These various subjects will be referred to in the order indicated.

(1) Teachers generally should be made aware of the necessity and mode of *testing the sight and hearing* of children, and should place them in class accordingly, or refer them to the school physician if necessary.

(2) The *hygiene of the school-pupil* both as regards his condition in school and generally should be better appreciated by teachers in charge of the school, who should be thoroughly instructed in school-hygiene.

(3) A properly *qualified physician and surgeon, who has specialised in school-hygiene,* should be permanently associated with the Department of Public Instruction.

(4) Every school should have a *school physician* officially associated therewith, to whom reference could be made in cases of necessity, and who would be competent to advise in matters of hygiene, infectious disease, etc.

(5) For the metropolis and larger centres a *visiting school physician* should be appointed (preferably a lady), to secure a good general hygiene, and to advise as to infection, disinfection, and to obtain statistical information, etc.

(6) *Corporal punishment* should be abolished, *except as a punishment of disgrace,* one degree short only of expulsion. It is at present used in many of the public schools as an incentive to study, that is to say, boys are "*caned*" who do not acquit themselves satisfactorily as regards their school-tasks. Such a régime is obsolete in Europe and the greater part of America, and reflects discredit upon our system.

(7) It is too early to judge with certainty the ultimate effects of *co-education.* The testimony of educationists who have had educational experience in Europe varying from Southern Italy to the Northern countries like Scandinavia and Finland, is that with the northern peoples it is advantageous, but with southern, impracticable.
It has on the whole a strong advocacy in the United States of America. It of course exists to some extent in country schools everywhere, including those of the State, and may be tentatively adopted in the cities.
The effect of co-education seemed favourable as far as the Commissioners were able to judge, the general result being that the relationship was more normal and the influence of each sex upon the other beneficial. It could very easily and should be introduced in schools built on the European system, and ultimate adverse decision would be of no consequence so far as mere school arrangements are concerned. Its general adoption could be deferred till the light of further experience in countries with co-education practically decided the question.

(8) Schools should be established as soon as possible for the *feeble-minded,* on the lines indicated in Chapter XLI.

(9) Schools for the *deaf and dumb* should adopt the lip-reading method, so as to have the advantages of oral instruction, and should be generally developed as indicated in Chapter XLII.

(10) The general régime in the *reformatory schools* of this State compares satisfactorily with that seen elsewhere. As a general result it appears that the more kindly the treatment meted out, and the more the past criminal or anti-social history is *apparently* ignored, the better the result. In the majority of cases the reposing of confidence generates a favourable response.

(11) The lads on a ship like the *Sobraon* would be better and more conveniently housed ashore.

(12) The general school education of the inmates is subject to the same criticism as the education in the public schools, that is to say, it could be greatly improved, since it is in fact the same system.

(13.) The whole question of *reformatory education* is, however, one of great difficulty, and one in which considerable difference of opinion exists. To treat it perfunctorily, in view of the issues involved and the elaboration of recent investigation therein, would be unjustifiable. Detailed recommendations are consequently left for a later report.

(14.) *Truant schools* were seen, and apparently give good results, but the whole question is closely allied with the preceding being also one in regard to which strong differences of opinion exist.
Since in general children should be allowed to remain with their parents, if attendance at school can possibly be secured without arrest and practically imprisonment in the Truant school, the creation of such schools demands most careful consideration in the light, not only of what was seen by the Commissioners, but also in that of the world's experience. For that reason recommendations are postponed for a later report, to follow after a more deliberate study of the question. It ought to be added that the results appeared to be excellent, and that the question has been more thoroughly studied by Mr. J. W. Turner.

(15.) The prevention of children being brought into contact with the ordinary surroundings of a police court is of sufficient importance to justify the creation of courts for the trial of child-offences, and for dealing with delinquencies in regard to the obligation of attendance. The method of bringing them before ordinary Police Courts deserves strong reprobation.

X.

CONCLUDING REMARKS.

[G. H. KNIBBS.]

1. *Introduction.*—The above recommendations imply that the *Public School System of New South Wales needs to be completely reformed.* If they were given immediate effect, primary education might with strenuous effort be brought in two decades on to the plane of primary European education as it stands to-day. The present state of things is a consequence of the adoption of the pupil-teacher system, with its *inevitable deteriorating influence.* Unless this system is abolished, real reform will reach but a very little way, for the professional education of the teaching-staff is the most fundamental element of an educational system.

2. *The Departmental view of the Pupil-teacher System.*—In recommending a course so absolutely antagonised to the present views of the Department of Public Instruction, as to what constitutes a proper scheme of education, an omission in this Report of all reference to the departmental view of the pupil-teacher system would be unjustifiable, and might seem to have failed in due respect for the expression of its deliberate opinion. It ought therefore to be said that that opinion has been most carefully reviewed in coming to a decision.

It should be recollected that high officers of the Department were quite recently (January, 1902) associated in Conference, and after deliberation proclaimed *their preference for the pupil-teacher system*, and practically for the whole departmental scheme of preparing teachers for their avocation. It was recognised, however, that the educational qualification was insufficient. This

This system was not defended on the ground that, though defective, it must necessarily be adopted from the pressure of circumstances; on the contrary, as will appear from the extracts hereinafter quoted, it was strenuously supported as an ideal system. That the decision to maintain the system was not hastily reached is obvious from the serious form in which it was remitted to the Conference.

In response to a question by the Honorable the Minister of the Department, whether the "*present methods succeed in not only imparting knowledge of the technique of the teaching profession, but also in inspiring teachers with high aims,* the Conference affirmed '*that the existing pupil-teacher system, with modifications should be continued.*'"

It would not be correct to infer that the whole teaching staff of the Public Instruction Department believe in the system. As a matter of fact many of the widely-read teachers of the Department who have put themselves in touch with the larger view of what is requisite in teaching, with the traditions of Europe and America, and with the controversy in the United Kingdom as to the pupil-teacher system, keenly realise its defects, and are anxious for Reform.

It may be pointed out that not only did the Minister raise the question of a higher and better system as an issue, but so also did the Under Secretary (Mr. Maynard), in the words "*Shall we continue to have pupil-teachers, or shall we as is done in Canada, do without them. That is the question.*" (Conference Report p. 23.) Then it was that the decision was reached to continue the system, and it ought to be added that the opposition to its abandonment was pronounced. The failure on the part of high officers to recognise and appreciate the inefficiency of such a class of teachers as the pupil-teachers, is very significant.

The pupil-teacher system had previously been somewhat *warmly* attacked. Those who realise with any clearness the inevitable effect of the employment of young, inexperienced, and imperfectly educated persons (children really) as teachers, and whose conception of the real nature of education forces them to appreciate the *disastrous effect of this upon the educational development of any country*, are likely to be vehement in any adverse reference to the system; for *from the public point of view it is in the interest of the quarter of a million children who are being educated in our territory that is of paramount importance*, not the verdict on the system adopted by the State Department.

That there was no expressed objection to the system might seem remarkable, but this may be explained by the fact that the dissent was not sufficiently influential. *Though practically voiceless, it nevertheless exists.*

One officer stated "*that in England they are now discarding the pupil-teachers,*" but that some misconception was prevalent appears from the fact that another affirmed (see p. 30 of the Conference Report) that in Sweden, Norway, Belgium, and Switzerland, pupil-teachers are employed in schools, and even the mode of preparing for examination was particularised.

3. *Decision of* 1902 *Conference as to pupil-teacher system.*—In his opening speech at the "Conference of inspectors and departmental officers," held late in January, 1902, the Minister of Public Instruction, the Honourable J. Perry, when remitting the question of the proper method of training of teachers referred to its significance in the following terms:—

"Taking our business-paper in the original order of its drawing up, 'the training of teachers' is placed first for our consideration. *The training of teachers is, without doubt, the most important responsibility devolving upon the Department.* I realise that our present system has succeeded in producing many admirable teachers whose work to-day is recognised from one end of the country to the other. You can only judge a system by the results it produces, and it is not for me to say whether better results could have been obtained under different conditions. *I am keenly alive to the necessity of seizing every opportunity for improving things. To be content with anything that we do is but the prelude of stagnation,* but I know full well that the leading spirits of the Department are not content, and are as eager as anyone to secure the best results. I am anxious to extend and improve, as far as possible, the conditions of our training colleges, and my intentions have been strengthened considerably by the knowledge that I am supported by the sympathy of all grades in our service to-day. I do not claim to have fully analysed the methods connected with our training colleges, and, therefore, in putting a few questions in this speech I am fully prepared for satisfactory assurances on the points that I raise. When I ask, therefore,—*Do our present methods succeed in not only imparting knowledge of the technique of the teaching profession, but also inspiring our teachers with high aims* and a consciousness of the need of something better than we have so far attained, and a determination to take a share in the attainment of it?—I am inviting the testimony of the Conference upon the point. We all learn by experience; *but the man whom we can least permit to gain his experience while working is the teacher.* Dr. Abbott says: '*I gained my experience*

as

as a teacher at the expense of my pupils for at least two years.' No doubt this is true, and doubtless many teachers have taken a much longer time than two years. The training of teachers is supposed to obviate, as far as possible, this loss to the children; and we should, therefore, commence early and ontinue the period of training for a sufficient time, in order to send our teachers properly equipped to heir work."

In response the Conference recommended :—[2]

1. (*a*) That the existing pupil-teachers' system, with modifications, should be continued.
   (*b*) That the standard of the pupil-teachers' entrance examination be in accordance with the course of instruction attached.
   (*c*) That no applicant pupil-teacher be examined until the age of 15 years, and that no successful applicant be appointed until the age of 16 years is reached.

4. *Opinions expressed at the Departmental Conference.*—The following opinions expressed at the Departmental Conference are important as an indication of the traditions and consensus of opinion regarding the proper method of training teachers obtaining in the Department, or rather among the senior officers of the Department. The opinions are taken in the order in which they will be found in the Conference Report. The italics do not appear in the original, but serve to give prominence to important statements.

Mr. F. Bridges, Acting Under Secretary, Department of Public Instruction (then Chief Inspector), stated :—

"If there is one subject on which I am competent to speak it is that with regard to pupil-teachers. *I started as a pupil-teacher at the mature age of twelve.* . . . I would like to allude to a statement made by Mr. Wilkins to the old National Board. Mr. Wilkins' name is one always to be held in reverence in connection with educational matters in this State. He said, that *these young people, being boys and girls, really were more in touch with the children taught, because they understood the children's natures better. My experience has shown me that his words are true.* I have had charge of hundreds of pupil-teachers, and the supervision of thousands. I cannot but think that under existing circumstances *we exact too much from them.* When I started as a pupil-teacher I was told I should have an hour off each day for private study. As Mr. Bradley knows, that "hour-off" was merely a myth. We had to be at work at half-past eight, and we were there until five o'clock. In those days pupil-teachers had a much more difficult row to hoe than at present. On the other hand, *I know that there are teachers who are too lazy to give proper instruction to their pupil-teachers.* I have frequently asked a teacher what instructions he was giving his teachers. I remember one celebrated case. I went into a school and found *the head-master teaching eleven boys in a corner of the place at the same time that his pupil-teacher was away elsewhere teaching ninety pupils.* Yet that man considered that he was doing his duty. *To make the system perfect we want, first of all, to hold an entrance examination.* Those successful would be required to attend at a district Model School, or a similar school, where they would be taught by a first-class teacher, and have excellent opportunities. . . . I consider, further, that any head-master who prepares a pupil-teacher for matriculation or any other examination of that kind should receive a bonus. pp. 21, 22.

Another officer's view was expressed as follows :—

"There is no doubt that we, as inspectors of schools, feel very strongly on this question of pupil-teachers. They form such a very large proportion of those engaged in the work of teaching. . . . . I have given a lot of attention to this matter. . . . . *I do not know of anything in connection with it that is better for the advancement of primary education in this State than a good training of the pupil-teachers. The pupil-teacher system has been tried in all our big schools, and has been very successful.* It has been extended to the smaller schools of our State. We find pupil-teachers in the remote country parts doing work which they could not have done under any other teaching arrangement I know of. We have them everywhere. *These ex-pupil-teachers are doing a great work.* They will do a greater work. With regard to their training, I do not hold that four years is too long a term, if we alter our methods somewhat. If, as Mr. Bridges suggests, we gave them a short period of service in the schools prior to putting them on the staff, *and made them responsible for class teaching*, we should have better results. That is where the shoe pinches with a good many of our head-masters. They say that *a pupil-teacher is put into the school, and although he has never had experience, he is made responsible for a large class of children, and the school suffers to a certain extent at the hands of an inexperienced person.*" p. 22.

The resolution to adhere to the pupil-teacher system was moved in the following speech :—

"There appears to be a question underlying all this that is now under discussion, which it would be well to have settled. *The method of training teachers by means of the pupil-teachers' system—and which has been in existence ever since our Department has been in existence—has been attacked and found fault with. There is certainly plenty of scope for differences of opinion. We find different countries adopting different views* on the matter, and putting those views into domestic legislation. *We find, for instance, that in England they are now discarding the pupil-teachers.* Scotland, on the other hand, is retaining them

[1] Conference Report, p. 14. The *italics* are not in the original, and are inserted to draw attention to the point Minister's remarks.
Ibid., p. 4.

them. The pupil-teachers' system has been still further extended in Victoria by the establishment of the monitorial system. *It would be well* if we decided, before going any further, *to settle whether we are going to continue to adopt the pupil-teachers' system or not.* To be brief, I will move:—

That we continue the pupil-teachers' system, with modifications.

It may be said that nearly all of us were pupil-teachers, and, therefore, will vote for this system, and that it is for that reason an *ex parte* vote. We are supposed—and I hope the supposition is warrantable—to be sensible persons, coming here to consider this question in the interests of the State, on all points and from all sides. *It would be desirable to say whether we shall continue the pupil-teachers' system with modifications, or do away with it altogether, as England has already done.*" pp. 22, 23.

The resolution was seconded in the following terms:—

"I have very great pleasure in seconding. . . . . It is a system I have been led to believe is worthy of all respect. It has done good work in the countries in which it has been established, and we have here, in the concrete, prominent examples of what it has done in this country. *It is idle for people to say that pupil-teachers are half educated.* We have gentlemen here who are distinguished examples of what that system effects. It is idle to contend that it is necessary for the education of any human being that he should go through a certain process, and that that process alone will produce an educated man. Our system has produced numberless educated men and women throughout this State. It has done so much good that *we hesitate to touch the system lest we be supposed to belong to the enemies' camp.* That is my feeling. I know the discipline under which the pupil-teachers have suffered. I sympathise with all the suggestions for improving their position. We should have no hesitancy in urging the doing of something for the pupil-teachers because of any criticism on the part of those who know nothing about the New South Wales system. *It behoves us, therefore,* at the outset *to express,* in the terms of the resolution, *that we are in favour of the retention of this system* in New South Wales, and I heartily second the resolution submitted." . . . . p. 23.

Mr. Maynard: "It seems to me that that will start the thing fairly. Shall we continue to have pupil-teachers, or shall we, as is done in Canada, do without them. That is the question." p. 23.

The preceding remarks made at the Departmental Conference afford a sufficient indication of the tenacity with which the pupil-teacher system was espoused by the highest departmental officers, and it should be noted that these defences of the system were made after a long series of attacks upon it, pointing out its inherent weakness.

As already stated, this antagonism of officers holding the highest positions in the Department to any departure from the pupil-teacher system is very significant, and commands attention. The traditions of the Department are clearly evidenced in the speeches above quoted, and can be recognised in the tone of the Conference in discussing the question. This system has been regarded as one of the important contributing factors to the success alleged to characterise the work of the Department.

Here it ought to be recognised that the loyalty to departmental traditions, and the cultivation of a high respect for the earnest labours and personal characters of former chiefs of the administration, are happy auguries of the possible benefits of a right direction of the departmental activity. It is, however, the devotion they exhibited to the cause of education, not the system they espoused, which properly claims the unqualified respect of the departmental staff.

The failure on the part of the highest officers of the Department to recognise the obvious inefficiency of the pupil-teacher system in comparison with that of previous training, the practical impossibility of voicing any dissent, the oblivion to the fact that educated men in the United Kingdom condemned it, the want of appreciation of the significance of the very extensive literature open even to those who read English alone, are the best evidences of the natural effect of the system itself. It is in these things that its deteriorating influence is most conspicuously betrayed, for among the highest officers of the the Education Department there are many of most undoubted ability.

If in the professional training and education of teachers nothing more had been done than to outline the history and theory of education, such a fact as that above referred to would have been impossible.

The failure of the Department to avail itself of the world's educational experience, is the only possible explanation of the ardent defence of the pupil-teacher system, despite the continual criticism to which it had been subjected. The failure permeates the system. It is seen in the curriculum, in the method of inspection, in the hygienic arrangements, in fact in nearly every important feature of the system.

If, as indicated herein, the Department charged with popular education has itself failed to recognise and appreciate the gravity of our educational limitations, how can it be hoped to bring about a clear public recognition thereof? For the

people

people of this State have been largely educated under this system, and as a whole have not been brought face to face, either through reading or experience, with the incomparably better systems of America and Europe. How then can they acquire any adequate conception of the extent of our educational shortcomings?

The answer may be found in this—that *just in so far as the recommendations* (which merely attempt to bring into existence the features of the better educational systems of Europe and America) *seem impracticable, so is the need of reform urgent.*

No one competent to form an unprejudiced judgment can review the material and spiritual evidences of the superiority to ours of the European and American systems of education, without acutely realising how much leeway we have to make good. Disagreeable therefore as is the task of unreservedly proclaiming what one deems to be the truth of the matter—inasmuch as it reflects severely upon the existing régime, and expresses a decision opposed to the official view, deliberately formulated—the transcendent importance to the future of this State and People of a sound educational system imperatively demands that personal feelings be set aside. To hesitate in the effort to clear the way to a truer understanding of our *urgent need* of a better educational system would be unworthy of the responsible duty assigned the Commissioners.

Nothing short of a radical reformation, touching every plane of our primary system, can effect the great change necessary to constitute our education a peer among the nobler systems of civilised mankind, and enable the devoted labours and aspirations of the teachers working under it to achieve that success which we have a right to expect.

The hope is entertained that it will be clearly recognised that it is the *system* which is so adversely judged, not the zeal, devotion, and ability of those whose equal efforts under a better educational system would have benefited the people of this State to an extent that can hardly be estimated. As previously stated, there has been good education, but it has been because the genius and industry of teachers have enabled them to transcend, to some extent, the system we have adopted.

Finally, the Commissioner here writing feels it to be his solemn duty to point out that there is an increasing recognition in the United Kingdom of the fact, that to fail in making English Education equal to that of the other great nations, is to fail in a matter of the highest national import; it is to court national disaster. The educational system that successfully aims at building up noble, vigorous, purposeful, and able citizens, is a system that creates national wealth, and begets national force; hence it is the foundation upon which every true patriot will hope to build up the future of Australia, and to consolidate the interests of the Empire.

Summary and Recommendations; by J. W. Turner.

XI.

PRIMARY INSTRUCTION.

[J. W. TURNER.]

FRANCE.

Introduction.—The information given in the chapters on the primary and upper primary school system of France is gained from official reports generously supplied by the school authorities in France, and from observations of the Commissioner, made during his visit to Paris last year. The very comprehensive and logical scheme of instruction, as set out in the official reports so fully quoted, appeals to the Commissioner as one containing some very desirable elements that may with advantage be adopted in any improvements to be effected in our own system. For these reasons the views and opinions of those responsible for directing public education in France, Ministers of Public Instruction and Directors of Primary and Upper Primary Education, have been given very fully, the plan of administration outlined, and the best parts of the system dealing with methods of instruction detailed.

The French system of national education is the most perfect piece of educational machinery in existence, and provides for an uninterrupted and thoroughly graduated course of instruction, starting at the age of 4 and 5 years in the maternal schools, extending through intermediate classes, through upper primary classes, to the secondary schools, and ending about the age of 18 years.

Administration.—In the general administration of this great national scheme, the Minister of Public Instruction is assisted by a Superior Council, and in the immediate administration of the system he is supported by general inspectors, rectors, academy inspectors, prefects, primary inspectors, and Departmental Councils. The general inspectors are not permitted to remain more than two years in a district; the rectors have charge of the public educational establishments in their divisions, and supervise private primary schools in accordance with law; the academy inspectors are at the head of primary instruction in their Departments; the prefects have a large amount of power and influence in school matters, and work in considerable harmony with the academy inspectors; primary school inspectors are largely employed in visiting schools, private as well as public, in judging the school-work, and particularly in advising and guiding the teachers in their methods; the Departmental Councils are entrusted with considerable powers in their Departments, much greater than those possessed by our State School Boards. Their composition, it will be seen on referring to the report, Chapter VIII, is largely professional in character. Inspectresses are employed in some Departments in France, but there is such great satisfaction with the inspectors, who have proved themselves well qualified to supervise girls' and infant schools, that there is no intention of making any further appointments of inspectresses. In matters of general inspection it may not be necessary to have lady inspectors, but they are required for special subjects as domestic economy. Lady inspectors are largely employed in America, and, perhaps, in a less degree in England, to supervise such subjects as cooking, house-keeping, drawing, and needlework.

The work of administration is still further extended by the appointment of Citizen Committees, whose duties are very similar to those of our own School Boards. These bodies have nothing to do with instruction in the school, but are concerned with the material organisation and condition of the buildings, with the behaviour of the pupils, school attendance, and the provisions for assisting poor children. Their appointment serves to show the great care bestowed in keeping every link in the national scheme of education intact, and their share in the administration tends to bring more closely together the home and school life.

Methods

Methods of Teaching.—The French methods of teaching are just as carefully thought out as the work of administration. In the training of infants the teachers are careful in the teaching of the mother tongue to correct, by way of oral exercises, faults of pronunciation or local accent; in teaching writing the work is done on paper; history is taught by way of short simple biographies, illustrated by pictures; geography, which consists of observation of the natural surroundings and simple phenomena, and familiar chats on hygiene, plants, and animals, form in the French infant school the beginnings of a course in Nature study.

Appointments, Promotions, etc.—The earliest age at which a person is allowed to teach in France is 18 for males, and 17 for females. To take charge of a primary school, a teacher must be not less than 21 years of age, and must hold the certificate of aptitude. There are no examinations of teachers similar to our own. Promotions are made on the recommendation of the inspectors and the Departmental Council. This recommendation is forwarded to the Minister, who decides on the number to be promoted according to a certain standard of appointments. In determining the promotion of teachers, the reports of Primary and Academy Inspectors have much weight, and their decisions are largely influenced by the efficiency and length of service of the teachers due for promotion. Probationer teachers are employed as assistants, but not earlier than the ages above mentioned.

Methods of Instruction and the Curriculum.—It has been urged against the French public school system that it is bound by cast-iron conditions, that it is wanting in elasticity, and that its teachers must adhere rigidly to time-table and programmes, which are determined by the central administration. This at first sight appears true, for on visiting the different schools the same stereotyped printed time-table confronts one. The determination of the subjects to be taught and the time to be devoted to each subject, are matters settled by the Minister, with the advice of the permanent heads of his Department, but the methods of instruction to be adopted are well discussed at frequent pedagogical conferences which teachers are compelled to attend. Armed with his own views of method, and equipped with the additional knowledge he has gained by the discussions in the conference, the teacher returns to his school prepared to teach the subjects of his programme according to the regulation time table, in the light of the greater experience acquired by intercourse with his fellow-teachers and the Primary and Academy Inspectors. If he falls into a narrow groove, the fault is not with the system but with the individual. The value of such conferences is universally admitted, and one welcomes the movement of our own teachers in coming into line in this respect with other parts of the world. Let us cherish the hope that the day is near at hand when, as in France, representatives of all grades of teachers will meet their inspectors in friendly and unconstrained conference. The benefit will not only be professional but also largely national.

The wide range of subjects in the elementary primary school and the issue of a leaving certificate at the age of 11 years are two matters which, it is believed, will not meet with the approval of the New South Wales teachers, who feel these drawbacks in their own system, but it is clear that the curriculum stated in the report of the French primary system is the maximum, and that the practice of cramming—if such mottoes as "Do not teach much, but teach well"; "Let the pupil leave the school, it may be with a minimum of knowledge but with undoubted tastes and capacities for learning," mean anything—has no place in the teaching methods of the French schools. So far as the Commissioner could judge from the limited time at his disposal, the aims of the French teacher in all instruction appeared to be quality rather than quantity. The absence of all formal examinations, and the sympathetic character of the inspection, furnish favourable conditions to the attainment of this end.

The early age at which many of the French boys and girls obtain the leaving certificate is engaging the serious attention of the governing bodies, and there is a strong disposition to retain the children at school for a longer period. Instructions have been given to increase the difficulty of the examination for the leaving certificate: Undoubtedly this early leaving is a weak point in the school system of the country.

Leaving

Leaving Certificate.—The desirableness of issuing leave certificates to pupils in our own State schools was discussed in the Conference of Inspectors and other officials, held early in the year 1902, and reference was made to the practice in France and Scotland.

In the public schools of Scotland a pupil may take the Merit Certificate at at the age of 12 or 13, but the possession of the certificate does not exempt him from school attendance until he has reached the age of 14 years. The certificate is a qualification for admission into a higher grade school, or a testimonial for entrance into a business establishment (but not under the age of 14 years), showing that the holder has passed the highest standard of elementary instruction, and that his moral character has been satisfactory.

In France the certificate may be obtained on the completion of the work in the middle course of the Primary School, and statistics show that a great number of French children never enter the superior course of the school.

Unfortunately, in New South Wales a somewhat similar state of things exists. Under the 20th section of the Public Instruction Act of 1880, a pupil who holds the certificate of being sufficiently educated may leave school before the age of 14 years, which, in our State, as in Scotland, is the statutory age for leaving school. The examination for this certificate is one which an ordinarily intelligent lad of 11 or 12 years in a good upper third or fourth class can easily pass. As a matter of fact, many of our pupils do get the certificate at this age, and pass away from their schools with this insufficient equipment, to their own undoubted detriment, and to the regret of their teachers, to enter upon the sterner duties of life.

Scotland, despite its dense labour population, has abolished the "Labour" Certificate which, until recently, permitted children to leave school earlier than 14 years of age. France is striving to educate her people to the advantages of a longer period of school attendance, and is discouraging the early issue of the leaving certificate. New South Wales must not lag behind in a matter of such vital significance.

As Scotland abolished the "Labour" Certificate, so must our country abolish "the certificate of a child being sufficiently educated" before he is 14 years of age. This must be done in the interest of the child.

The granting of a certificate of merit, or leaving certificate, when the child has reached 14 years of age, recording his class attainments, his general conduct, and his moral character, is a right and proper course to take.

Moral Teaching.—The teaching of religion has no place in the regular programme of the French school, and it does not appear that there exists any special provision for dogmatic or general instruction in the subject. The existence of God is assumed, and reverence to His name inculcated.

One's personal views on the value of religious teaching to children of public school age need not be intruded here. It will suffice to say that our own State seems to have made the best attempt at solving the difficulty of religious instruction in schools by the facilities it gives clergymen and accredited teachers under Clause 17 of the Public Instruction Act, and by the excellent general Scriptural instruction contained in the Irish National Scripture Books which are still in daily use.

The moral and civic side of the school instruction in France is strongly emphasised. "The teaching given in the name of civil society," says the 1900 Report, "draws its principal strength from its essentially secular spirit, opposed to all sectarianism, and profoundly respectful of the rights of conscience." Later on, the Report makes a strong appeal to teachers to carry on the ennobling work of moral education, "for it is a question of the cultivation of the conscience." Temperance teaching receives great attention, thrift is encouraged, and school savings banks are numerous, while mutual help societies are popular and growing institutions.

So much importance is attached to the proper teaching of morals by the French authorities that the subject in the Upper Primary Schools is always taken by the head masters. Under some conditions, as has been stated, it is the only duty he is called upon to perform.

Singing.—Singing is valued not so much for the pleasure derived from music as for its moral effect, and in the choice of songs those are recommended which treat of patriotism, nature, the home, etc. Hence, the words of a song are taught with as much care as the reading lesson. The teaching is usually by ear, and the singing is largely in unison.

Societies.

Societies.—Pupils' societies for inculcating thrift, similar to our savings banks, and for mutual aid, form part of the organisation in the French schools, and are very common in the large cities.

Aims.—The great aim of the French system, upon which the Government prides itself, is to form the man in the child, and then to prepare him for a practical life, and so the education while general in character has a moderate trend towards the technical side. With this end in view drawing and manual instruction are on the daily programme for all courses. The Government pays the instructor; the Municipality erects the workshop and provides the equipment; the pupil pays nothing.

Temperance Teaching.—France is making a great effort in her schools to combat the evil of intemperance. Teachers have been instructed to give the subject very special attention, and to emphasise the teaching anti-alcoholic pictures are used, and the formation of temperance societies encouraged.

The Practical Direction given to Teaching.—Seeing that a great number of French children will be occupied on the soil, decided emphasis is given to the teaching of agriculture, especially in the rural schools. The object of the teaching in the primary school is not to provide an apprenticeship as farmers, but by means of lessons, largely on the lines of Nature study, to cultivate the pupils' general intelligence, so that later on they may have some elementary knowledge of scientific matters connected with their occupation. The aim in giving this particular bent is the retention of the people on the land. The teaching of agriculture in the Upper Primary and Professional Upper Primary Schools is carried on in the most practical manner. The adaptation of the instruction to the prevailing local industry is a feature of the French school system.

Recreation.—The pupil in a primary school in France attends six hours daily, Thursday and Sunday excluded, usually from 8 to 11 a.m., and 1 to 4 p.m. The practice of granting the pupils five minutes at the end of every hour for purposes of recreation is almost general in the schools of the Continent. In France the practice is only applied to the junior classes. The seniors are allowed two quarter hours midway between the sessions. In French Switzerland some of the time between 11 and 1 o'clock is spent, in the summer session, in the swimming baths.

Corporal Punishment.—Corporal punishment is unknown in French schools. The discipline of the pupils is very satisfactory. Pupils are bright, active, and well behaved. The teachers control without difficulty.

General Inspectors.—The practice of changing the Divisions of the General Inspectors every two years has some advantages. There can be no doubt that the General Inspectors, with an experience, after many years' service in the various Divisions, must be in the position of very capable advisers to the permanent heads and the Minister of Public Instruction, on the general conditions of education existing throughout the country.

Inspectors.—The character of its inspectorial staff is vital to the well-being of any system of education, no matter how adequately the system fulfils, in other respects, approved theoretical principles. It may indeed be said that as is the inspector so is the system.

This vital interrelation of inspector and system is fully recognised in France, and so the method of appointment is one eminently designed to secure a body of ladies and gentlemen who have furnished incontestable evidence of the highest cultural and literary qualifications, and who, in addition, have a proved practical acquaintance with school work and organisation. The examination of candidates for the Primary School Inspectorship is, as we have seen, both literary and practical, and the standard is so high that but a small percentage of those who present themselves are successful; indeed, though candidates are considerably in excess of the number of vacancies, it has been frequently found necessary to hold special examinations. The result is that France has an inspectorial staff whose members are enlightened on all that pertains to pedagogical doctrine and practice, who are qualified to enter a school and furnish just criticisms and suggestions as to the methods employed, who by their ability command the highest respect of the teachers, and who, finally, by the high sense entertained of their office, inspire those teachers with an abiding interest and enthusiasm in their work. The

The widely attested devotion of the French public school teacher to his work may, for the most part, be attributed to the excellent Academy and Primary Inspectors, whose relations with their teachers are almost invariably those of a kindly and sympathetic adviser. The Commissioner was, unfortunately, unable to be present at one of the many conferences of teachers presided over by the Academy or Primary Inspector, but, from inquiries made, it is safe to say that the presence of either of those gentlemen, far from being a hindrance, is rather an encouragement to outspoken and unconstrained expression of views.

Promotions of Teachers.—When a teacher in France has obtained his "certificate of aptitude" he is not required to pass a further examination to qualify as headmaster of a primary school. His advancement then depends to some extent on seniority, but merit is the chief factor.

Summing Up.—The most important features of the French primary system of instruction may be summed up under the following heads:—(*a*) The work of administration—ministerial, inspectorial, and municipal. (*b*) Its unbroken continuity from the Maternal schools through the Elementary, Middle, Superior, to the Upper Primary schools. (*c*) The character of the instruction in the Infant School, notably the amount of informal conversational teaching. (*d*) The aims of the Primary School, practical while maintaining the general character. (*e*) The concrete basis of the whole instruction. (*f*) The great attention paid to manual instruction and drawing. (*g*) Specialisation and localisation of studies, as witness the character of the instruction in agricultural districts compared with maritime districts. (*h*) The aims of the Upper Primary School, education practical but not an apprenticeship. (*i*) The liberal scheme of scholarships, especially the provision made for advancing the education of lads in remote country places. (*See also* "Report on Paris Schools," Chap. X). (*j*) The special care devoted to the teaching of morals. (*k*) The supervision of private schools. (*l*) The absence of all formal examinations of schools for statistical results. (*m*) The character of the inspection—kindly, co-operative, and suggestive. (*n*) Excellent training system. (*See* Chapter XXXVI).

UPPER PRIMARY EDUCATION.

The next stage in the public educational system of France is upper primary education. There are two kinds of schools entrusted with this teaching—upper primary and cours complémentaires—and in them the children of the working classes get the finishing touches to their education. The cours complémentaires are advanced classes in some primary schools, and are established very much on the same lines as our own Superior Schools. The instruction in these schools is distinguished by its practical and utilitarian character, but it is not to be "confounded with apprenticeship. It remains a true education."

Headmasters' Duties.—Headmasters in these schools are relieved from the charge of a class, but must teach some hours every week, except in the large schools, where they are responsible for the moral and civic instruction only. In our own large schools, headmasters are held responsible for the work of their schools at the same time that they have charge of classes. Some arrangements have recently been made to free them from the responsibility of a class, and give them time to supervise the general work of their schools. The change is decidedly in the interests of the system.

Scholarships.—The scheme of scholarships is another proof of the paternal regard of the French people for their public schools. Our own liberal scheme compares most favourably with that of France in respect to bursaries and scholarships, and many cases can be cited where poor boys, through the generous endowment of our State, have been enabled to pass on to the secondary schools and the University.

Character of Instruction.—The character of the instruction in upper primary schools is very practical, and is made so in the interest of the pupils of the labouring classes. Statistics show that a large majority of the pupils in French schools follow up agricultural, commercial, and industrial work.

Courses

Courses in Upper Primary Schools.—Pupils enter the upper primary schools on procuring the leaving certificate, and taking one year of the superior course, at about the age of 12 years; and in their second year, nearing the age of 14, they elect, with the knowledge of their parents and the advice of the teachers, to follow one of four courses—general, agricultural, commercial, industrial. The subjects of instruction are arranged to suit the particular courses chosen, as may be seen by referring to the comparison of timetables in Chapter XIV. A glance at these tables will show at once the difference between the curricula of the Superior Schools of this State and the Upper Primary Schools of France, and will demonstrate the advantages which the French boy possesses in the choice of studies offered.

Professional Primary Schools.—In addition to these two classes doing advanced primary school work, professional upper primary schools are established in the large cities. These are not now controlled by the Minister of Public Instruction, having been transferred to the Minister of Industry and Commerce in 1893. Their aim, as will be readily seen by a reference to the timetable, is distinctly practical, and the authorities openly state that they are intended to train pupils for immediate employment at the "counter and the workshop."

Instruction to Girls.—The instruction in girls' upper primary schools is almost identical with that on the boy's side, the exception being that the mathematical subjects are modified, and agriculture gives place to horticulture. The subjects peculiar to girls' schools, housekeeping, cookery, etc., are taught both theoretically and practically.

In connection with any changes to be effected in the organisation of our Superior Schools the French system of upper primary schools should be very carefully considered.

THE PUBLIC SCHOOLS OF PARIS.

These in their general organisation are like the schools already described, but the citizens of Paris have very high ideals of public school education. The work of primary education is practically handed over to the Municipality, which has nobly responded to the trust. The most prominent feature of its management is seen in the character of the schools, which are magnificent, well-equipped buildings, containing the most up-to-date improvements. These have already been erected at considerable cost to the citizens, but so impressed are they with the necessity for progressiveness in educational matters that they propose to raise a loan of nearly £2,500,000 to further improve and equip their schools.

The question of the numbers in a class to be taught by one teacher is a matter which has been studied by the Paris School Authorities, with the result that the classes are limited to between forty and fifty pupils.

Special teachers are employed to give instruction in drawing, singing, physical exercises, and manual work.

The systematised scheme of the Municipality in regard to benevolent activities has no counterpart in any other city, and such institutions as the "School Colonies" and "Classes de Gardes" are worthy of the greatest admiration. The vacation schools serve a good purpose in France and other countries, where the holiday is about two months in duration; but their establishment in our own State is not necessary, as our vacation is comparatively short, and only sufficiently long to enable a boy to seek change away from his home.

The Ex-pupils' Associations so prevalent in the schools of Paris are organisations like our Old Boys' Unions, but have a wider sphere of work. The Mutual Benefit Associations are unique institutions.

Advanced instruction is provided for in forty-five schools, with complementary courses, seventeen for boys, twenty-eight for girls; in seven upper primary schools, five for boys and two for girls; and in twelve professional upper primary schools, six for boys and six for girls. Evening classes for those who leave school early are numerous. At the head of the whole primary system in Paris stands the College Chaptal, a great primary school giving a secondary course of instruction.

The

The system of bursaries in Paris is on a scale of munificence only second to the generous endowment of its schools. Some interesting statistics are furnished at the end of Chapter X.

In the rapid delineation of the Paris system of Primary Education, only those features have been touched upon which had not already been dealt with in a previous section of this report; innumerable details of interest have been necessarily omitted. Sufficient has been given to demonstrate the prodigious activity of the Authorities in all the spheres of school, after-school, and auxiliary work. Indeed it may be said that if the French were slow, compared to their German neighbours, to recognise the vital relevance of education to the national well-being, they are now fast making up the lost ground.

In Paris, as in the rest of France, that characteristic of French genius which expresses itself in logical order and symmetrical arrangement has embodied itself in the establishment of a vast system of Primary Education closely inter-related and continuous, which is designed to meet the varying demands of the people. With its liberal scheme of bursaries, in its subsidies to the innumerable Associations of Patronages, by its Evening and Vacation Classes, its School Colonies, Dispensaries, Cantines, &c., the Paris system displays a generosity, a sympathy with the needs of all, and a modern-day wide-awakeness, which eloquently testify to the higher sense entertained by the Authorities of the scope and value of education.

PRIMARY INSTRUCTION.

United Kingdom.

The Board Schools of Great Britain are divided into infant, elementary, and higher grade. The schools are graded in seven standards, each representing a year's work, and pupils enter the first standard from the infant schools about the age of 7 years. Under some Boards pupils pass into the higher grade after completing fifth standard, whilst under others they are not admitted to the higher grade until the seventh standard has been completed. As a rule on the completion of the work of these standards, pupils are promoted to the advanced classes, but in some places the higher grade schools are centres for districts, and competitive examinations are held for admission. Admission into higher grade schools of Scotland is by means of the merit certificate (*see* Chapter XII). The higher grade schools of the United Kingdom, while giving a general education, aim at preparing their pupils for the duties of life, and hence their teaching has a tendency towards the practical side. A study of their programmes of work shows that the courses most favoured are science, commerce, industry, and art. London schools give most attention to the teaching of drawing, manual work, and a few commercial subjects; the higher grade schools in the towns of the provinces and in Scotland are strong in their science, manual instruction, and commercial subjects. A time table of the work of one of the higher grade schools of England appears in Chapter XIV. In some schools the education of the sexes is carried on in the same rooms with the best of results, and it may be said that co-education is favoured by the majority of teachers. Education in the higher grade schools is generally free, and where a charge is made, the fees are only nominal, viz., 30s. a year. The course is for three years, and a very satisfactory percentage of the pupils remain to its completion, about their 17th year.

Scholarships and Certificates.—In Scotland pupils in the higher grade schools are sufficiently educated to take the lower leaving certificate (*see* standard of questions in Chapter XII), and their training fits them to become pupil-teachers under the shortened course of training, viz., two years. In England the higher grade pupils at the end of their school course compete for bursaries which qualify for admission into secondary schools; for various scholarships, as the Oxford and Cambridge Local Examinations; and for the London Chamber of Commerce and other certificates. In some higher grade schools in England, pupils are prepared for admission into the day training colleges of universities without undergoing a term of pupil-teachership.

The Staff.—All the higher grade schools have staffs of men and women specially trained for the different subjects taught. Many of the teachers in every school are graduates of some university, and the majority hold teaching certificates. In Bruntsfield School, Edinburgh, every member of the staff is a university graduate, and specialists are employed in teaching domestic economy, manual instruction, singing, drill, and swimming.

Buildings.—The attendance at the higher grade schools is generally large, and the buildings are great structures, usually of three stories. The class-rooms are on the principle of single rooms, and are well provided with furniture and wall decorations. With such a liberal list of practical subjects, one would expect to find in these schools suitable laboratories and workshops for the teaching of science and manual work, and he would not be disappointed, for in all the schools the equipment is very superior. Photographs and plans of buildings appearing in Chapters XI and XII will give some idea of the organisation of higher grade schools in the United Kingdom. There is nothing special to comment on in the playgrounds.

There is no superior school in New South Wales with an equipment equal to that of any one of the higher grade schools of the United Kingdom. The seating accommodation is much better than with us, the dual seat with proper support to the back being far more comfortable than the long form in general use in our schools. The single class-room is to be preferred to the long room for obvious reasons. It has been noticed that glass partitions are now placed in all the new school buildings of the State; but this arrangement, though an improvement on the long room, is not so good as the separate class-room. The laboratories, workshops, and art-rooms of the higher grade schools of the United Kingdom, not in every school but according to specialisation, and the teaching given in these buildings, are among the best features of primary instruction in the old country.

In any development of specialised courses of instruction in this State some good ideas of organisation can be got from such towns as Birmingham, Manchester, Leeds, Edinburgh, Glasgow. The limiting of the numbers in a class to thirty pupils, and the appointment of specialists in the higher grade schools of the United Kingdom, are matters which might well receive our attention. The system of merit certificates for primary instruction, and leaving certificates for higher grade instruction, produces good results in Scotland, and would be worth introducing into our own system.

AMERICA.

Courses.—There are two distinct kinds of schools in the United States of America engaged in primary instruction: the elementary, in which children from 6 to 10 years of age are found, and the grammar, for pupils from 11 to 14 years of age. The grammar school, as regards the extent of its curriculum, cannot be compared with the upper primary schools of France or our superior schools. Its course is limited, and there is no place for geometry, algebra, or Latin; but in some schools a modern language is taught. A movement has been started to shorten the primary instruction course, and to introduce in the last year the subjects mentioned above, with a view to the earlier admission of pupils into the high schools. America has no system of upper primary schools, but in her high schools she gives her pupils facilities for an education more advanced and more secondary in character than that provided in either upper primary or higher grade schools.

Buildings and Furniture.—The school buildings are very fine, modern, structures, and are constructed on the separate class-room principle, with accommodation in each room for about fifty children. The desks are either single or dual, and are of very good type, though not equal to those in use in Switzerland.

The long form which holds from six to ten pupils, and which gives no support to the back, is not known in American schools. It seems to be a permanent part of the equipment in the State schools of New South Wales. It certainly is a very inexpensive method of seating; but if the form is unhygienic, and there can be little doubt of this, it should be abolished. The Canadian schools are supplied with desks and forms constructed on a very hygienic principle, provision being made by which they are adjusted to the needs of the pupils.

School

School adjuncts.—The mural decorations in the American class-rooms, the class libraries, the societies for mutual help and instruction, and the collections for Nature study, are all attainable and possible where the separate class-room prevails.

Discipline.—The pupils in American schools are very amenable to order, and at their work shew more earnestness than our own boys. Co-education is very general, and women teachers are in the majority. Corporal punishment is not forbidden as it is in France, but is only resorted to in flagrant cases. Fire-drill is given occasionally in schools situated in very densely-populated areas. The practice would be of but little use in our city schools, as most of them are well isolated, and we do not house our pupils in lofty buildings.

Moral teaching.—A very strong point is made of the teaching of morals and manners in all the public schools of America. The people are proud of their public institutions; and a healthy public opinion, which influences the younger members, is noticeable in every community. Closely connected with the splendid ideals of moral teaching is the sentiment of patriotism, which is taught systematically in the primary schools. The national flag is regularly saluted, the pledge repeated, and the true meaning of the ceremony fully explained. Canadian primary schools have a similar ceremony, in which the Union Jack is the central object.

Physical training.—Gymnasiums are attached to some of the large primary schools; but the best physical training is that gained in the open air. Cadet corps do not exist in the schools of the States, but in Canada the movement has met with much success.

Special School.—A special school for lads engaged in selling papers or wares in the streets, exists in Toronto. A minimum daily attendance of two hours is fixed, and the instruction is thoroughly practical. The school is a great success; a good attendance is maintained without difficulty and with no inconvenience to the public. A school of the same kind in Sydney is much needed.

Every one will admit that our State system of primary education is capable of improvement, and comparing it with other systems it may be said that, while there are good features in our work, some important changes should be introduced to bring it up to the standard of what is best in other countries.

Organisation.—Dealing in the first instance with school buildings, the plan of separate class-rooms to accommodate between forty and fifty pupils *at the most* should be adopted, and single or dual desks and seats of the most approved hygienic type should be supplied. The long desk and form at present in use in the great majority of our schools are not only obsolete but dangerous. The lighting and ventilation of the rooms in the older school buildings are very imperfect, but it has been noticed that in the more recent structures, such as the additions to Kogarah, Marrickville, Chatswood, and the new school, Crystal Street, Petersham, the buildings are well arranged for obtaining light and fresh air. In the construction and arrangement of the private conveniences our system, compared with other places, admits of little improvement, but it is to be remarked that in many towns careful provision is made for privacy by means of separate semi-enclosed compartments.

School Courses.—The courses for the two divisions of infants are different in regard to time, one extending over four half-years, the other over three half-years, and as the standard of proficiency is almost identical in each, they should be identical in point of duration. An alteration is also recommended in the primary course, which should be made to include the work of six classes, with half-yearly programmes, instead of four classes as now, an arrangement which would get rid of the long period in third class. When a pupil completes his fifth year in the primary course he should be fit for promotion to the superior course.

Standards:

Standards: Kindergarten.—The standards of instruction require remodelling. Instruction in kindergarten is at present confined to very few of our infant schools, and one of the first changes to be considered should be the introduction of the subject into all infant schools. Our ideas of the furniture necessary for this work are erroneous. The costly cedar desk with its ruled squares and the awkward gallery are both unnecessary. Low flat movable tables and little chairs would do for all purposes of written work. It is a mistake to coop up the child in fixed desks for hours together; what is required is that the little ones should have airy rooms with plenty of space for movements and games. Pending the establishment of a training college for Kindergarten, the Hurlstone students should receive regular instruction in the theory and practice of the subject.

Manual Instruction.—This work does not get sufficient attention in the second and third classes of our schools, and no systematic instruction in the subject, exclusive of drawing, is attempted. The manual training workshops in the city are attended by a few hundred boys at the most, and, while the instruction is both educative and practical, its usefulness is greatly circumscribed. The instruction needs remodelling entirely. Hand-and-eye training of some kind, in addition to drawing, should be made compulsory in all second and third classes. Manual training, such as modelling, working in wood and iron, etc., should be provided for fourth class boys, and for those boys in the superior schools who have a leaning towards industrial occupations. In every class the educative value of the teaching should be emphasised. The instruction should be free, and the State should supply all tools and materials. The provision made for teaching the subject to girls is superior to that provided for the boys. Our cookery schools are a credit to our system. The introduction of other features of domestic economy, not as additional subjects, but as part of the domestic science course, is advocated.

Superior School Standards.—The instruction in our upper classes gives but little preparation towards commercial, agricultural, or industrial life. Within the last year or two a few teachers of superior schools have introduced commercial subjects into their programme, and have employed specialists to teach the mechanical branches after school hours; but no general scheme of elementary commercial teaching exists. Classes should be established in superior schools in which a preparation might be given for commercial life.

The teaching of elementary science—physics and chemistry—has not the place in our system which is assigned to it in the higher classes of schools in the United Kingdom and France. In the schools of these countries systematic courses of instruction in the subject are provided for the pupils, and experiments are carried on in splendidly-furnished laboratories. The proper equipment of science laboratories, even for elementary teaching, is a matter of considerable expense, and therefore the number of such establishments must necessarily be limited, but provision should be made for instruction in the subject in all important centres.

The subject of drawing requires our most careful attention. The syllabus needs a complete remodelling from the lowest to the highest classes. The work accomplished in the London Board Schools (*see* syllabus in Chapter XX) would form a guide for us.

The teaching of agriculture, especially in rural districts, is a subject of sufficient importance in our State to interest those engaged in education. The instruction should be educative and closely correlated to elementary science and Nature study. Great prominence is given to agricultural teaching of this character in many continental countries.

Superior schools with classes for general education would form the link between primary and higher secondary education. The schools adopting special courses would lead up to technical, commercial, and agricultural colleges.

XII.

TRAINING SCHOOL SYSTEMS.

[J. W. TURNER.]

The countries with a pupil-teacher system are England, Scotland, and Ireland.

System in England.—The chief features of the English system are :—

Government by School Boards.
Five years' course, starting about 14.
Professional training in day schools.
General education in pupil-teacher centres.
Teaching responsibilities only in later years of apprenticeship, and then with small classes.
Preparation for King's scholarships, which admit to training colleges.

System in Scotland.—Chief features :—

Government by School Boards.

Three classes employed—

(*a*) Monitors, entering at 13 years.
(*b*) Pupil-teachers, taking a four years' course, commencing at 14.
(*c*) Pupil-teachers, taking a two years' course, commencing at 16, and possessing higher grade or secondary school certificates.

No responsibility for classes, but sections taught under supervision.
General education in pupil-teacher centre (exceptions).
Preparation for King's scholarships.

In some towns the professional training of pupil-teachers and their general education are carried on in the day school, but there are pupil-teacher centres as in England. In towns without centres the head-masters are responsible for the general education of the pupil-teachers, and are expected to devote nine hours each week to the work, outside the regular school hours. This is the practice in the city of Edinburgh, and is almost identical with that which obtains in New South Wales.

System in Ireland.—Chief features :—

Two classes employed—

(*a*) Monitors, 13 years old, with five years' course.
(*b*) Pupil-teachers, 16 years old, with two years' course.

General education given in day schools after school hours, nine hours each week.
No responsibility for classes, but small sections taught under supervision.
Preparation for King's scholarships.

System in New South Wales.—Chief features :—

Age of admission, from 14 to 18.
Four years' course.
Responsibility for classes throughout the course.
General education given in day schools—minimum instruction, one hour each day.
Preparation for entrance examination to training schools.

Of the three systems in the United Kingdom, that of England is the best organised. It provides a superior preparation for admission into the training colleges, but it does not give the best training for practical teaching. The pupil-teacher centres are very fine institutions, in which the pupil-teachers make half-day attendances.

The

The centres are not concerned with the professional part of the pupil-teachers' equipment. This is obtained during half-day attendances in the primary schools to which they are attached. The professional training of pupil-teachers is the work of the head-teachers in the primary schools, but although the latter are freed from the responsibilities of teaching a class, they find that the general management of their schools demands so much of their attention that it is not possible for them to give sufficient time to the supervision of the pupil-teachers. The half-time principle does not, in the opinion of many, provide a thorough practical training for pupil-teachers.

The systems in Ireland and Scotland, while on the whole not equal to that of England, the employment of monitors being a great blot, have some good features, the best of which are the amount and character of the professional training which is given in some schools, in teaching sections of classes under the supervision of the head-masters, and the admission, to a two years' course, of candidates of maturer years with a higher grade qualification.

Opinions of the System.—Public opinion with regard to the pupil-teacher system varies, but there is a large and increasing section of inspectors and teachers who are either opposed to it right out or who advocate radical alterations in it. Mr. Coward, speaking as President of the National Union of Teachers, England, says that the system has to continue—"amended, under new conditions, with different conceptions of its aim and scope." (Chapter XXX.)

Mr. Hughes says that "the system is slowly disappearing from the English schools, and that it is not even economical, much less efficient."

The Rev. E. F. A. MacCarthy, Chairman of the Birmingham School Board, quotes in his annual address, 1900, the following words from the report of a Departmental Committee on the pupil-teacher system (1898): The system "has some merits as well as many defects; its defects are so serious that they hope to see early measures, by legislation and by administration, taken by the Education Department towards its ultimate complete reformation." In December, 1902, the complete reformation had not yet taken place, but a fine class of girl candidates from the higher grade schools, well prepared in general subjects and specially trained in elementary science, was seeking admission to the pupil-teacher ranks in Birmingham. The time-table and curriculum of the pupil-teacher centre in that town appear in Chapter XXX.

It was observed that in some schools in the large provincial towns of England, even where pupil-teacher centres existed, pupils remained on in their classes to the age of 17 years, and, without serving a term as pupil-teachers, entered the day training colleges attached to the Universities to qualify as primary school teachers. This method of training has many supporters in England. It is argued by them that it is wrong to require children of the ages of 13 to 15 or even 16 years of age to teach, and that such children would be better employed in learning in their class the subjects necessary as a preparation to become teachers. The age of 17, advocates of this system contend, when the pupil is physically and intellectually better equipped, is quite young enough for him or her to start learning the duties of a teacher; and even entering at this age, those who favour the system maintain that, while it is advisable during the period of training that frequent opportunities for gaining practical experience should be given, nothing in the way of responsible class-teaching should be imposed.

TRAINING COLLEGES, UNITED KINGDOM.

The King's Scholarship Examination, which is held by the Government for the selection of candidates for admission into training colleges, is competitive, and is taken by pupil-teachers on the completion of their course. There are three grades of passes; but as the accommodation in the training colleges is inadequate for all the successful candidates, only those who gain first or second passes are eligible to enter. All who pass the King's Scholarship Examination are certified as assistant teachers, and may qualify for the certificate examination without attendance at a training college.

Under the New South Wales system, the final examination of pupil-teachers is at the end of their fourth year of service, provided that they have successfully passed their yearly examinations. The examination is competitive, and the first fifteen of each sex on the list of successful candidates receive scholarships of the value of £72 per annum. The next ten of each sex receive half-scholarships of the value of £36 per annum. In the case of female students, for whom a residential training school is provided, board and lodging are provided in lieu of salary, and an allowance of £1 and 10s. per month respectively is made. The remaining candidates are permitted to attend the training schools at their own expense, and are allowed all the privileges of those holding scholarships and half-scholarships. Those who do not enter the training schools are employed as ex-pupil teachers, and receive appointments to small schools or positions in the country as assistants.

England.—There are two kinds of training colleges for primary education in England—residential, which are private institutions chiefly connected with denominational bodies; and day, which are unsectarian, non-residential (but students must lodge in approved buildings), and are attached to a University. The Government has no training colleges, but subsidises the two classes mentioned. The annual grant to residential colleges is £50 per annum for each male student, and £35 for each female; to the day training colleges the amounts are less. No salary is paid to the students. The day training college, in addition to normal school courses, affords opportunities to the best students for a University training. The day college is much in favour with King's scholars, particularly in the large provincial towns, and with many educationists who desire to bring primary education into close touch with the University.

Two types of English training colleges are described—one residential and undenominational, the other a day training college. The scope of the work in the residential college is set out fully; its chief features are the drawing syllabus, syllabus of manual instruction, course of general science and Nature study, extended course of general science. The general course is for two years, but a third year is added for the best men.

Ireland.—The Government has one training college under its direct management, and subsidises others. The Government training college has two courses—a two years' course for King's scholars, and a one year's course for principals, assistant teachers of national schools, and University graduates. The college is non-residential, but students are boarded and lodged free of expense, out of the annual grants for King's scholars, in hostels supervised by the principals. The sexes are taught separately. The "Example School," which is attached to the Model School of this college, affords good practice in the art of teaching and class management. The arrangements in the college for teaching science, drawing, and agriculture, are very good.

Scotland.—The training colleges in Scotland are denominational institutions, but are under Government inspection, and are subsidised by the State. Four classes of candidates are admitted:—

1. Those with a matriculation certificate or the corresponding Leaving Certificate. (Chapter XII.)
2. Pupil-teachers with Higher Grade Leaving Certificate, or the Matriculation Certificate of any Scotch University.
3. Non-pupil-teachers with Higher Grade Leaving Certificate.
4. King's scholars.

King's scholars, who have taken a matriculation pass, enter at once on a graduation course at a University, and are allowed a reduction of time in their professional work in the college. The colleges are non-residential, but females residing away from their homes must live in boarding-houses certified by the college authorities. The usual course is for two years, but a third year is granted to students who show special merit. The syllabus of the Glasgow United Free Church Training College is given in full. The main features in the curriculum are drawing, manual instruction, and general science.

America.—Admission to the training colleges of America is by examination, and candidates must have completed a four years' course at a high school. There is no special preparation, either academic or professional, for the office of teacher. The examination questions given in Chapter XXXIII were set for the entrance examination to New York Training College in January, 1903. They indicate the standard expected from candidates seeking admission. The chief features of the American training colleges are—

A course of two years—generally divided into four half-yearly periods.
Free tuition, but no scholarships.
Comprehensive pedagogical training.
The time devoted in *learning to teach.*
The means adopted for giving practice in teaching.
The excellent treatment of Nature study and elementary science.
The special courses for teachers of kindergarten and college graduates.
The organisation and equipment.

The training school systems of America are in striking contrast with those of the United Kingdom. In American normal schools the student is just commencing to learn how to teach when the British pupil-teacher is about finishing his apprenticeship. The British pupil-teacher, between the ages of 14 and 18, receives a good general education in the pupil-teacher centre, attending one-half of each day, and some professional training during the other half; but the American student spends the whole of this time in acquiring a knowledge of the subjects taught in the high school. For two years more the British student adds both to his academic and professional knowledge; the American student devotes the two years to an exclusively pedagogical training. The great strength of the American training systems lies, in the first place, in the educational status of the candidate at the time of admission, and, in the second place, in the character of the practical training and in the comprehensiveness of the syllabus, which realise some of the best ideals of education.

Canada.—Canada has not the pupil-teacher system, but has training schools to which candidates are admitted between the ages of 17 and 18. The courses are short and the training professional. In the Province of Ontario there is provision for preparing teachers for elementary classes in training schools attached to Model Schools. The course in this class lasts only four months, and on its completion the students receive appointments to elementary schools. Provincial Normal and Model Schools exist in the important cities of the Province, and among the candidates are teachers who have already had some experience in the elementary schools. The course is for six months, and is confined to professional subjects. The Normal Training College receives candidates of not less than 18 years of age, who hold the qualification of a senior leaving certificate from a Canadian high school, or that of a graduate in Arts of any University in the British Dominion. The course lasts eight months, and the training is professional in character.

France.—Candidates for admission into the French training schools must hold the brevet élémentaire, which is merely an elementary certificate of upper primary school work. They are admitted on the results of a competitive examination, but not before the age of 16. The French authorities recognise that they are not getting the best class of candidates into their training schools, and steps have been taken to render the teaching service more attractive to the better pupils who pass through their splendid upper primary schools. In our own State, the better boys are not always attracted to the ranks of teachers. If in the Government Service, they are not found in the employment of the Department of Public Instruction as teachers. There can be no satisfactory settlement of this question until the teacher of every grade gets equal rights and recognition with other branches of the Public Service. It seems anomalous that trained teachers of eight or ten years' standing, or even less, should be promoted to other Departments. After spending a large amount of money on these young persons, with a special object in view, the State cannot afford to lose their services as teachers. They naturally accept the new position, with its increased emoluments and opportunities for promotion, without hesitation; but there should be no reason for them to leave the

the service for which they were specially trained, because it should afford them equal advantages with other Departments. The position of this class of teachers demands earnest consideration, for the success of the system is largely dependent on a contented service.

The most important features in the training schools of France are :—

The work of the practising school, especially the character study of the individual child.
The course of three years—academic and professional.
The pedagogical instruction.
The instruction in physical and natural science, hygiene, and agriculture.

PUPIL-TEACHERS, NEW SOUTH WALES.

Our own training system now comes under review, and it must be stated that it occupies an unsatisfactory position in comparison with systems investigated in the United Kingdom, Europe, and America. Compared with countries where pupil-teachers are employed, our system makes inadequate provision for teaching its pupil-teachers the ordinary subjects of instruction. The pupil-teacher, entering as he usually does about the age of 14 or 15 from our Superior Schools, must be carefully instructed throughout his course, and this instruction, which must not be less than one hour daily, has to be given by head teachers and mistresses outside school hours. The ordinary hours of teaching commence at 9 o'clock and last till after 4, and as the work needs almost continuous application from all teachers, the extra hour's instruction comes at a time when all are more or less jaded, and unfit for further mental effort. The teaching has been described as inadequate; and in saying so, no reflection on the teachers giving it is intended. Teachers cannot be expected to do the work of a pupil-teacher centre with its staff of specialists and its superior science equipment. There is no comparison between the general attainments of a boy taught in a pupil-teacher centre and one taught by the teachers of a day school. The only places in the United Kingdom (in so far as came under observation) in which the instruction is given by the day-school teachers are in Ireland and in the city of Edinburgh. The head teachers of that city, dissatisfied with the practice, are moving for the establishment of a pupil-teacher centre. Our system then, in this respect, suffers by comparison with those countries where pupil-teacher centres exist. Another essential point of difference between our system and those of other countries is to be found in the amount of teaching expected from the pupil-teacher. In New South Wales he teaches full time daily in charge of a class, but if he is a beginner he receives much kindly assistance from his principal. At the same time he is on the regular staff and is responsible for his class. The pupil-teacher in the United Kingdom, where centres exist, attends on half days only at the day school, and is not responsible for classes until the latter part of his term. This arrangement, it has been stated, does not give entire satisfaction, because the pupil-teacher cannot be always profitably employed. The fact remains, however, that the pupil-teacher in New South Wales has a more responsible position than the pupil-teacher elsewhere.

The system of pupil-teachers in New South Wales is defective in the following respects :—

(*a*) The age of admission of candidates as pupil-teachers.
(*b*) The standard of their attainments on admission.
(*c*) The practice of making youths responsible for teaching.
(*d*) The practice of daily instruction *outside ordinary school hours.*

TRAINING SCHOOLS, NEW SOUTH WALES.

The training schools of New South Wales are two in number, residential for females and non-residential for males, and are under the direct control of the Minister of Public Instruction. Three classes of candidates are received into them —scholarship (30 in number), half scholarship (20 in number), and non-scholarship candidates, and only those pupil-teachers who pass the entrance examination are admitted. The term of training lasts for one year. In the Training School for male

male students, Fort-street, the course of study is the first year in Arts of the Sydney University. All the students are taking the course this year, but only a few of them have matriculated. The professional training consists of lectures in the art of teaching and practical work in the practising schools. Special teachers are engaged for drawing, manual instruction, music, physiology, and drill. In the Training School for female students, Hurlstone, Ashfield, the course of study is the standard of matriculation, pass work, Sydney University. The professional training consists of lectures in the art of teaching and the management of classes in the practising school. Special teachers are employed for drawing, music, drill, physiology, kindergarten (theory), and cookery.

Buildings.—The accommodation at the Training College for Male Students consists of a class-room to seat about thirty-six, and a small retiring-room. The practising-school is an unsightly wooden structure, large enough to work three classes comfortably. There is no provision whatever in the institution for teaching science, but students visit the Technical College one hour each week for instruction in physics. The buildings are totally unfitted for the work of a training school, and laboratories, museums, gymnasiums, which are prominent features in most schools abroad, do not exist. The Training College for Females is beautifully situated on the heights of Ashfield, in spacious grounds well laid-out; but the rooms, while not so unsatisfactory as at Fort-street, are small, and, with the exception of the practising school, very unsuitable for training school purposes. There is no science equipment.

Courses.—The courses of study in our training schools are too comprehensive for one year's work, and it is felt that the professional part of the training—the lectures on the art of teaching, and the work of the practising school—suffers in consequence. If both sides of the training course are to be carried on together, the academic and the professional, the term should be extended to two years. Such an extension would allow for the arrangement of a complete course in pedagogy. In the English Training Colleges, whose students at the time of admission are better prepared than is the case with us, the courses are for two years. In the Scotch Training Colleges, which students in many cases enter with matriculation passes, the courses are for two years, and in the American Colleges, which train only for professional work, the courses are also for two years.

Staff.—The staffing of our training schools is altogether inadequate. At the present time there are over seventy students in Hurlstone Training School—a number too great for any one lecturer to teach properly. Under existing conditions, the staff should be largely increased, and with any extension of the scheme, such as the provision for the teaching of science and pedagogy, additional lecturers must necessarily be appointed. The duties of principal of a training school are sufficiently onerous to engage his whole time.

Three kinds of training school systems have been described in the chapters on training schools:—

(*a*) A pupil-teacher course (starting at age of 14), followed by a training school course, including both academic and professional subjects.

(*b*) A secondary school course of general education (starting at age of 18), followed by a purely professional training.

(*c*) A secondary school course of general education (starting at age of 17), followed by a normal course at a University.

The first system is common in the United Kingdom, and our own training schools come under it; the second system is general in Europe and America; the third is growing in favour in England, particularly in those towns with modern Universities. After a most careful investigation of the three systems, based upon personal observation in each case, the Commissioner gives his opinion in favour of the third system, with some modification. He has come to the conclusion that the system where youths of immature age, whether pupil-teachers or monitors, are employed to instruct their fellow pupils, or are made responsible for the progress of classes, is entirely wrong. He therefore is opposed to the system of pupil-teachers. The second system supplies a good training for teachers who will engage in elementary

elementary primary instruction, but it makes no provision for brilliant, ambitious students who are needed for upper primary work. In this respect it would not suit our State, because it is necessary for us to train our students to fill positions in our Superior Schools. The third system—with the following modification—is recommended in place of our present system :—

(*a*) Standard of admission—The leaving certificate of a Superior or High School (such as the Scotch leaving certificate) ; candidate about the age of 18.

(*b*) *Two years' training—general and professional—in a normal school, under the Department of Public Instruction.*

(*c*) A University course for the best students on the completion of the normal school course—the whole time to be spent in University work.

The scheme would afford a suitable training for that important class of teachers, those responsible for the success of primary instruction, and also provide the staffs necessary to carry on the work of Superior Schools.

Admission to the normal school should be by competitive examination. The allowance should be sufficiently liberal to attract the better class of candidates. Every student should matriculate not later than the second year of the course. An examination should be held at the end of the term for provisional certificates and promotion to the University.

The alterations proposed in the training system are enumerated in the following statement :—

A. Abolition of present pupil-teacher system.

B. Establishment of normal school system with the undermentioned features—

1. Two years' course.
2. Complete course in pedagogy.
3. Course in science.
4. General education.
5. Professional training.
6. Manual training.
7. Physical training.

C. Erection of new buildings for normal schools—day classes—with complete equipment for above-mentioned courses.

D. Adequate and suitable staffing.

The question of providing teachers for small schools in outlying districts of our State still remains for consideration. The matter is one of difficulty which cannot be overcome by the establishment of a normal school. The present arrangement is not satisfactory, and in its place it is suggested that the scheme of training in District Model Schools, which prevails in parts of Canada, be substituted. The District Model Schools which are to form part of our national system before long will make very suitable institutions for training candidates for small schools.

XIII.

SCHOOL ATTENDANCE.

[J. W. TURNER.]

Statistics show that irregularity of attendance in our State Schools has been, and still is, very prevalent. This fact is well known to the permanent heads of the Department of Public Instruction, who from year to year have directed attention to the grave defect in our system, and suggested means of removing it. This condition of things is due to the indifference of parents and to defects in the compulsory clauses of the Public Instruction Act. The apathy displayed by parents is deplorable. Many children are kept away from school half-days and whole days for the most trivial of reasons, and others never enter a school from January to December. So long as the former make seventy days attendance in a half-year they satisfy the provisions of the Act, and as regards the latter, they are not interfered with in any way. The feeling in the community, and this statement is made advisedly, is not sufficiently appreciative of the importance of regular school attendance

attendance. This opinion is forcibly impressed upon one's mind after visiting such countries as Switzerland, Holland, and France. In the schools of the first-named country, with their early hours of attendance in some cases, and their long hours of regular school-work, punctual and regular attendance is considered a sacred duty by the parents. It is not to be inferred that there is not a redeeming feature in our school attendance. There are many schools, and many parents in this State, with just as high conceptions of duty as those attributed to the Swiss; but it is patent to every one who moves through the streets that we have an undesirable class growing up in our midst, receiving no education whatever, and forming a menace to society. For this class, and for those who attend school in broken periods, with no satisfactory reason, an immediate amendment of the compulsory clauses is imperative.

The amendments which the Chief Inspector set forth as necessary in 1895 (Chapter XLIII) are equally applicable to-day. To these suggested amendments one other of great importance may be added, viz., the abolition of a minimum period of attendance, so as to deal with cases of default from day to day. Under existing provisions the case of a defaulter cannot be dealt with until months elapse, and in consequence he can continue his irregular practices for long periods. The provision to deal with children not in attendance at any school, especially those found in the streets during school hours, is the most necessary of all the amendments, and the most vital in the best interests of the State.

Following upon the amendment of the compulsory clauses of the Act, the whole scheme of school attendance should be reorganised, and, for the guidance of those who will have to undertake the work, the plan adopted by the School Boards of England is recommended. For the proper working of the proposed scheme a sub-department should be created, and placed under a capable organiser, with an efficient staff.

Under the English system, the practice of returning defaulters' names at the end of half-years and dealing with their cases months after the period of their default, is not known. In the Board Schools *the maximum attendance is expected.* The matter of attending seventy days as a minimum in a half-year, as with us, or any other specified minimum, has no place in their system. With them *the time during which every child must attend school is the whole time for which the school is open.*

The compulsory clauses and the discipline of the English school are both directed towards maintaining a full school attendance. In our schools, the attendance particularly as the end of the week approaches, falls off, despite the best efforts of teachers, and Friday afternoon, in many schools, shows reduced numbers in the classes. This is really encouraged by the minimum standard fixed, for a boy only requires to attend a little more than an average of three days a week, out of five, to meet all the requirements of the compulsory clauses. With its abolition, and the substitution of the principle of dealing immediately with default, a marked improvement in attendance would soon ensue. The teachers in Great Britain, by means of this provision, are enabled to maintain very high percentages of attendance. A great personal effort is put forth by the teachers to secure the ten half-day attendances on the part of each pupil, and a spirit of emulation is encouraged, and a system of class rewards is practised to obtain the desired result. Head-teachers are specially instructed to acquaint the father, as well as the mother, of a child of its absence, and teachers must, in the first instance, use all persuasion in their power for securing an improvement in the attendance of irregular pupils. In some of the Board Schools, should the attendance in any one week fall below the general average, a list of the worst cases is prepared and forwarded at once to the attendance officer for immediate investigation. If the efforts of teachers and officers prove futile, a first notice, directing attention to the infringement of the regulations, is served on the parents. If this fails, a second notice, calling upon the parent to attend before a Committee and show cause why he should not be summoned before a magistrate, is forwarded, and should this be unheeded, a final appeal, pointing out the consequences of any further neglect, is issued. Should these appeals have no effect a direction to prosecute follows, and the defaulter is summoned to the ordinary police court. It will thus be seen with what vigilance the School Boards watch the attendance of their pupils, and with what tact they enforce the regulations. Prosecutions in this State in the case of those guilty of breaches of the compulsory clauses, are also conducted in the ordinary courts, but in some of the cities of America, a very wise provision has been made in the establishment of juvenile courts for the hearing of all such cases.

In

In New York the compulsory period of school attendance is from 8 to 16 years of age, but any child, between 14 and 16, regularly and lawfully engaged in any useful employment or service, is exempt from school attendance. The enactment is a wise one, and has for its object the satisfactory employment of a lad at a critical period in his life. It is matter for regret that in our own community too many boys about this age are not profitably occupied.

Truant Schools.—There are children in all countries who will not attend school unless under the severest form of compulsion. For these, truant schools are necessary. In England every important town has its institution for this class of children, and the general management in all is very similar. The Drury Lane Industrial School in the very heart of London, which provides in reality a *home* for children of the poorest classes, is a good type of the milder form of truant school. The discipline of the ordinary public school has no attraction for most of these boys, the instruction is distasteful and above their capacity very often, and attendance in consequence is irregular. They are, therefore, sent to such schools as Drury Lane, where they are fed, educated, and otherwise cared for. The school work is restricted to a plain education, in the ordinary subjects, and much attention is given to the industrial branches. This rational division of subjects supplies just the training necessary for this class. The success of such schools is entirely dependent on the discipline and tact of the staff. The children who attend them are not vicious, but they are wayward and peculiar. Harsh, unsympathetic, treatment would drive them away from the school, and yet at the same time firmness is necessary for successful management. The government of Drury Lane is sympathetic in character, and the success of the institution is evidenced from the fact that the reform aimed at has in many case been realised. An extract from the report of the Governor of the School is quoted here as being particularly apposite. "To educate and train these little arabs of the alley and gutter is the primary and proper mission of a day industrial school, and by lending them a helpful hand, and giving them a helpful life, there is abounding testimony that the School Board for London is diminishing the supply of 'hooligans' (our larrikins) by increasing the number of really happy, boyish boys, who eventually become honest, self-supporting men."

For the more incorrigible lad who will not attend the public school there are schools, termed truant schools, the management of which differs from the day industrial school in respect to the period of detention. A lad sent to the truant school remains there for about three months, at the end of which period he is licensed out to attend a Board School on the condition that he attends regularly. Should he fail to fulfil this condition he is readmitted to the truant school, where he is compelled to spend about four months. At the end of the time he is again licensed out to a Board School on the usual condition, and should he again fail to attend regularly he is sent back to the truant school for a longer period, generally about five months. It will be evident from the practice just described that great care is taken by the authorities to improve the character of the lad. The training consists of the ordinary school subjects in elementary standard, and instruction in technical branches by skilled trade masters.

The truant school does not give the freedom of the day industrial school. It deals with a different class of lads, and a form of discipline more severe, though just and kind, is maintained. In the Upton Road School, the dining-room, the kitchen, and the dormitories are all satisfactory features of the organisation, and the equipment includes a gymnasium, a fine swimming-bath, and hot and cold water baths. A fair amount of time is given to recreation, but study and work are very constant throughout the week. Special religious instruction is given by the clergymen of each denomination once a week, and the boys attend their respective churches on Sunday, under the supervision of teachers of like faith. In one of the truant schools it is noted that many friends in the city in which the school is situated take a special interest in the school, and invite the boys to social gatherings.

The necessity for establishing a truant school in Sydney has long been felt. Habitual truanting is far too common in our midst, and the only way to reduce the evil is as suggested. Amendment of the Act as indicated will result, there is no doubt, in a much improved attendance, but there are boys in our city for whom nothing short of the truant school will be a sufficient deterrent.

No

No reform can begin at the top, and as the reforms the Commissioner proposes to recommend must depend upon regular and full school-attendance as an initial condition, some new principles must be introduced into the present Public Instruction Act of New South Wales. Compulsory education, in its full, complete sense, must become a live and educative force before the higher developments of public education can be hopefully undertaken. The basical improvements, reduced to cardinal issues, are as follows:—

1. The abolition of a minimum attendance.
2. The provision of adequate means to secure full and regular attendance, and of corrective influences to such an end.

The present Amending Bill before Parliament contains all the essential provisions for effecting the improvements in question. The Bill abolishes the period of default, and provides for truant schools. Until this measure becomes law nothing can be attempted in these all-important directions. The Commissioner's immediate recommendations are subjoined:—

1. Abolition of minimum attendance so as to deal with default from day to day.
2. Establishment of one class of truant schools on such a broad basis as to include the best features of these distinct types of schools at present in vogue in London. This is practically met by the present Bill, inasmuch as the period of detention is left to the Minister; it can be for years, or for shorter periods, or simply for daily attendances, as may be warranted by the circumstances of each case.
3. Establishment of Special Courts for the hearing of juvenile cases. A special Act should be passed for this purpose, unless provision can be incorporated in the present Public Instruction Amending Bill.

Most of the administrative details must be provided for in Regulations, and the more important of these are comprised in the following:—

1. Division of the State into districts solely for the working of the school attendance provisions.
2. Instructions to teachers and attendance officers as to their respective and mutual duties.
3. The specification of definite lines to govern the junctures of caution and prosecution, and the issue of exemption certificates.

The Commissioner's report contains all the necessary data in regard to these matters, and he will be prepared in due course, when the Act has been amended, to assist in the compilation of such regulations as he has indicated.

Permanent Industrial Schools.—The work of reforming the worst classes of boys is conducted in England in the Permanent Industrial Schools. The boys are either sent to training-ships as the "Shaftesbury" and "Exmouth" or placed in homes or barracks on the land. The shortest period of detention on the "Shaftesbury" is eighteen months, and this the captain thinks is little enough if complete reformation is to be obtained. The chief features of the ship are the instruction in seamanship, to which is added practical experience in sailing a vessel; the physical training, which is carried out on Sandow's principle; and the classes for instruction in technical branches necessary to make the boys more efficient as seamen. The latest statistics show that over 50 per cent. of the boys get positions in the Royal Navy and merchant service. The care over the lads does not end with their departure from the ship. A shipping agent, who is on the staff, is entrusted with the duty of finding positions on ships for those who are eligible, and looking after their interests when they return to port. He performs a similar duty, in so far as is practicable, for those apprenticed on land, and the supervision in both cases is continued to the age of 18 years. The practice of permitting the good-conduct boys on the ship to visit their homes once a year for a few days has much to commend it. It speaks well for the discipline of the ship that the boys return punctually on the expiration of their leave, and that the privilege has never been abused.

On the matter of organisation in reformatory schools of the character of the "Shaftesbury" the captain holds some well-defined views. He is in favour of establishing barracks on land near the shore. He disapproves of a ship as a dwelling-place. He considers that a ship has several drawbacks to a proper training—

insufficient

insufficient space, trouble through infectious and contagious disease, continual expenses for repairs. In place of the sailing ship he advocates the use of a steam tender by means of which the boys would get the experience and preparation necessary for positions in modern sea-going ships.

The Philanthropic Home, Redhill, Surrey, a private reformatory, is a splendid property, of large extent, and offers plenty of scope for agricultural training, which is the chief occupation of the institution. The Home is organised on the family principle, and the 300 boys in attendance live in five separate houses. After the course of agriculture each boy is given the opportunity of learning a trade. At the expiration of their term, employment is found for the boys at home or in the colonies, and their welfare is carefully considered for at least four years after their discharge from the school.

The Government of Norway has established a reformatory in Bastö, in the Kristiania Fiord, for its juvenile offenders. The present superintendent was commissioned by his Government a few years ago to visit Europe, the United Kingdom, and America, and inquire into the organisation and discipline of the reformatories in those countries. On his return he was placed in charge of the Bastö Reformatory. The two most important features of organisation which he introduced are the principle of homes and the classification by age. There are three homes, each under its own master and assistants, and each with its own school, workshops, and gardens. The boys only meet in common in the chapel, the dining-room (in divisions), and on the drill-ground. The youngest home includes the pupils under 12 years of age, the middle home those between 12 and 15, and the senior home those above 15. According to the judgment and experience of the Superintendent, the division on the basis of age gives the best moral results. Although there are excellent natural opportunities at Bastö for a nautical training, nothing is done in that direction. While some exception can be taken to the construction of the dormitories, the institution, on the whole, is admirably adapted for its purpose. The boys, under their officers, form a happy little settlement, and are occupied in attending school, cultivating the land, and learning various trades.

In the matter of reformatory schools, our State has little to learn from those of other countries. The "Shaftesbury" Training ship gives a good preparation for service in sea-going vessels, with the result that the majority of the lads going out every year enter the Royal Navy or the merchant service. In this respect, more should be done in our Training Ship to prepare lads for a sea-going life. In its general organisation and discipline the "Sobraon" is unequalled.

Reformatories for girls in other parts have no features which are not known to us, and in the Parramatta Girls' Industrial School our State has an institution of the highest value to the community. The Carpenterian Reformatory for boys, in so far as the nature of the buildings will admit, is well organised, and is doing highly creditable work. The best results, however, can only be realised when the Government has its own buildings. The principle of dividing the boys into families and classifying them according to age, as is done at Bastö and Redhill, is strongly recommended.

XIV.

CO-EDUCATION.

[J. W. TURNER.]

The subject is a very vexed one, and there is great diversity of opinion as to how far the sexes should be educated together. In some continental countries, particularly in France and Germany, separate classes for the sexes are provided in all the large cities, in both primary and secondary schools, and the feeling there is opposed to co-education. In the United Kingdom there are separate classes and mixed classes in the large cities, but it may be said that the feeling is slightly in favour of the mixed system. In America the mixed system is very general, and has the endorsement of some of the most prominent educationists of that country. Dr. Brooks, of Philadelphia, in his scheme for the development of high schools, advocates three distinct courses of study in each school—a general course to be taken by both sexes in common, with a provision for separate specialised courses.

courses. He has no hesitation in recommending that high schools with these conditions should be open to both boys and girls. This system, he considers, is a natural one, and, when properly conducted, conduces to better discipline and a higher standard of moral thought and feeling. While he believes that the mixed system, on the plan proposed, is in accordance with a true theory of education, he also supports it on the ground of economy and convenience. Dr. Macalister favours the teaching of the sexes together throughout their school life, and the conduct of the pupils of both sexes in the institution under his care supports his belief as to the value of the system. Dr. Balliet, of Springfield, Massachusetts, strongly advocates co-education, and as strongly opposes artificial separation. In New York the feeling in favour of co-education is not strong. The Girls' High School in that city, which was opened about twelve months ago, is a magnificent structure, replete with the most modern equipment, including two gymnasiums, and has accommodation for 2,500 pupils. In the majority report, which appears in the Boston School Document, No. 19, 1870, the Committee refers to the objection raised by physicians to co-education, and recommends mixed classes in the normal schools, in both classes of high schools, Latin and English, and in the primary schools of that city.

Foreign educationists hold different views on co-education, as investigated in America. Dr. Schlee, Germany, considers that co-education, under certain circumstances, is advantageous; Professor Wactzoldt, Germany, doubts whether it has a moral advantage; Professor Hausknecht, Germany, says that as a principle it does not provide for the needs of the separate sexes; Mlle. Dugard, France, says that the appearance of the classes in mixed schools seem to her even better than in the separate schools; Anna Bentzen, Norway, from the moral standpoint, sees only healthy results from American co-education. The physical condition of the pupils does not impress her, but this she does not attribute to the mixed teaching. In regard to the economical aspect of the question, considering the great expense in equipping laboratories for separate teaching, she favours the principle of co-education.

The summarised views of two eminent educationists, of England and America, are given :—

Mr. Sadler, England, favours a separate course of study after the girl has reached the age of about 13.

Dr. Harris, America, advocates co-education throughout the whole school career.

The Commissioner's personal conviction is that co-education is desirable, but, considering that our largest schools have been organised and conducted on the separate system for so many years, he does not propose any change regarding them. In the scheme of superior schools with specialised courses which he has recommended, the Commissioner is of opinion that co-education might be introduced with benefit; and in regard to the proposed new training schools, the classes should be co-educational. The Commissioner certainly would not reduce the amount of co-educational teaching which exists at present in our schools.

XV.

INSPECTION v. EXAMINATION.

[J. W. TURNER.]

This is a much vexed question in our midst. In Chapter LII an endeavour has been made to set forth as impartially as possible the evidence collected on the point. The Commissioner has passed through all the grades of the New South Wales teaching experience, and in his capacity as a teacher he has, of course, in common with all other New South Wales teachers, been subjected to the examination process. Personally he has no grievance against it. He has always recognised it as a method which the controlling minds of the Department deem it necessary to follow in the interests of proper school organisation. He carried away with him, therefore, in his investigations nothing of that resentment which teachers are usually credited with feeling against the examination process, An earnest teacher cannot fail to profit by an intelligent examination of his school; but

but then it is submitted that he would profit far more if the Inspector were freed from this huge mechanical duty, and left at liberty to confer, advise, and sympathetically instruct the teacher, not once in a year, but as many times as practicable. An element of the matter that strikes one forcibly is the fact that the large number of teachers in our service have not been efficiently trained, and these would profit best when coming into contact with their Inspectors, if the latter came to them as a sympathetic force, imparted instruction in methods, and gave general advice according to the needs of those concerned. The word reform is in everybody's mouth in regard to educational matters in this State, and it is urgently necessary to discriminate between the popular cry and the proper need for development and improvement. A reactionary spirit is too often mistaken for a reform movement. We have had examination so long that it is but natural that there should be some reaction against it. Probably if we had had inspection methods all this time, there would be a determinate outcry for examination. The Commissioner has endeavoured to keep his mind clear on this point, and to treat the question purely from the standpoint as to which process, considering everything, is best for the educational service of the State, and his conclusions, as set forth at the end of Chapter LII, are as follow:—In conclusion, the Commissioner is convinced that in all countries where there is a well-regulated system of public instruction the process of inspection should be substituted for that of examination. Bearing in mind, however, the fact that the system of examination has been so continuously followed in New South Wales, the Commissioner recognises that there may be felt some natural hesitation in at once abandoning it in favour of that of inspection. Any risks involved in such a change would, however, be fully provided for if the power be given to the Chief Inspector of Schools to order the examination of a school where he deems such a course to be necessary, either from his own observation or the report of the local Inspector.

The only argument against this alteration is that it would be dangerous to release teachers from this so-called check upon their work. To that it can be replied that the inspectorial service of New South Wales is one of the most useful and practical bodies of men that could be got together in any country, and the Commissioner feels sure that they would be just as well able to keep their finger upon the pulse of school work without the cumbersome machinery of school examination as in use to-day. He subscribes most heartily to the opinions he has quoted against the examination process, and all his observations have tended to sustain him in the conviction that we must trust the teacher more, and give the Inspector a freer hand to direct and advise those who have to work under him.

XVI.

RURAL SCHOOLS.

[J. W. TURNER.]

In this paper a matter of considerable importance to country people in New South Wales is dealt with. It was deemed necessary to quote from the report of the Educational Conference of 1902 to a sufficient extent to show the opinions of several of our more experienced Inspectors upon the question of rural schools. It will be noted that in that Conference no definite arrangement was arrived at, although the subject was comprehensively discussed. It therefore impressed itself on the Commissioner's mind as a matter to which he should pay special attention while on his investigations. It will be seen from the information furnished in Chapter LVIII that the subject has been effectively dealt with in America. The illustrations given will show the methods adopted. The evidence quoted is from sound practical men, who, unlike educationists in most other countries visited, have had to grapple with the problem of educating a population scattered in small aggregations over a vast expanse of country. The central school system in America appeals to one strongly as a solution of the trouble, and as is done in America, the child should be brought to the school and not the school to the child. Speaking from personal experience there is excellent material in the country districts for teachers to work upon, but as matters now are, many a bright boy and girl are shut off from the avenues of knowledge, just when the mind is beginning to work, and the interest in learning

learning to quicken. As regards families so scattered as to be far out of the reach of any school, nothing much can be done beyond what the Department is now attempting, but what the Commissioner is most concerned about is the raising of the standard of education generally throughout the country, and raising it in a marked and definite way. In this connection it suggests itself that parents stand in need of some enlightenment on this matter. At present they do not realise the difference between school and school. In every small centre of population parents agitate until they get a school building, utterly unmindful of the fact that the multiplication of these small schools deprives their children of a lot of advantages appertaining to schools of a higher standard. The statement is often made that the city has all the educational advantages, and that the country has to be satisfied with a lower grade standard of instruction.

Some steps should be taken to bring home to the parents concerned the great difference between the standard of instruction in Provisional, or Ninth or Tenth Class Schools, and in that of a Third or Fourth Class School. If parents could be led to dispossess their minds of the idea that by getting a certain amount of Government money spent in small centres of population they were consulting the best interests of their children, a great reform would be effected, because it is not merely the establishment of any sort of school that means the advancement of their children's education, but rather the establishment of such a school as will result in their children being thoroughly taught to the standard of town schools.

If our Inspectors were instructed to continuously address the parents in the different centres on this point, the Commissioner thinks that the Department would have less applications for the establishment of small schools teaching the three "R's," and that these small communities would combine to secure the establishment of a school of higher standard, which would give their children almost equal advantages with those attending schools in the populous areas. In this connection the Department should undoubtedly assist parents in the matter of conveying children to schools so established.

One good concentrated school would supply the educational wants of a community which now has to rely on several small schools of no particular character.

The amalgamation of several small schools into a school of the Fourth Class, for example, would ensure, in the first place, the appointment of a head teacher of good attainments, and trained assistant teachers. With the better qualified teachers higher standards of work could be reached. A parent would not be under the expense or inconvenience of sending his child from home if he wished to give him a good education. The local Central School could be so organised that there would be no general necessity for such a course. Many, if not all, of the subjects taught in the city schools, could be taught in the Central School.

The establishment of Central Schools need not in any way clash with the District Model Schools. The former are intended to give certain educational advantages to children living away from towns, the latter are designed to give the best public school education to the children of a town and district. The District Model School no doubt would have a wide curriculum, and possibly would teach some subjects beyond the course of the Central School, and some parents, for very good reasons, might desire to send their children to it. To meet the wishes of such parents, it might be considered advisable to have a scheme of scholarships providing admission from the Central Schools, on the completion of the course by the pupils, to the District Model Schools.

On the mere question of cost, the Central School system would prove cheaper than the present arrangement of separate small schools, because the Department would be relieved of the necessity of building and repairing small schools, as well as of paying salaries to teachers, and providing school material. Even if the scheme cost more, the great benefit conferred upon the children in the matter of providing a higher education would warrant the change.

The Commissioner makes these recommendations because he feels convinced that the community would benefit considerably if our small schools were considerably reduced in number, and a more uniform quality of education given to the whole of the children of the State. At present, without doubt, the children of the towns and cities have many educational advantages over the children spread through the country.

RECOMMENDATIONS.

XVII.

RECOMMENDATIONS.

[J. W. TURNER.]

1. That a Kindergarten Training College should be established.
2. That as soon as there are sufficient trained teachers of Kindergarten the subject should be taught in all infant schools, and schools with a first class in which female assistants are employed.
3. That until the Kindergarten Training College is establised students in Hurlstone Training School should be regularly instructed in the subject, theory and practice.
4. That manual training should be introduced into the lower and middle classes of the primary school to form a link between the Kindergarten occupations and the manual work of the superior schools.

   That the instruction given in manual training in the higher classes should be on a more liberal scale and in accordance with the standards fully set forth in Chapter XVIII.

   That all material, tools, &c., necessary for the manual training workshops should be provided free of cost to the pupils.
5. That a superintendent of drawing should be appointed to re-organise the whole method of teaching drawing in the public schools of the State, and that the greatest care should be exercised to see that a suitable man is obtained from the accredited art centres of London. The information submitted by the Commissioner on the teaching of drawing (*see* Chapter XX) will show what is being done in London, and it means everything to the proper reconstruction of the teaching of this subject in our schools that a man of all-round qualifications should be secured.
6. That the subjects of instruction in our superior schools should be remodelled with a view to the definite teaching of science, commerce, industry, and agriculture. The Commissioner has collected a variety of information on the teaching of these subjects in upper primary schools, but he would strongly urge that the French system be followed in its general outlines. (*See* Chapter IX, and time-table, Chapter XIV.)
7. That the course of domestic economy, as taught in the girls' departments of our primary schools, should be considerably enlarged. At present such course is confined to cookery and needlework. The extra subjects that should be included, and soundly taught, are laundry work, and as far as practicable, other house-keeping methods. These will necessitate careful selection, and sufficient data can be supplied from which to make an appropriate choice.
8. That when the teaching of the subjects recommended for girls has been sufficiently extended, the principle followed in England, America, and France, of appointing inspectresses should be adopted. This course is not recommended in regard to general education, but in connection with the special teaching of feminine subjects. It is obvious that such work will be better supervised by women.
9. That moral and civic instruction should be considerably expanded, and more definitely taught. At present in our schools, beyond scripture lessons and a somewhat technical programme of temperance instruction, the subject is not systematically taught. In France and America the range of specific teaching in these subjects may be said to have been extended so as to cover every requirement. In teaching of patriotism, good manners, and practical citizenship, the system in those countries is very thorough. New South Wales could advantageously follow their example. (*See* Chapters VIII, IX, XIII.)
10. As regards co-education the Commissioner refrains from submitting a recommendation. It prevails largely in England, and it finds favour in America, but not upon the Continent. There may be things good in themselves, which it would not be wise to adopt for the very best of reasons. In all our large schools the sexes are separate, and to suddenly alter this arrangement would lead to the confusion of our teaching methods, and for some considerable time to come, to disorganisation. If the arrangement of pupils in mixed classes be decided upon it should be very gradually introduced.

11. That the compulsory clauses of the present Public Instruction Act be amended to provide for:—
    (*a*) The abolition of a stated minimum attendance so as to deal with default from day to day.
    (*b*) The establishment of truant schools.
    (*c*) The establishment of special Courts for the hearing of juvenile cases.
    (*d*) The establishment of special schools for newsboys and other working lads.

12. That a thorough reconstruction of our Public School Training System be made in the following directions:—
    A. Abolition of present pupil-teacher system.
    B. Establishment of a training school system with the following features:—
        1. Age of admission to be not less than 17 years.
        2. Standard of admission to be that of the completed course in a superior or high school, or its equivalent.
        3. The course to be of two years, and to comprise the following:—
            (*a*) General education.
            (*b*) Professional training.
            (*c*) Complete course in pedagogy.
            (*d*) Full course in science.
            (*e*) Manual training.
            (*f*) Physical training.
    C. A university course for the best students on the completion of the training school course—students to be free from teaching in schools.
    D. Construction of new buildings for training school purposes—complete equipment for general and scientific teaching to be provided.
    E. Establishment of classes in the District Model Schools for the training of teachers of small schools, which will not come within the scope of the centralised scheme.

13. That the process of inspection should be substituted for examination.

14. That the central school system, so successful in America, should be brought gradually into operation in this State. To this end it is recommended that no more small schools be erected until it has been ascertained whether or not it is practicable to centralise the teaching for the district concerned. As regards groups of existing small schools, it would be well to try the experiment in certain localities, and to extend the principle, without undue sacrifice, if initial results proved satisfactory.

15. In the matter of the construction of school buildings and the seating arrangements the Commissioner does not propose to submit specific recommendations, because he is well aware of the fact that the alterations and re-arrangements entailed could not be carried out without enormous expense. He will content himself with calling attention to the methods adopted in other countries, which make for all that is best in hygiene and teaching convenience:—
    (*a*) Single class-rooms to accommodate about fifty pupils are preferred to the long rooms in which from four to six classes are taught. Such rooms are more easily ventilated, lighted, and heated, and the teacher is greatly assisted by the isolation.

    (*b*) As regards the furniture there is room for considerable improvement. The school furniture in use in our schools is of the most obsolete type, long, plain, backless forms, and the long desk being mostly in use. In a few of our superior schools there is some good furniture which has been imported from Canada. The best type of school furniture is seen in Switzerland, and there is no reason why the Swiss style of desk cannot be made in our own State, from our own timber, and supplied to our schools.

XVIII.

CONCLUSION.

In transmitting to your Excellency this Report as to the character of the existing system of primary education of this State, and as to the nature of improvements which, in your Commissioners' judgment should be effected therein, it remains but to add that the following Extended Report, Chapters I to LVIII, is *not* really of the nature of an Appendix. It expresses in greater detail the Commissioners' opinions, and the facts upon which they are founded; it affords fuller information as to the operation or character of other educational systems; it focuses information upon, and discusses with greater thoroughness, many of the more important features of education and instruction. It is intended, therefore, to be read in connection with these Summaries, which, in the nature of the case, can give only a very imperfect conception of the general question.

Later, your Commissioners hope to have the honour of submitting for your Excellency's acceptance a report upon other branches of education.

We have the honour to be,

Your Excellency's most obedient servants,

G. H. KNIBBS,

J. W. TURNER.

3 *December*, 1903.

Appendix to Summarised Report.

SYNOPSIS OF CONCLUSIONS.

(1.) *Conclusions.*—The following synopsis of conclusions expresses the opinions of the Commissioners in as brief a form as possible in reference to the subjects dealt with in the several chapters written by them. In many cases, but not invariably, they appear at the termination of the various chapters. Without necessarily taking the form of recommendations, they at least indicate the views of each Commissioner as to the necessity and nature of the reform that should, in the Commissioners' opinion, characterise the future history of the Department of Public Instruction. In this way they serve to reveal the extent of our educational limitations, and their grouping in this Division admits of those limitations being readily perceived.

As in the case of the chapters, each Commissioner is responsible only for his own conclusions, and for the statements upon which they are based. The extent of agreement and difference between the Commissioners and the attitude of each Commissioner to the question of reform, has already appeared.

Chapter IV.—The Kindergarten and School for Infants, Part I [G.H.K.], Part II [J.W.T.], Part III [G.H.K.]

(1.) Judging kindergarten (*a*) by its rationale, (*b*) by its history, and (*c*) from actual observation, the Commissioners consider it to be of high importance in an educational system, and to be the proper initial step in all education. This they believe to have been long ago demonstrated beyond all doubt.

(2.) Its absence in any scheme of public instruction they believe to be a serious defect, and one which, particularly in a democratic community, ought not to continue.

(3.) The form of kindergarten most desirable is what may be called modified Froebelian kindergarten.

(4.) It is essential, in modifying the kindergarten, that its systematic character be maintained, and that the Froebelian principles be strictly adhered to; that is to say, while the scheme should be thoroughly organised and articulated, the whole of the instruction should be developed through play; self-activity should be promoted; the course should not be allowed to become charged and burdened merely with primary work, which of course would destroy its Froebelian character.

(5.) Desultory employment of some or all of the gifts and occupations is not kindergarten as understood by educationists, and should not be substituted for true kindergarten.

(6.) Kindergartens should be conducted by properly educated and properly trained teachers, who, in addition to having a good secondary education, have systematically studied at least Froebelian occupations, the psychology of pædagogy, the theory of education, the history of pædagogy, and hygiene. (See particulars hereinafter.) Teaching by uneducated persons, or by those who do not thoroughly understand kindergarten theory, is to be deprecated.

(7.) The kindergarten that exists at present in the schools under the Department of Public Instruction (*a*) is not yet systematic; (*b*) nor is it adequate; moreover, (*c*) it is not kindergarten in the European or American sense. (*d*) From the preceding brief indication of the geographical extension and history of kindergarten, it is obvious that this State, in so far as its Department of Public Instruction is concerned, is seriously behind the practice of Europe and America in respect of kindergarten-teaching.

(8.) Where it exists at all, the present kindergarten-equipment of 'public schools' is quite inadequate.

(9.)

(9.) Every kindergarten should possess an infants' garden, a full equipment of material, and should have a well articulated kindergarten scheme.
(10.) Children should be allowed to attend the kindergarten at any age above three years and up to seven years.
(11.) The hygienic condition of kindergartens, as well as of other schools, should be perfect, and very different from what they now are; (*a*) in regard to school-buildings; (*b*) and in regard to care of the children.
(12.) When kindergarten is introduced, it should be thorough, and not attempted at all until thorough. The value of kindergarten cannot be judged from a half-developed scheme, and it has often been adversely judged through imperfect presentation.
(13.) As soon as infant-schools are properly equipped with respect to hygiene and to kindergarten material, strong inducement to the people should be held out to send their little ones to them by suitable advertisement of the advantages of such schools.
(14.) Attendance at the kindergarten should be compulsory at the age of six years, but not before.

CHAPTER V.—Outlines of some Educational Systems, Switzerland. [G.H.K.]

(1.) The educational opportunities are much greater for children in Switzerland than they are for children in New South Wales—the system of education being better both in respect of (*a*) curriculum and (*b*) professional qualification of the teaching staff.
(2.) The primary schools of Switzerland are generally excellent in respect of their design, hygiene, pædagogical equipment, and general appearance.
(3.) The scientific outfit, and their lighting, ventilation, and heating arrangements leave but little to be desired.

CHAPTER VI.—Primary Education in Germany and other Countries of Europe. [G.H.K.]

(1.) A general review of European primary education reveals the fact that it is far superior to that of New South Wales in almost every respect.
(2.) The great difference is in the inadequate provision made by us for the training of teachers, and in our practice of utilising the service of mere children as teachers.
(3.) This blot on our system reacts unfavourably on the teachers themselves.

CHAPTER VII.—Public Instruction in Russia. [Edited.—G.H.K.]

(1.) Russian education is rapidly advancing, and exhibits, in particular directions, excellent features.
(2.) The Russian Government is making efforts to liberalise the system of public instruction.

CHAPTER VIII.—The Primary School System of France. [J.W.T.]

The French primary system provides for well-arranged, properly co-ordinated courses of instruction. Its aim in the first place is to form character in the child, and in the second place to prepare him for the duties of life.

The moral teaching reaches a high standard.

The plan of inspection gives the best results.

CHAPTER IX.—Upper Primary Schools of France. [J.W.T.]

The upper primary schools of France are practical and utilitarian in character, but not to the extent of giving an apprenticeship.

The preparation of the pupils proceeds along the lines of a general education, or in the direction of a commercial, industrial, or agricultural training.

The scheme of scholarships provides for the poorest in the land.

CHAPTER X.—The Public Schools of Paris. [J.W.T.]

The benevolent activities in Paris are wonderfully developed.

While it is not necessary to introduce all these features into our system, some of them could be adopted with advantage.

The scheme of bursaries is on a most munificent scale.

CHAPTER XI.—Elementary and Higher Grade Schools of England. [J.W.T.]

The higher grade schools of England afford a very fine training.

They give a good general education, with a specialisation towards scientific, technical, and commercial subjects.

For the general needs of a community they are better than our superior schools.

Co-education of the sexes exists in many of these schools with the best of results.

CHAPTER XII.—Elementary and Higher Grade Schools of Edinburgh. [J.W.T.]

The modern curriculum and the up-to-date equipment of higher grade schools obtain in Edinburgh.

A leaving certificate is issued on the completion of the course.

A similar certificate should be awarded to our pupils on completing their superior school course.

CHAPTER XIII.—Elementary and Grammar Schools of the United States. [J.W.T.]

Buildings are well arranged on the single-room principle.

Good discipline prevails. This in some measure is accounted for by the organisation.

Moral teaching forms an important part of the instruction.

Special attention is given to instructing the pupils in the rights and duties of citizenship. Patriotism is regularly inculcated.

Moral and civic instruction in our schools should be more systematically and thoroughly taught.

Nature study has a prominent place in the programme of the American teacher. The separate class-room facilitates the work.

CHAPTER XIV.—The Public Schools of Toronto, Canada. [J.W.T.]

The Toronto school authorities have made excellent provision for the teaching of newsboys.

The instruction is largely practical.

An institution of a similar character in Sydney is urgently needed.

CHAPTER XV.—Ethical and Religious Instruction and Education. [G.H.K.]

(1) The provisions, relating to religious education, of the Public Instruction Act are not availed of by the clergy of the various religious denominations, as it might have been hoped. It would be well, therefore, if a circular were issued, calling attention to the provisions of the Act, and inviting the co-operation of the clergy in providing for the moral-religious education of the people of this State.

(2) Since the clergy have many calls on their time, and since in country districts visitation of the schools is often impossible, a scheme for ethical instruction on very similar lines to the French, which is at once noble, and, as regards religious differences, neutral, is much to be desired. Such instruction should be developed on the lines suggested in section 10 of chapter XV., and ought to embrace the relation of the child or person to

(*a*) Himself. (Personal ethics.)
(*b*) His fellows. (Social ethics.)
(*c*) His country. (National ethics.)
(*d*) The world. (Philanthropy.)

He

He should thus be taught to recognise something of the reality of these relationships through the cultivation of

(i) Personal ideals and character.
(ii) The social virtues.
(iii) Patriotism, loyal response to the just claims of his country, and the wish to see its institutions perfected.
(iv) The love of mankind, without regard to racial or religious differences.

All these elements should in the actual instruction as far as possible be united, not dissociated.

(3) A text-book for the guidance of teachers should be written, not by an ordinary pædagogue, but by a specialist in moral philosophy, having in addition a thorough grasp of modern theory of instruction, and of the child mind in its different stages of development.

(4) Wall-sheets, containing the fundamental points of the text-book, worthy of an effort to create noble ideals, ought to be placed on the walls of every school in the State.

(5) The elements of good manners, which depend upon nobility and generosity of heart, ought to be impressed upon the children, and they ought to be taught that *politeness and grace of manner*, when the natural expression of a good heart and of sensitive regard for the personality of others, are among the *finest adornments of the human being*.

(6) In the training of teachers, attention should be paid to ethics and the importance of the social graces.

Chapter XVI.—Education of the Will. [G.H.K.]

(1) An educational system that fails to take account of the training of the human will as the fundamental element in developing personal and national force of character, utterly fails in one of its most important functions.

(2) All teachers should, before commencing to teach, receive such psychological and other instruction as will enable them to appreciate and discharge this part of their task.

(3) The mechanical discipline should be recognised as injurious, as tending to diminish force of character.

(4) The only satisfactory discipline is that which secures obedience and good conduct through the pupil's own self-directed response to the personality of the teacher.

(5) A strong respect for the individuality, and for the self-expression of a child, is to be expected of every teacher, since only by the tact and sympathy therewith associated can the personal influence be *directive, and not coercive.*

(6) The disciplinary relationship between teacher and pupil should always be regarded from the double standpoint, viz., that the development of character, and the securing of good conditions for instruction, are the real aims of all truly educational discipline.

(7) Merely mechanical teachers who fail to see this should be required to thoroughly inform themselves as to the theory of discipline, and to introduce the directive, in lieu of the coercive discipline.

Chapter XVII.—Physical Culture, Gymnastics, etc. [G.H.K.]

(1) Insufficient attention has been paid in New South Wales to physical culture and gymnastics.

(2) Systematic instruction therein should be given to all teachers in training by a competent instructor having the necessary theoretical and practical knowledge. The theoretical knowledge should include sufficient general scientific education, and knowledge of the art of teaching his subject to others.

(3) With a view of qualifying teachers in different parts of the State to give instruction in their schools, holiday courses, similar to those in Tasmania, should be given in the larger country towns.

(4) Suitable gymnastic exercises on the lines of a rational physical culture should form part of the ordinary curriculum in schools.

(5) Special effort should be directed to making these exercises as attractive as possible to the children, as well as educative.

CHAPTER XVIII.—Manual Training. [J.W.T.]

Manual training, on account of its educative and practical value, should be given in every class in our schools.

Provision should be made for working in wood and iron in the case of the older boys.

Specially trained teachers should be employed.

The teaching of domestic economy in our girls' schools should be extended to include other features of housekeeping.

CHAPTER XIX.—Manual Training and Sloyd. [G.H.K.]

(1) Manual training should be included in the curriculum of the public schools in all the larger towns, as a natural extension of kindergarten, and because of its educative and practical value.

(2) It should take the form of Sloyd, and not be merely trade-teaching. Carpentry and trade-teaching is not comparable to Sloyd, and is not adequate.

(3) It should be taught by properly trained teachers who have systematically studied Sloyd and are thoroughly acquainted with its theory.

(4) Instruction in Sloyd should form part of the curriculum in the training college.

CHAPTER XX.—Drawing: London Board Schools and San Francisco. [J.W.T.]

The drawing in our schools should be completely remodelled.

A thoroughly qualified teacher of the subject with the best credentials from London art centres should be at once introduced.

CHAPTER XXI.—The Teaching of Elementary Drawing in Europe. [G.H.K.]

(1) Drawing should be more thoroughly taught, both in schools and to the teachers of the State.

(2) "Drawing from nature" should be first practised, and should be *freehand* at the commencement, so as to stimulate form-memory.

(3) Colouring should be early introduced, so as to stimulate the colour-sense and colour-memory.

(4) Geometrical and perspective drawing should also be taught, collaterally with purely artistic drawing.

(5) The use of drawing instruments should be learnt in the primary school.

(6) The drawing lessons should be intimately associated with other subjects, especially geometry, algebra, and manual work, and should also be connected with other science subjects.

(7) The copying of drawings should be abandoned as being of inferior educative value.

(8) Modelling may be included in the drawing lessons and commenced in the kindergarten. The report of the Second International Congress on the teaching of drawing should be obtained and considered before the details of its general introduction is definitely settled.

CHAPTER XXII.—The Teaching of Modern and Ancient Languages. [G.H.K.]

The prevailing systems in this State of teaching languages are psychologically erroneous, and in general neither give a command of the languages, ancient or modern, nor do they lead to a love of them. The modern languages are generally read for their utility.

(1.) Latin, French, and German should be optional subjects in the primary school, and should be commenced not later than, say, 12 years of age.
(2.) The teaching should initially be purely oral, both in the case of ancient and modern languages.
(3.) The grammar of each language should be learnt inductively.
(4.) Language-teachers in addition to being able to speak a foreign language accurately, should be competent to assist their pupils by suggestions based upon phonology.
(5.) In country towns it is desirable that the phonograph should be used, so as to secure at least an approximation to correct pronunciation.
(6.) The scheme for learning languages should follow the principles defined in chapter XXII.

CHAPTER XXIII.—The Teaching of Geometry in Primary Schools, and its Reform. [G.H.K.]

The present methods of teaching geometry lead to a very limited conception of its range, interest, or value. Euclidean geometry is too restricted. It neglects many extremely interesting matters, and is tedious. Properly taught, geometry is not a difficult subject.

(1) As a text-book guiding the method of learning geometry, Euclid's Elements should be abandoned.
(2) Geometry should commence in the Kindergarten, and proceed continuously.
(3) Geometrical drawing, or practical geometry, should precede demonstrational.
(4) Demonstrational Geometry should be more general, and proofs should, as far as possible, be self-contained.
(5) Projective and analytic geometry should be introduced, as early as possible, in an elementary form.
(6) Geometry should be taught in connection with other mathematical subjects.
(7) Trigonometry should not be dissociated therefrom.
(8) Elementary field geometry should be taught (*i.e.*, elementary surveying) as in France, Switzerland, etc.

CHAPTER XXIV.—The Teaching of Geography in Primary Schools. [G.H.K.]

The teaching of geography has, of late years, been completely reformed. The old, dry descriptive form, burdened with much uninteresting and useless information, taught without aids, without any careful attempt to make the pupil realise what geography means, has practically disappeared in Europe, and is being abandoned in England.

Something like the Continental idea of teaching the subject has already been introduced here. The conception put forward by Professor J. W. Gregory, of Melbourne, in his "Austral Geography," is practically a move toward the Continental methods of teaching. To reach the plane of European teaching it will be necessary to

(1) Abandon the employment of untrained teachers.
(2) Give our teachers an education in Science subjects equal to what is received in Europe.
(3) Develope the methodology of geography on Continental lines.
(4) Equip our schools better for teaching of geography and cognate subjects.
(5) Make larger use of pictures, lanterns, and slides, etc.
(6) Adopt the school-excursion as a means of geographical teaching.

CHAPTER XXV.—The Teaching of Arithmetic and Algebra in Primary Schools. [G.H.K.]

(1) The four fundamental operations of arithmetic should be taught intuitively and simultaneously.
(2) A much larger quantity of "mental arithmetic" should be undertaken, the written work being wholly based on the mental.
(3) All arithmetical processes should be rationally understood by the pupils, and the working by "rule" introduced after, and not before, a process is understood.
(4) The teaching, according to the "logical order," should be abandoned, and the "psychological order" followed, *i.e.*, the range should extend over the whole of arithmetic as soon as possible, the very simplest cases being first taken, and the complexity advanced as the work proceeds.
(5) Algebra of a simple character should be early introduced, and taught on the same principles as arithmetic.
(6) The spirit, and to a great extent the letter, of the British Association's recommendations should be carried out in the teaching of the State.
(7) The subjects, arithmetic and algebra, should be taught in conjunction with geometry, planimetry, and stereometry.
(8) Examples in arithmetic should be real, *i.e.*, drawn from the life-surroundings, which can be really appreciated by the child.
(9) Care should be taken that none of the examples introduce false conceptions.
(10) All opportunities of real applications of mathematical subjects should be embraced in the working plan of the school, so as to create interest and to ensure a real understanding of the work.
(11) The teaching should not merely follow text-books, but the European methodology of teaching the subject should be studied by the teachers.

CHAPTER XXVI.—Natural Science in the Primary Schools. [G.H.K.]

(1) Elementary physics, chemistry, zoology, botany, geology, mineralogy, should be taught in the primary schools.
(2) All teachers should be so educated as to be competent to give such teaching.
(3) In illustrating this teaching, the practical needs of the district in which the school lies should be borne in mind.
(4) All science teaching should be realistic and not literary, children being brought whenever possible face to face with the things spoken of.
(5) Every school should be equipped for science teaching.
(6) Children should be induced to take an interest in the school's scientific equipment, and encouraged in the direct study of natural bodies and natural phænomena.

CHAPTER XXVII.—Training School System of New South Wales. [J.W.T.]

In this preparatory statement reference is made to views expressed on this subject at the Annual Conference, 1902, and a change of opinion regarding some of those views is indicated.

CHAPTER XXVIII.—Training of Primary Teachers, Pupil-teachers, and Previous Training Systems contrasted—New South Wales System. [G.H.K.]

(1) A comparison of the pupil-teacher system with that of previous training shews the former to be hopelessly defective.
(2) Radical reform of the training of New South Wales teachers is urgently needed.
(3) The preliminary education of the primary teacher should be extended as far as secondary education, and the professional training should be thorough, which at present it is not.

This question is further considered in Chap. XL.

CHAPTER XXIX.—The State Training Schools of New South Wales. [J.W.T.]

The age of admission for the position of pupil-teacher is too low.
The best boys are not attracted to the Service.
The pupil-teacher has too great a responsibility in the management of a class.
The daily instruction imposes too great a strain on all concerned.
The training school buildings are altogether unsuitable for training school purposes.
They contain no provision for teaching science.
The course of study in the training school is too short.
The staff is inadequate.
The system of appointing teachers to small schools, with little practical knowledge of teaching, should be discontinued.
Applicants for such positions should undergo a course of training in District Model Schools.

CHAPTER XXX.—Pupil-teacher systems, United Kingdom. [J.W.T.]

The practice of spending half-time in a pupil-teacher centre in obtaining general education, and the other half in a day school in acquiring professional training, does not give entire satisfaction. The latter suffers.

The plan of daily instruction after hours has the same objections as in our own system. The employment of monitors is deprecated.

CHAPTER XXXI.—Some English Opinions on the Pupil-teacher System. [G.H.K.]

(1) Educated Englishmen, whose general education and linguistic attainments qualify them to judge, strongly condemn the pupil-teacher system.
(2) They also recognise that the Continental system of professionally educating teachers leads to better results.
(3) No educationist of eminence met by the Commissioners, who was personally familiar with European education, had any hesitation in condemning the pupil-teacher system.
(4) The pupil-teacher system is adopted in the United Kingdom for reasons of economy, not because of its efficiency.

CHAPTER XXXII.—Training Schools of the United Kingdom. [J.W.T.]

The courses being not less than two years allow sufficient time for practical training, and for comprehensive courses in pedagogy and science.

CHAPTER XXXIII.—Training Schools of the United States. [J.W.T.]

In the training colleges of America candidates for primary schools must have passed the high school course, generally accomplished about the age of 18 years, before they can be admitted. (*See* questions given at entrance examination.) Their whole time in the college, usually two years, is then devoted to the study of teaching methods—practical and theoretical.

CHAPTER XXXIV.—Training Schools of Canada. [J.W.T.]

Admission into the teaching ranks of Canada is not earlier than 17 or 18 years of age, and candidates must possess the high school leaving certificate.

The period of training is very short and restricted to professional subjects.

The training of teachers for small schools is carried on in District Model Schools.

The teachers, after an experience of the management of small schools, are allowed to enter a Normal School.

CHAPTER XXXV.—French Primary Normal Schools—Plan of Studies and Teaching Programmes. [G.H.K.]

(1) The professional education of the French school teacher is broad and thorough.

(2) The professional education of teachers in this State cannot be compared with that of France.

(3) Both the informative and formative elements are very thoroughly developed, as is shewn by the curriculum.

(4) The instructors of students of teaching are thoroughly educated and are specially expert in their branches of teaching.

CHAPTER XXXVI.—The Training School Systems of France. [J.W.T.]

The training schools of France form a part of its great system of national education. The educational authorities are not yet satisfied with their position. They do not get their best boys into the ranks, and the probationer class is too large. By means of additional grants from the Government they have been enabled to offer better inducements to lads to enter the training colleges. The question is one for our consideration. Emoluments on the same scale as those granted to other Departments of the Service will be necessary to attract our best lads, and the salaries of our trained students should be increased.

CHAPTER XXXVII.—The Education and Training of Primary Teachers in Europe (Switzerland, and Hungary). [G.H.K.]

(1) The curricula of the training schools of Switzerland and Hungary indicate that the professional education of teachers is far in advance of the highest form of professional education obtainable in this State.

(2) The above is true for most countries of Europe.

(3) The principal normal school of Buda-Pest is a very fine and finely equipped establishment, and reveals the great difference between the Hungarian estimate of the educational necessities of teachers, and the estimate of this State, as expressed in its training establishments.

CHAPTER XXXVIII.—Training of Teachers in Germany. [G.H.K.]

(1) The professional education of the German teacher is excellent.

(2) The director of a training college is almost invariably a man of University education.

(3) The principal teacher (Oberlehrer) is similarly a highly educated man.

(4) The ordinary teachers must possess the rector's certificate, which involves a far higher degree of education than is required for the highest class of primary teacher (1A) in New South Wales.

(5) The professional education of the ordinary teacher is also more thorough than the official education of the highest grade of teacher in New South Wales.

CHAPTER XXXIX.—The Jena Practising School. [G.H.K.]

(1) The professional training of the Jena Seminarium is excellent.

(2) It has the advantage of direct association with a University.

(3) This seminary, and that of Küsnacht in Switzerland, would form excellent models for this State.

CHAPTER XL.—Reform in the Training of Teachers. [G.H.K.]

It is evident from what has preceded that our whole scheme of training teachers needs reorganisation. The present system is a natural sequence to the pupil-teacher system, and is equally unsatisfactory. It is impossible to compare our curriculum and general method with the curricula and methods of other countries, without recognising that considerable progress is necessary in order to equip our teachers educationally as well as they are equipped in Europe. The following are recommendations, which if carried into effect, will place the training of teachers on a sounder footing :—

(1) Establishment of a Seminarium with a three years' course, sufficiently near the University of Sydney to permit of attendance there for special subjects.

(2) Entrance to the Seminarium to take place not earlier than 16, and after passing either the Senior examination or its equivalent.

(3) The curriculum to be practically as outlined in Sections 11 and 17, in Chapter XL.

(4) All subjects to be taught by specialists.

(5) In country centres a pædagogical course could be given in secondary (high) schools, as a temporary way of meeting the difficulty of educating a sufficient number of teachers.

It may be remarked that the necessity of offering special inducements for persons to enter the teaching profession will probably cease when the rate of the emolument of teachers is reasonably increased. During the transition period the present principle may perhaps be maintained, the extent of the inducement being however diminished.

CHAPTER XLI.—Schools for the Feeble-minded. [G.H.K.]

Schools for imbeciles have given most encouraging results. Many individuals of this unfortunate class, who were till comparatively recently considered beyond remedy, are now restored to the possibility of a useful and happy life. Not only has a healthy sense of independence been developed in them, but also a considerable understanding of the world and of their fellow beings. Their interest in life is thus enlarged and deepened. Apart from all humanitarian considerations it is a public economy to so educate an imbecile; thus even though we repudiate our human duty, it would still remain true that there is an economic advantage in attending to the education of this class.

It is therefore recommended :—

(1) That special schools for the backward be established on the lines of the Swiss and German schools for the same class.

(2) That these have *small* classes, not more than ten in a class, for most subjects of instruction.

(3) That devoted teachers, with proper knowledge of the psychology of the abnormal, be chosen for these schools, who will charge themselves with the special study of the education of these unfortunates, and keep themselves specially informed to this end.

CHAPTER XLII.—Schools for the Deaf and Dumb. [G.H.K.]

By the oral method of instruction, children may be educated much more thoroughly than by the method of speaking only through signs. So excellent is the system now followed that there can be no valid excuse for failing to adopt it. That it is incomparably better to give the unfortunate deaf mutes an opportunity of being able to understand their fellows by watching the vocal organs during speech and to give them also the power of vocal reply, than to leave them without these powers

powers, needs nothing more than statement. This is what has been achieved for humanity by so many schools of Europe and America. The only formal conclusions to be drawn are:—

(1) That in the education of the deaf and dumb, the art of reading speech and of speaking should be taught as in Europe and America.

(2) That the oral method of instruction should then be employed.

(3) That the primary school curriculum should be generally followed, intuitive methods and manual training being given, however, special prominence.

CHAPTER XLIII.—Compulsory School Attendance—English System and New York School Attendance Law. [J.W.T.]

Irregularity of attendance is very prevalent in our midst.

The comparative tables in the Chapter show to what extent this is the case when compared with London. The English system of obtaining regularity of attendance is recommended.

To secure improvement in the matter of school attendance in this State it will be necessary to amend the compulsory clauses of the Public Instruction Act, especially in regard to the minimum period of attendance.

CHAPTER XLIV.—Day Industrial and Truant Schools, London. [J.W.T.]

In the case of those children who will not attend school regularly, an institution similar to the Day Industrial and Truant School of England should be established.

Juvenile Courts should be instituted to investigate such cases.

CHAPTER XLV.—Permanent Industrial Schools, London. [J.W.T.]

We already have in our State, reformatories doing very similar work to those described in this chapter.

CHAPTER XLVI.—Other Reformatory Schools—English and Foreign. [J.W.T.]

The institutions for boys, described in this chapter, aim at giving some knowledge of cultivating the soil. Our State Reformatory works on much the same lines.

The family principle of government, which obtains in some of the English and foreign reformatories, is recommended for adoption in this State.

CHAPTER XLVII.—School Hygiene, Buildings, and Premises. [G.H.K.]

(1) School hygiene receives far greater attention in Europe than with us.

(2) The local hygienic standards are seriously defective.

The rooms to be provided in a completely equipped school, and found in all modern school-buildings where efficient teaching is aimed at, and where that is not sacrified to economy, are as follows:—

(3) Each class-group should have a class-room. More than one room, therefore, may be required for the whole of the pupils of one grade.

(4) In addition, there should be a large room for manual work for boys.

(5) Similarly a workroom for girls.

(6) A large hall for gymnastics.

(7) A large hall for general meetings, reunions, etc. (Aula, Salle de conférence).

(8) A laboratory for physics, astronomy, etc.

(9) A laboratory for chemistry.

(10) A museum of natural history.

(11) A library.

(12) A reading-room.

(13) If cooking be taught one or two kitchens will also be required.

(14) And pantry and storeroom.

(15) In smaller schools (8), (9), and (10) may be satisfied by one room, and (11) and (12) by one room.

(16) The best designed schools are those of Switzerland.

(17) The results of European discussion of school hygiene (indicated in this chapter) ought to be applied to the educational system of the State.

CHAPTER XLVIII.—School-furniture and its Hygienic Importance. [G.H.K.]

(1) Our State schools at present are unsatisfactory as regards (*a*) their orientation, (*b*) their general design, (*c*) their internal arrangement as to classes, (*d*) their system of seating, (*e*) their arrangement as regards lighting, (*f*) as regards heating and cooling, (*g*) ventilation, (*h*) lavatories, (*i*) latrines, (*j*) in the continuing to use slates, (*k*) in insufficient provision for accidents and "first aid."

(2) An inspection should be made of all State schools with a view to immediate amelioration of their condition by someone technically familiar (*a*) with the forms and equipments of school-buildings approved in Europe as hygienic, (*b*) and with European school-hygiene as a specialty.

(3.) All selections of sites in future should be made by some person competent as regards modern ideas of school-hygiene.

(4.) All future school-buildings should be designed by an architect familar with modern schools, especially those of Switzerland, and with school-hygiene as a speciality.

(5.) Every school should be thoroughly cleaned, repainted, and generally renovated once a year. All the material should be then thoroughly overhauled, and put into proper condition.

CHAPTER XLIX.—Hygiene in relation to the School-pupil. [G.H.K.]

(1.) There should be systematic examination to determine the existence or otherwise of physical defects—especially such as defects of sight and hearing—of every child entering school with a view of properly placing him. (It is desirable that records of these should be preserved.)

(2.) The troubles from which any child is suffering should have the attention of a physician, in regard to his fitness to remain at school, whenever the master is in doubt.

(3.) The general effect of the school-régime on each child should be subject of observation for the responsible master of each class.

(4.) General ideas of hygiene should be communicated to the teachers of all schools under the Department of Public Instruction, explaining their importance, and hygienic instruction should be given in every school. This should include, at least, the importance of cleanliness, of asepsis, and of general hygiene. In secondary schools the physiological aspect of hygiene should be included in the teaching.

(5.) The upright-system of writing should be adopted up to the age of twelve at least. Some effort to create a sound public opinion on this matter should be made so as to win its support, and to correct the prevailing prejudice in favour of sloping writing.

(6.) The question of fatigue should be systematically considered so as to regulate the future school practice of the State.

(7.) It is desirable that regular school-physicians be appointed to whom children might be referred in needful cases; and, further, that a physician, who has specialised in school-hygiene, should be permanently associated with the Department of Public Instruction to make all necessary hygienic investigations, and to advise on all matters of school-hygiene.

(8.) Hygienic statistics should be taken in every school on a scheme sufficiently extensive to admit of a criticism of our school-methods and conditions.

(9.) All teachers during the professional education should be instructed in systematic school-hygiene, and should be taught to recognise the initial indications of nervous disorder in children.

111

CHAPTER L.—School Equipment. [J.W.T.]

The general plan of construction adopted in our school buildings is not equal to that of Switzerland, America, or Sweden. The long room containing several classes, the arrangement and construction of the desks and seats, the lighting and ventilation, are all, more or less, open to objection.

Repairs should be effected at regular intervals.

CHAPTER LI.—The Educational Equipment of Schools and Museums of Pædagogy. [G.H.K.]

(1.) The present educational equipment of the primary schools of the State needs to be greatly improved.

(2.) There should be at least some simple apparatus for the teaching of the natural science.

(3.) All primary schools should be equipped for manual training, and the teaching of domestic economy should be better provided for.

(4.) The manual training classes should be encouraged to make such simple apparatus as is serviceable in the teaching of natural science.

(5.) A fully-equipped educational museum should be established, preferably adjoining the teaching seminary and its practising school. This museum should contain examples of all new teaching material of value from all parts of the world.

(6.) The opportunities for teachers to keep themselves adequately informed as to educational movement throughout the world are not yet sufficient.

CHAPTER LII.—Inspection *v.* Examination. [J.W.T.]

Inspection is general in every country, and the popular verdict among teachers is that it has made for contentment and efficiency wherever it has been introduced.

CHAPTER LIII.—Co-education. [J.W.T.]

The present arrangements with regard to teaching the sexes should not be changed, but some of the instruction in the special classes of the superior schools might be taught with the greatest advantage to boys and girls together.

CHAPTER LIV.—The Co-ordination of Education. [G.H.K.]

(1.) Primary Education during the obligatory period—6–14, should be divided into four stages, viz. :—Transition Kindergarten, 6–7; Elementary, 7–10; Primary, 10–12; and Higher Primary, 12–14.

(2.) Defectives should not be removed till 8 years of age to special schools.

(3.) The elementary school should meet the need of all classes of the community.

(4.) The ages of 10, and 12, would under this system, be suitable for departure to other special classes of schools (private or otherwise).

(5.) Definite type-programmes, shewing the normal curriculum for each stage, should be prepared for the guidance of teachers and for public information.

(6.) The ultimate possibility of replacing special examinations held by outside authorities by examinations held by the schools themselves should be kept in view in every future attempt to more thoroughly co-ordinate the educational system; since the present method is not the best in the interest of educational thoroughness.

(7.) A definite programme of educational possibilities under existing institutions should be officially outlined from time to time, shewing clearly the scheme of qualification for particular callings.

CHAPTER LV.

CHAPTER LV.—State's Relation to Education, Unification, Subsidy, etc. [G.H.K.]

(1.) The absence of a complete organisation of education tends to operate adversely in regard to the efficiency of public education.

(2.) The general policy of a department of public instruction should be to unify all educational effort in such a way as to ensure efficiency.

(3.) With certain important restrictions, the subsidising of schools has advantages—

(*a*) In relieving the State of expense;
(*b*) In obtaining better equipped and more excellent schools;
(*c*) In promoting a spirit of healthy educational rivalry and ensuring a decentralising tendency.

(4.) There is considerable advantage, not, however, absolutely free from disadvantages, in founding two classes of primary schools in the larger centres of population, in the better of which pupils will pay for the special advantages.

(5.) Ultimately, all primary education, at least, should be free.

CHAPTER LVI.—General criticism of courses of study and standards of instruction of the Primary Schools of New South Wales. [J.W.T.]

The standards in the two classes of infant schools need adjustment.

The teaching of Kindergarten should be general in all infant schools.

The primary school standards should be made to include six years of instruction in six classes.

Our superior schools should make more definite provision for instruction in commercial subjects, manual training, drawing, science, and agriculture.

The equipment in such schools should be on a liberal scale.

CHAPTER LVII.—The Drift of Modern Primary Education. [G.H.K.]

(1.) The drift of modern education may be summed up by saying that better education of teachers, better teaching methods, better hygiene, better schools, better equipments, are characteristic of educational activity in other lands.

(2.) It will be seen by comparing some even of the old programmes of continental schools that here we are much behindhand.

(3.) The most strenuous efforts will be necessary if we are to reach the condition of either Europe or America of to-day in two decades from the present time.

(4.) Modern education is practically orientated, but care is taken not to reduce its educative value.

(5.) Manual training, domestic education, civic instruction, are modern features of great importance; so also is physical culture.

(6.) The classic languages are less insisted upon, and children who are not intended to qualify in any higher branch of education are relieved of them entirely, a good knowledge of the mother-tongue being regarded as sufficient.

(7.) In democratic communities it is necessary, however, to afford opportunity of learning them in the primary school, *i.e.*, before the end of the compulsory period.

(8.) Teaching methods have been vastly improved, and the modern systems of learning languages remove much of their difficulty. This is true of other subjects also.

CHAPTER LVIII.—Rural Schools. [J.W.T.]

The plan of consolidation of several small schools, to form one central higher school, has been tried in the rural districts of America, and has been productive of good results. The scheme is worth a trial in our State.

SYNOPSIS.

SYNOPSIS OF CHAPTERS.

CHAPTER I.

Introduction and Acknowledgments.

[G. H. KNIBBS.]

1. *Significance of Education.*—Although the creation of a Commission, charged with an inquiry covering practically the educational systems of the civilised world sufficiently testifies *per se* the recognition of its necessity and of the significance of the subject with which the Commission has been called upon to deal, it is by no means out of place for the Commissioners to express their consciousness of that necessity and significance, or to voice their sentiment in regard thereto. For, the intensity of their impression that a great deal has to be done here, is certainly a factor in the whole issue; and the vivid realisation of the fact, *that the citizens of this State have educational opportunities falling far short of those in other parts of the world*, is the justification of a fuller and more serious discussion of the issue than would otherwise appear necessary.

2. *Range of its influence.*—While it would seem to hardly need affirmation that no factor in the development of a people or of a country is of such far-reaching importance as its educational system, it is nevertheless true that so far we have not yet adequately realised this in our State. Forasmuch as it evidently lies at the root of, and fundamentally affects, all individual, communal, or national effort, whether industrial, commercial, intellectual or artistic, an educational system tinctures all that a nation is, all that a nation does; it is at once an expression of a people's inmost nature and of its ideal of life; it is the instrument by which the energies of nature are commanded; the means through which exploitation of territorial wealth is made effective; it even confers the power of recognising the actual existence of such wealth; it is the guide and director of effort into profitable paths; and in that great industrial and commercial competition, which forms a feature of ever-growing significance in the modern world, it is the essential of success. It is equally obvious that neglect to improve our system will, and indeed must necessarily, be fraught with serious consequences.

3. *Spirit of the inquiry.*—It was with a vivid impression of the momentous character of such facts as the above that the Commissioners extended their purview over the world's educational systems; and in so doing they have endeavoured, in so far as rapid travel would permit, to trace in national character and national achievement the consequences of the special features of the various systems.

4. *Recommendation for complete educational scheme necessary.*—As the report proceeds to traverse the various matters with which it will be necessary to deal, it will be seen that the real difficulty lies in the fact that no inquiry can be of value unless finally focussed in a recommendation for the creation of a *complete educational scheme*, based not only on a sufficiently wide outlook, but also on an adequate recognition of its inevitable influence on the traditions and spirit of our people, and a realisation that it must constitute one of the greatest factors in our future weal or woe.

5. *Necessity for comprehensive study of whole range of the subject.*—Any *real* inquiry, therefore, having for its object the founding of this comprehensive scheme of public education, must take account of the whole range of the subject, viz., from the most elementary to the most advanced features thereof; it must embrace not only the so-called *cultural*, but also the so-called *practical* elements; it must have regard to every form, from the most theoretical and abstract, to the most practical and concrete; and this would be true, even were the aim merely the establishment of a satisfactory *primary* system. How much more cogently does it apply, when it is desired to so develope a country's educational opportunities as to enable its citizens to *fully* equip themselves for the multifarious duties and privileges of life, and for the development in a worthy manner of its local resources. And when it is said in a *worthy* manner, this must be understood in relation to the world as a whole, for by modern developments of science, the different parts of the earth have been brought more closely in touch in industrial effort, in commerce, in art, and indeed in every element affecting daily life.

6. *Educational System must harmonise with national temperament.*—It may be said further that an Educational System ought to be so adjusted as to continually take cognizance of, and be in harmony with, the temperament of a people; it should take account also of its population-concentration, of its leading forms of industrial activity, of the limitations of organisation, either in respect of material or personnel, of the existing system; and in regard to improvements, it has to be remembered that *practical* recommendations must, while taking full account of present conditions, shew how, with a minimum of violence, to pass from them to better ones.

7. *Necessity for candid admission of existing defects.*—At the same time the Commissioners feel that without absolute candour in regard to the defects of the existing system the necessary changes can hardly be brought about, and therefore that any disposition to hide them, whether small or great, cannot be too strongly deprecated. In every living organism there is a continual removal of effete material, and an addition of new; there is a continual readjustment of the organism to the variations in its environment. Rapidity of waste and repair, and mobility in respect to adaptation, instead of stultifying the character of an organism, are indeed the evidences of its vitality. So, too, is it in the educational system of a people. As the world grows the system must necessarily advance; its effete elements must be continually eliminated, and new elements introduced in lieu thereof; its form must be strengthened and

perfected; it must take full account of changes in the systems of other parts of the world, and, above all, of all human progress. If it appear that our existing system, when considered in relation to the immediate educational needs of our people, is subject to grave, or even to the gravest defects, this does not necessarily imply that, in its day, and under the limitations of the development of a new country, and with our restricted means and aims, and before the great features of the past century's progress have developed, our system was without great merit. That it has been hampered by traditions, methods, and limitations of scope which cannot be longer allowed to remain, if we intend to progress comparably to other parts of the world, argues only the vitality of our people in endeavouring to bring about an adjustment to conditions which have so marvellously changed during the last few decades.

8. *Our system is really* not *satisfactory.*—No one, having any knowledge of the educational systems and educational opportunities of other countries, can regard that of this State as even approximately satisfactory. And it must be said at once that in the range of subjects, in the harmonious development of various grades of education, and in the training of our teaching staffs generally, there are *defects the seriousness of which can hardly be overstated.* That individual achievements here, both as regards teacher and taught, have often been great, and that even great limitations have been overcome by fine examples of personal assiduity and personal genius, in no way challenge the dictum that better opportunity for scholar and teacher ought to be provided; for all education does, and must necessarily, proceed on the basis that educational organisation should be so designed as to admit of the greatest possible progress for a given amount of effort. While, therefore, it may be true that no disadvantages very seriously deter genius, and may even be its stimulus, it is certainly true that the rapid progress of a people as a whole depends upon the excellence of those institutions which stimulate and secure its development. *First among these is its Educational System.*

9. *Value of Educational Systems seen from general considerations.*—It may be remarked that educational systems and their practical value cannot be judged by any system of book-keeping. Peoples who have learned, instead of relying upon tradition and rule-of-thumb, to use their mental powers in all the activities of life, who habitually apply to every industrial occupation the results of scientific research, who in their commercial enterprises make use of the fruits of wide and continuous commercial investigations—such peoples must inevitably advance; and the cost of education, however high, compared with the wealth that will accrue as its fruit, is insignificant.

10. *Belief of modern world in education.*—That the modern civilised world realises, or at least believes in this, is shewn by the magnificent developments in the educational institutions of Europe and America; and in looking upon modern progress—each year more and more rapid,—it is easy to see that the secret thereof is that better knowledge of the world in which we live, that deeper insight into its mechanism and it possibilities which have been acquired as the result of more perfect educational systems, and also the character to rise to the opportunity so reached.

11. *Opportunity here for good education is not equal to that in other parts of world.*—No one, familiar with the young life of this State, can, when comparing with that of other European countries or with America, fail to be impressed with the local absence of scholastic assiduity, which, together with the relatively very imperfect educational equipment of the State, constitute a serious menace to its future. The truth is that our youth have *not* the opportunities of the youth of Europe or America. *The schools and their equipment, even in our metropolis, do not give our people anything like an even chance as compared with those countries, and the life and vigour of our community must be, and is, greatly prejudiced thereby.*

12. *Difference between ill and well educated communities.*—That the difference between a finely-educated and an ill-educated people is fundamental, and affects not only every relationship of domestic, industrial, and commercial life, but also international relationships, is not a theoretical observation, but a stern fact that may be witnessed by anyone who does not permit national prejudice to utterly blind him.[1] And that the educational institutions of many countries have directly and conspicuously benefited their inhabitants is beyond dispute.

13. *Practical importance of education.*—A commanding position in the world's progress absolutely demands of a people physical robustness, and a good education. The reason of this is obvious: not only is self-direction more efficient because it is more intelligent; not only is practical knowledge fuller because more profound; not only is the scientific heritage of the whole world and of all time more directly at command, because with good education an aperçu thereof is immediately to hand;—but the more vigorous mental habit which that education induces is itself a factor of incalculable *practical* value. Moreover, as each advantage accrues it tends to intensify further advantage, and it is for this reason that it has become a necessity, now widely recognised, for each country to take systematic account of educational progress in others, and to profit thereby in regard to its own system.

14. *Competition in modern industry and commerce accentuates necessity for education.*—The histories of modern commerce and modern industry are replete with testimonies shewing how far-reaching are the consequences of good industrial and commercial education, not only to the individual, but also to the State to which he belongs. And it may be noted that it is difficult to assign a limit to the issue, inasmuch as the two factors of national progress and prowess—outside that of personal character—are natural wealth, and the knowledge of how to exploit it. These obviously depend upon education—that is, upon the cultivation of the knowledge and of the powers of a people; and it must be remembered that even the third factor, viz., character itself, is largely determined by certain elements of education, viz., those which affect the moral and æsthetic consciousness, the strength and direction of the will, and the vigour of the body.

15. *Necessity for wide-spread public recognition of the value of education.*—A strong and wide-spread public recognition of the dignity and significance of a good system of education is the indispensable condition of its establishment; and herein lies the strength of many countries through which the Commissioners have travelled. That recognition cannot be said to have yet been created here in any adequate measure; yet it is immensely important that it should be created, for every progression in the higher

[1] The very forcible observations of Mr. Zensaku Sano, which will be hereinafter quoted, touching commercial education, may be taken as representing educated Japanese opinion on the matter.

higher direction reinforces itself by raising public intelligence, and with us, as with America, it is to public intelligence that we must look for the authority and support of a forward movement. Every advance in our educational system is a lever for further advance; and its fulcrum is the development which it has itself produced.

16. *Necessity for immediate action.*—In this State, however, we have so much leeway to make good, and the world's progress has been so extremely rapid, that anything short of a unique effort to reach, within a decade, something like the standard of, say, Europe proper, will be utterly inadequate. So long as it remains true that in some other parts of the world the opportunities for education are *vastly* superior, so long as the systems of education there are on an *incomparably* higher plane, the outlook is grave, and will be seriously regarded by every one capable of any breadth of vision or affected in any degree with patriotism. We may briefly state here that we feel profoundly that the conditions of things at present existing should not be allowed to remain; for the truth is that we are seriously behind. We shall shew that the necessity for a forward movement does not merely touch an item here and there, but goes down to the very foundations of the educational systems prevailing in this State.

17. *Effort to reach issue of inquiry.*—Conscious from the first that our education ought to be brought more into line with the better systems of other parts of the world, the Commissioners have felt with each enlargement of their experience, a deepening sense of the importance of so doing. It is this fact that, perhaps more than anything else, intensified the recognition that anything short of a comprehensive study was quite inadequate. The time allotted was in reality wholly insufficient; but so far as application and exploitation of all available sources of knowledge are concerned, no effort possible in the limited period was spared to reach a satisfactory issue. And the Commissioners have indeed, through the very great kindness everywhere shewn them, succeeded in obtaining a large quantity of information, which, while it will in some measure enter into the conclusions of this report, cannot be exhausted therein; in fact, it will not be possible within the narrow limits of the report, to give more than a faint idea of the range covered.

18. *Primary Education only the initial element in a general scheme.*—There is another reason why the study of education by the Commissioners had necessarily to be comprehensive. Even a primary or elementary system ought to be developed with regard to the higher education to which in many cases it must form a prelude, and with which therefore it ought to be consistent. Primary education should always form but part of a homogeneous and harmonious educational scheme, at the bottom of which it stands appropriately leading upwards to the various forms of higher education. *A fortiori*, a study embracing anything beyond a primary system must take a wider and deeper view of the inter-relations of the higher branches of education.

19. *Reasons determining choice of route.*—In deciding upon their route, the Commissioners were guided somewhat by the educational reputation of each country, and wherever material, organisation, method, or results were alleged to be good, no effort was spared in making full inquiry. Certain countries have been distinguished either for general, industrial, or commercial advance, or for advance in some particular direction. An endeavour was made to trace how far these were dependent upon, were influenced by, or reacted upon, the educational systems of such countries. It ought further to be said that intentionally the Commissioners did not confine themselves only to the best institutions, but tried to get, in addition, some idea of the practical working of each system in its entirety; hence regard was had, not only to metropolitan establishments and those of great and wealthy cities, but also to those on more sparsely populated places.

20. *Place of Europe proper in educational effort.*—Europe proper has for a considerable period been the theatre of the most distinguished educational effort; the *theory of education* has been there discussed with an unsurpassed acumen and depth; there the equipment of greater institutions is from every point of view astonishingly excellent; and there recent progress has in every respect been as extraordinary as anywhere in the world. The Commissioners consequently spent a considerable proportion of their time in Europe proper, and in reviewing the whole of their investigation are able to say that the course followed was a wise one. The feature of American educational experience, on the other hand, is the startling rapidity with which *experiment* has followed experiment. A visit to that country, therefore, appropriately concluded the Commissioners' tour of inspection.

21. *Acknowledgments.*—The Commissioners desire to express their grateful appreciation of the invaluable assistance of the Right Honorable the Marquess of Lansdowne, Secretary, and His Brittannic Majesty's Foreign Office. Through his introductions on behalf of the Commissioners, and his request of assistance to His Majesty's representatives in various countries, their work has been greatly facilitated. It would be difficult also to speak in too high terms of the extremely kind offices of the following Ambassadors, their Chargés d'Affaires, and in most cases of the Secretaries of their Legations:—

The Right Hon. Sir F. R. Plunkett, G.C.B.	Austro-Hungary.
The Hon. Sir Edmund C. H. Phipps, K.C.M.G.	Belgium.
The Hon. Sir Wm. E. J. Goschen, K.C.M.G.	Denmark.
The Right Hon. Sir Ed. Monson, G.C.B.	France.
The Right Hon. Sir F. C. Lascelles, G.C.B.	Germany.
The Right Hon. Lord Currie, G.C.B.	Italy.
The Hon. Sir Henry Howard, K.C.M.G.	Netherlands.
The Hon. Sir Chas. S. Scott, G.C.B.	Russia.
The Hon. Sir Wm. A. C. Barrington, K.C.M.G.	Sweden and Norway.
The Hon. Sir Wm. Conyngham Greene, K.C.B.	Switzerland.
The Hon. Sir Michael H. Herbert, K.C.M.G.	United States of America.

And of His Majesty's General and Vice-Consuls, etc.—Mr. Consul C. J. Cooke, of Helsingfors, Finland; Mr. Consul J. Duff, of Göteborg, Sweden; Mr. Consul-General M. C. Gurney, Marseilles; Mr. Consul Payton, and Mr. Vice-Consul Walker, Lille; Mr. Consul Liddell, Lyons, France.

In most cases His Majesty's representatives not only secured suitable official introduction to the proper authorities in each country, but also personally interested themselves, with the result that the Commissioners' work was both greatly accelerated and more efficiently discharged. But for this assistance, it

it would have been quite impossible to cover so large an area in the time. Our State is, therefore, under very great obligations for the courtesy shewn, and for the kind assistance so generously given to, its Commissioners by His Majesty's representatives.

22. *Official and unofficial courtesies received by the Commissioners.*—In each country visited the chiefs of the Public Instruction Departments, their officers, the various directors and professors of the learned institutions, and the public officials generally, have all been most cordial in their assistance, and in many cases also, public spirited citizens; and the Commissioners take this opportunity of publicly expressing to them their warmest thanks. It ought to be added that, owing to the *range* of the inquiry, as well as the *extent* of the *country* to be covered in a very limited time, great demands had very often to be made upon the good offices of the public officials of the various places visited. Without making such demands it would have been quite impossible to have accomplished the task. These, however, were met in the most ready manner, and it would indeed be difficult to speak too strongly both of the personal and official kindness shewn the Commissioners. For such good offices, therefore, the hearty thanks of our State are also due, forasmuch as in the absence of such obliging help, it would not have been possible to have properly succeeded in the mission of inquiry.

The Commissioners desire also to express their appreciation of the kind offices of the Consular representatives in Sydney of the various countries they visited. Before starting on their journey the Commissioners called on the several Consuls, who, in addition to providing them with official letters of introduction, were good enough also to communicate with their several Governments, and in this way much facilitated the work of the Commissioners.

It ought also to be added that the Commissioners are indebted to the late Acting Consul-General for Germany, Mr. H. Grunow, for his services in Berlin in communicating with the Foreign Office there with a view to facilitating the official inspection of German schools.

Finally, it may be said that the professorial staffs of the various learned institutions visited did their utmost to make the visit of the Commissioners both instructive and agreeable.

CHAPTER II.

Range of Inquiry.

[G. H. KNIBBS.]

1. *Character and range of continental education.*—The characteristic features of the best continental systems of education are thoroughness of method, and extent of range; and they are, speaking generally, the product of acute observation and exhaustive criticism, not only as to theory, but also as to method and practical result.

2. *Education organised on military and industrial bases.*—Reference has already been made to the fact that the traditions and temperament of a people have to be considered in relation to any really thorough educational inquiry. This will be best illustrated by contrasting, for example, the German educational atmosphere with the American, and will throw some light upon the sense in which the term "range of inquiry" must be understood. The German organisation is throughout on a military basis, America on an industrial; the one country is aristocratic in its traditions, the other democratic. Social movement in the one is mainly, if one may so speak, in well-defined horizontal strata, and translation upward is subject to some resistance; in the other there is free movement vertically.

3. *Cultural and practical aims.*—As pointed out by Mr. Sadler[1], in Germany the basis of all education is definitely linguistic and an idea of general culture is maintained; while in America manual and practical exercises receive continually increasing prominence, and more stress is laid upon mental alertness and adaptability, than on general culture. Hence the ideals aimed at in the two places are quite different, and this affects the whole work of the school. For in the one the work is quiet, methodical, persistent; in the other it tends to be restless and less methodical, and persistency gives place to a strenuousness apt sometimes to be effervescent. The pædagogic atmosphere is also altogether different. In Germany there is a general and profound respect for learning, as such; while in America, the appreciation seems to be for the genius of applying knowledge to the so-called *practical* needs of life.

Now it is beyond dispute that, in drafting an educational system, such differences as are here illustrated must tremendously affect the result. How far is this country to follow continental ideals and methods, or how far those of America, is a question the solution of which is not quite so obvious as a superficial view might allow.

4. *Study of details in educational scheme not adequate.*—It will now clearly appear that mere observation of educational detail, such as has been suggested, with a view of grafting some particular item or items on to an existing system—as for example that of our State—is quite inadequate. It would be at once recognised, both in America and on the continent of Europe, as a complete failure to conceive the problem in its true light. All elements of education are moreover, inter-related, and it is owing to this fact that the subject had to be studied in its entirety and in relation to its fundamental principles and

[1] "Contrast between German and American Ideals of Education." Special reports on educational subjects, Vol XI, Part 2, p. 438.

and theory and in relation also to the spirit of the Australian people. With respect to the necessity of regard to theory, it may be pointed out, for example, that the real function of the "Kindergarten," or of "Slöjd" cannot be properly understood or appreciated without such regard. And this is true also of the whole methodology of instruction. No one can be a real expert in education without having some appreciation of its philosophy, and of its psychology—that is, without perceiving in a broad way what is the whole aim of education, and what noëtic and psychic factors enter into its methods and affect its efficiency. *Instruction is not* per se *education, but is only a factor therein*; and the subtle part of the whole subject lies just here.

5. *Methodology and range of education.*—Speaking broadly, it may be said that the *methodology of education* has for its aim, not only the ready acquisition of organised knowledge, but the acquisition in such a way that it so transforms its subject as to be productive of rich result—that is, will be useful, inspiring, and creative; while the *range of education* must have regard, not only to the so-called practical requirements of mankind, but also to the rounded development of its powers and qualities as a whole.

6. *Lower and higher views of education.*—The lower utilitarian view, which regards education *merely* as a training to earn a livelihood, may be at once dismissed as requiring no attack. The higher view, viz., that all education may be so treated as to become an instrument of self-discipline and self-culture, not only without in any way impairing its practical value, but in such a way as even to *increase its utility*, obtains universally among educational experts, and with everybody who gives the matter serious consideration. Indeed, the history of education, of literature, and of science, abounds with illustrations of this point, and shews that abstractness, generality, and cultural value are absolutely consistent with the highest and most far-reaching utility; while on the contrary the so-called practical view, which professes to despise the theoretical and abstract, everywhere shews signs of utilitarian failure. It is for this reason that the great educational experts of Europe and America are, so far as principles are concerned, in absolute agreement as to the higher view. This fact is mentioned as explanatory of the attitude of the Commissioners in regard to the scope, manner, and subject-matter of their inquiry.

7. *Subjects considered in inquiry.*—Among the questions or subjects to which the Commissioners directed their special attention, and which they studied and discussed with experts, are the following, viz.:—

THEORY OF EDUCATION.

The Philosophy of Education. Its fundamental ideas and principles. Multiplicity and unity of its aim. Physical in relation to moral and intellectual development. The formative functions of Education.
The development of the mind in respect of intellect, and of imagination. In relation to originality and consistency of thinking. In relation to the disposition (or passive character). In relation to the will (or active character).

EDUCATIONAL PSYCHOLOGY.

Psychology in relation to pædagogy in general.
Psychology in relation to the child-mind and its development.
The harmonious cultivation of the mental and physical powers.
The development of receptivity; and the cultivation of habits of observation.
The development of mental concentration.
The intensification and fixation of mental impressions.
The deepening and significance of apperception.
The acquisition of readiness in memory, and the strengthening of its various types.
The stimulation of initiative and of the originating and inventive faculties.
The function of the so-called heuristic, socratic, catechetic, acroamatic, and other methods of education.

METHODOLOGY.

The theory of methodology in general. In the teaching of—Ancient and modern languages, and their structure. The mathematical sciences. Physical science and chemistry. Natural history. The various forms of geography. Art subjects. General knowledge.

JUVENILE MILITARY EDUCATION.

The appreciation of the national duty of self-defence.
The creation and cultivation of the patriotic spirit.
The relation of the school to the military system.
The cadet system.

THE KINDERGARTEN AND INFANT-SCHOOL GENERALLY.

Function of the infant school and of the kindergarten in its various forms.
Forms of manual-training and their significance.
Stage at which they should enter into an educational scheme.
The cultivation of sense of form, colour, sound, muscular-sense, touch, etc.
The moral sense and its development.
The æsthetic sense and its education.
The formation of will and character in school-life.
The fundamental ideals of life and their relation to early education.

THE PRIMARY SCHOOL.

Subject-matter and scope of primary education.
Limitation of its range.
Age of commencement.
Effect of sex upon particular elements of education.
The question of co-education in primary schools.
Consequences of a *National* or *State* system.
Qualification of primary school teachers.
The equipment of primary schools.

THE SECONDARY SCHOOLS.

Subject-matter and scope of secondary schools.
Age of departure from primary into secondary education.
Question of sex and its consequences upon education.
Necessity of a flexible scheme.
Necessity for generality in the earlier stages of education.
Partition of effort as between ancient languages, modern languages, and the sciences.
Point at which intended career should determine the differentiation of study.
Questions of mode of teaching various subjects.
Qualification of secondary school teachers.
The equipment of secondary schools.

CONTINUATION SCHOOLS.

Continuation schools and their functions.
Scope of continuation schools.
Advantages of a State system.
Qualification of teachers.
Equipments.

OTHER BRANCHES AND HIGHER EDUCATION.

Industrial and trade schools.
Schools of Commerce.
Art schools and schools for the decorative arts.
Lower technical schools.
Higher technical schools.
Agricultural schools.
Dairying and farming schools
Housekeeping schools.
Other professional schools.
Universities.

THE TRAINING OF TEACHERS.

For primary schools.
For secondary schools.
For professional and technical schools.
For Universities.
For special schools.
Normal schools and their equipment.
Museum and library of pædagogy, and of pædagogic material and of school-hygiene.
Libraries of science and technology.

SPECIAL SCHOOLS.

Schools for the mentally defective.
Reformatory schools.
Schools for deaf, dumb, and blind.

SCHOOL-HYGIENE, PHYSICAL CULTURE.

School buildings and their design.
School sanitation.
School bathing.
Cultivation of the powers and care of the body.
The relation of school-equipment to health.
Gymnastic training.
Military drill.
Other forms of physical development.

GENERAL QUESTIONS.

School discipline and corporal punishment,
The care of schools and caretakers.
Directors of schools and their duties.
Teachers of schools and their extra-official activity.
Maintenance of efficiency. Examinations. Inspectors.
The higher activities of schools and of teachers and inspectors.

8. *Relation of independent subjects to systematic investigation.*—An investigation of subjects does not really constitute an inquiry into education; it ought to be added, therefore, that the subject was also studied in its unity. The essential characteristics of such an investigation are outlined in the next chapter.

CHAPTER III.

CHAPTER III.

Education and its Investigation.

[G. H. KNIBBS.]

1. *Nature of an investigation of education.*—The nature of a *real investigation of education*, as distinguished from a *mere inspection of its machinery*, involves a reference to the general theory of pædagogy. This reference can only be in outline, because it is hardly the function of the Report to develope the general theory. Its object is to reveal the essential features of a thorough inquiry into educational systems.

2. *Outline of the general theory of Pædagogy.*—Pædagogy may be divided in two branches—(1) Practical Pædagogics; (2) Theoretical Pædagogics. The former deals with the following:—

PRACTICAL PÆDAGOGICS.

- Practical Pædagogy
  - Forms of Education
    - Individual Education in
      - Private.
      - Public.
    - Collective Education in
      - Private schools.
      - Public schools.
  - Organisation of Education
    - Personnel.
    - Material.
  - Forms of Administration
    - Legal
      - Law of Education.
      - Administration of Law.
    - Departmental
      - Control of the preparation and training of teachers.
      - Supervision to ensure efficiency.

These subjects may, of course, again be subdivided, but the range of practical pædagogy is sufficiently indicated, and it is easy to see the type of questions that at once arise. For example, that of the State's relation to private and public education, at once suggests itself. Some idea of the way in which these questions open out, may be had from the following brief indication of the most obvious and important subordinate elements:—

(*a*) Relation of State to Private Education in regard to—
- (i) Individual liberty in private teaching.
- (ii) Efficiency of private teachers.

(*b*) Policy of State as regards Public Education in respect of—
- (i) Establishment of State schools.
- (ii) Condition of school-attendance. Free or otherwise.
- (iii) Obligations on the State's subjects. Compulsory or optional education.
- (iv) Schools privately organised, as to whether their liberty shall be absolute or subject to laws ensuring efficiency.
- (v) Unification of educational scheme, and co-ordination of different grades of education.
- (vi) Grade of education required of teachers, or of the community generally, etc., etc., etc.

But to pass on to the second branch—(2) Theoretical Pædagogics. This may be subdivided as follows:—

THEORETICAL PÆDAGOGICS.

- Theoretical Pædagogy
  - Purpose of Education (Teleology)
    - Development of Body — Physical Culture.
    - Development of Mind
      - Senses.
      - Memory.
      - Imagination.
      - Intellect.
      - Emotion.
      - Will.
    - Development of Soul — Personal Character.
  - Means of Education (Methodology)
    - Guidance (Hodegetics)
      - Control.
      - Moral Training.
    - Instruction (Didactics)
      - General Aim.
      - Special Aim.

3. *The supreme purpose of Education.*—Here again each subject divides itself. First of all it may be asked, "What is the purpose of education?" That question has been exhaustively discussed from every point of view. Without going into its detail, it may be said that, however much unthinking popular views may differ therefrom, educationists are practically in agreement that the *moral education of the will is the highest purpose of education*, that aim including through its perhaps unrealised comprehensiveness, every other good of education;[1] and it may be taken as settled that all responsible opinion fundamentally agrees with Dr. Rein's when he says, "The educator ought to so educate his pupil that his future personality will *harmonise with the ideal of human personality.*"[2] That dictum places all other aims as subordinate and ancillary.[3] This aspect of the matter is treated in the chapter on "Ethical and Religious Instruction and Education." The supreme aim of education is the development of personal character.

4. *Physical culture in relation to Education.*—In the view of Plato, the two great causes of human depravity were ill-directed education, and the corrupt influence of the body on the soul, and he urged the claims of mental and physical culture (music and gymnastic).[4] The importance of physical culture has been recognised in recent years in a remarkable way, and a rational system has been developed.

This is outlined in the chapter on "Physical Culture, Gymnastics, etc." (Chap. XVII), where it is shown that rational physical education depends mainly upon physiology and psychology, this fact explaining in part the appreciation of these subjects as items in the training of teachers in Europe and America.

The true teacher must ever be interested in the bodily growth and vigour of the child, and he should understand, therefore, the theory of general and school-hygiene, and the theory of health. School-hygiene is discussed in Chapters XLVII to XLIX.) The dependency of the health and power of the mind upon physical health, and the value of guarding against defective dispositions and functional defects of the nervous systems of the rising generations during the formative period of life (the school-years), reveal the importance of the question of physical education both to the individual and the State.

5. *Mental Education.*—In order to reach the purpose of education, the all-round development of the mental faculties is essential.

Element.	*Qualities to be Developed.*
(1) Senses	Discriminative precision, (quantitative and qualitative).
(2) Memory	Receptivity, range, retentiveness, recollectivity.
(3) Imagination	Versatility, vividness.
(4) Intellect	Intuition, ratiocination, analytic and synthetic power.
(5) Emotion	Delicacy, force, range.
(6) Will	Tenacity, energy.

Thus the education of the young may be said to involve operation on each of these mental elements with a view to developing them, that they may more efficiently contribute to the chief purpose of life.

Education, in this view, demands on the part of the educator a knowledge at least of psychology, and it may be also said of philosophy; and a full inquiry into the part played by these subjects is truly a part of the investigation of educational processes.

Consider for a moment memory alone, how much depends in practical life upon its right use, upon the possession of a well-trained, receptive, and retentive memory, alert to every side of a subject or fact. This may be taken as a typical illustration, for it is true in respect of other things depending upon psychology and philosophy.

6. *Theory of Guidance.*—Hodegetics has, as previously indicated, two branches,—

(A) The theory of control or discipline.
(B) The theory of moral training.

The former is concerned with external discipline, or the regulation of individual and of individuals from *without*, while the latter aims at regulation from *within*; that is, through the disposition and character.

Inasmuch as human beings have to live socially and communally, and spontaneous and uncontrolled self-expression is not uniformly agreeable, all have to learn—

(*a*) To submit to social and communal restraints.
(*b*) To acquire respect for other personalities as a ground for self-control.

Impulse, unbridled power, reckless impetuosity, must be held in check either by the child himself, or by adequately strong means from without, and the child has to learn the existence of and respect for authority.

The measures that are involved in controlling, or rather eliminating disorder, incivility, etc., are of two kinds, viz., those that—

(i) *Prevent* disorder, etc.;
(ii) *Suppress* disorder, etc.

The discussion of (i) and (ii) involves a consideration of the theory of punishment and supervision.

7.

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[1] Professor Dr. W. Rein says:—"Haben Kant und Herbart recht, dass der Wille das eigentliche Objekt aller ethischen Wertschätzung bildet, so geht daraus mit unabweisbarer Gewissheit hervor, dass die sittliche Bildung des Willens als oberster Erziehungszweck angesehen muss." (If Kant and Herbart are right, that the will forms the proper object of all ethical estimation, then it follows with undeniable certainty that the ethical culture of the will must be viewed as the supreme purpose of education.)—"Pädagogik," p. 71. [2] *Ibid.*, p. 2. [3] Les méthodes régnantes, elle ne travaille pas encore assez à la formation du caractère et voit trop son rôle dans la communication d'une close plus ou moins forte de savoir. . . . . On ne cesse de répéter qu'enseigner est peu de chose, qu'il faut savoir instruire, ... rendre l'esprit plus vif, *mais aussi le caractère plus élevé.* (The prevailing methods do not yet sufficiently aim at the formation of character, and view their work too much in the light of communicating a greater or less amount of knowledge. . . . . One can only ceaselessly repeat that teaching is a small matter; it is necessary to know how to instruct, ... to make the mind more eager, *but also the character higher.*) Les écoles primaires. F. Guex, p. 190. [4] "The Republic." Books II, III.

7. *Theory of Punishment, Supervision, etc.*—The prevention of disorder is attained by—

(1) Suitable occupation—*i.e.*, work and recreation—which keeps the minds and wills of the children occupied, thus regulating their conduct.

(2) Supervision in which disorder of all forms is extinguished in its incipent stage.

These matters require no comment.

To (ii) belongs *punishment.* The infliction of which, experience has shewn, cannot be avoided. This may take the form of—

(ii) 1. Punishment increasing *insight* into conduct (punishment which acts by *warning*).

2. Punishment influencing the will (*moral* punishment).

3. Punishment discouraging certain acts (*deterrent* punishment).

The function and operation of punishment, it may be said, is much better understood by educationists, and the insolence, cruelty, and stupidity of making corporal punishment one of the most frequent instead of the most rare aids to education, is widely recognised.

In many places it has theoretically disappeared, as in our State, except for flagrant offences against discipline; but it still exists.

In other places it has altogether disappeared, except where it is used as the last resort, and consequently expresses the strongest form of *disgrace*, short of *expulsion*. Corporal punishment *tends* to lower the self-respect of both master and pupil *in all cases.*

A better understanding of psychology has shewn that discipline should be *directive*, not *coercive*, and the significance of this on the character, is indicated in the chapter on "The Education of the Will." (Chap. XVI.)

Briefly, it may be said that the true teacher will be felt by the pupil to be his friend, and be esteemed as such. Punishment, therefore, ought to be so regulated as to awaken the pupil from his (often) unthinking conduct to *reflection* or introspection, and this is its normal function. He must always feel that it was deserved.

It is recognised that since punishment, to be effective, must be an *unusual* disturbance of the emotional life, it ought to be *rare*, for *repetition dulls its moral effect.*

Free obedience leads to moral independence, and to secure it, is a real education of the will, because it means leading the pupil to exercise self-control instead of *coercing* him.

8. *Theory of Moral Training* (*self-control*).—Turning to the second part of the theory of guidance (B), from Plato to Herbart it is recognised that "to make the pupil himself choose the good and reject the evil," is true education of character.[1]

Throughout Europe and America it is now recognised that the teacher who has neglected psychology is seriously lacking in professional qualifications. From the kindergartner up, all are required to study its contributions to and meaning for pædagogy.

The ideal of the school, with the great educationists of the world, is a fusion into what may be called a *united moral personality*, the head of the school standing as its representative, and each teacher and pupil in his degree contributing a quota to its character and force. Concern for the reputation for character and intelligence of the little school-community can be made the instrument of progress, through a generous emulation.

In most countries the following are regarded as playing an important part in moral education:—

(1) School devotions and religious exercises.

(2) School celebrations of every kind.

(3) School offices of honour, monitorial duties, etc.

(4) Study of individualities. (Character sketching.)

The general aims of moral training should be:—

(i) To restrain and regulate, so as to confer on the pupil stability of character.

(ii) To lead to self-determination by the pupil; but at the same time

(iii) To inhibit unwise self-determination.

Put briefly, it may be said that the value of intimacy of relation and personal moral influence is thoroughly and practically recognised by teachers in other lands, and in very many places seen by the Commissioners there was a most real affection on the part of the pupils for the teachers, which after all is the only condition allowing of their personalities being made operative on the children. It is that direct and friendly influence by which discipline is made easy and efficient, and through which children can be inspired to effort.

It is only with the old-time empirical teacher that the corporal-punishment discipline remains. Better understanding of the reactions of human feeling to moral treatment have forced a recognition of its demerits.

The modern teacher looks for the cause of disciplinary failure in himself, and does not propose to find the corrective in producing pain in his pupil.

Not only elsewhere, but also in this State, the beneficial influence of *directive* discipline is easily seen wherever it exists.

9. *General Theory of Instruction.*—As previously mentioned, *didactics* include two elements, viz.:—

(*a*) The general aim of instruction (general didactics).

(*b*) Its special aim (special didactics).

Each branch deals with the—(i) Selection, (ii) Inter-relation, and (iii) Treatment, of the material of instruction, the former with regard to its general aim, and the latter with regard to the special aim of each subject.

In regard to (*a*), the *supreme* purpose of education has already been indicated in section 3 herein. Kant held that the normal education of a human being should initially aim at—

(1) The transformation of the sentiments; and

(2) The foundation of the character.

Herbart agreeing with this, attaches great importance, as also does Rein, to what may be called the *circle of ideas* or *sphere of thought* developed in the human being, for these are what give tone or character

[1] Machen, dass der Zögling sich selbst finde, als wählend das Gute, als verwerfend das Böse: das ist nach Herbart sittliche Charakterbildung. Rein, Pädagogik, p. 121.

character to his life. Bearing in mind that character lies in the nature of the will, and that separated from all ideas the will is undetermined, it is evident that our character of self-expression depends upon the ideas and thoughts through which the will is habitually solicited. There are three chief forms in our inner or *psychical* life, viz.:—

(i) Representation (mental); (ii) Feeling (or emotion); (iii) Striving (or desire).

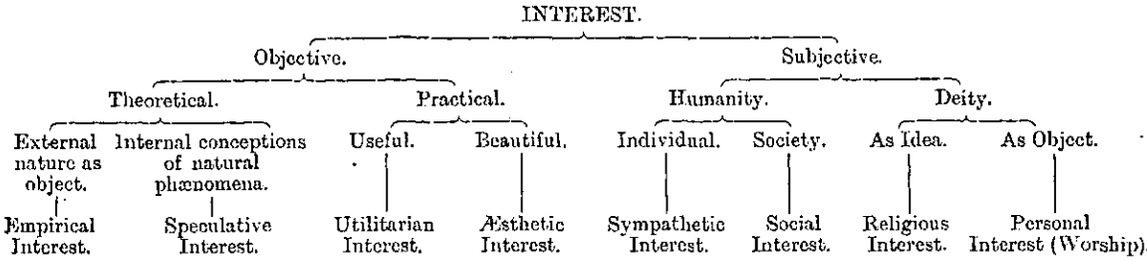
Knowledge in itself may, of course, consist of facts that in no way touch the will or solicit to action; and though we are not wholly without the capacity of appreciating that which lies in what may be called the plane of pure intelligence, where the self as such is in no way involved, practical life is concerned with a very different state of things, viz., that where ideas invoke interest and incite to action.

The general aim of instruction may consequently be described as that training of the sphere of thought in such a manner as to develope personal activity of a beneficial kind. The scheme of development may be indicated as passing through the range—

Knowledge———Interest———Volition.

In order that the human sympathies should have wide range—in other words, in order that all men and things should have interest for the individual—it is important that instruction should be so designed as to create *generality of interest.*

10. *Theory of Interest.*—It is a trite observation that we learn almost nothing in regard to which we have absolutely no interest. Educationists have consequently recognised that to be excellent the art of the educator must invoke interest, and that it is *not* sufficient unless the interest be *many-sided.* The possible range of human interest will appear from the following outline:—



According to Rein, instruction is *truly educative* when it begets in the pupil—

(i) A deeply penetrating, many-sided, permanent interest; when it assumes
(ii) A moral-religious interest of the necessary strength; and when it vouches for
(iii) A unity of consciousness as a basis for the development of a personality of strong character.[1]

11. *Determination of the Matter of Instruction.*—The general aim of instruction has to be conceived in a double relationship, viz.:—

(*a*) In relation to the child as an individual; and
(*b*) In relation to the child as a unit of society.

First, in regard to the child as individual. Goethe's observation, that "the human mind receives nothing but that which suits it," at once suggests the fundamental law in determining the matter of instruction. This law is:—

(i) Instruction must be adapted to the degree of comprehension or stage of apperceptive development to which the child has attained.

It is only in this way that instruction can create in him the requisite interest. Unless he thoroughly grasps its matter he will neither be interested nor will it operate favourably upon his character. The second law is:—

(ii) The instruction must be adapted to awaken in the child not only self-consciousness, but also consciousness of his relationship to society (humanity).

This perception of the relationship with the world at large is very important, as it is the necessary foundation for large sympathies, large outlook, and broad culture. In his mental development, self-realisation and realisation of the world in which he is in contact, ought to proceed *pari passu.* It is further to be observed that so long as the citizens of the world are aggregated under national divisions, so long will it also be important, that in the thought of his own progress, development, or achievement, each child shall identify himself with his own family, community, nation, and by natural enlargement finally extend his sympathy to humanity. In this way his personality is developed through an ever-widening sphere of sympathy, which, while it can stimulate to the highest his *patriotic* feeling, will also deliver him from narrowness and insularity. This extension of his thought and feeling in regard to relationship, viz., from self to humanity—that is, through the range—

Self—Family—Community—Nation—Humanity,

is an element of education, the importance of which can hardly be overstated. The area of sympathy depends on the area of consciousness, and this is why the teaching of History is so important, and why even from the first its more massive and striking facts, rather than its detail, should be imparted.

12. *Co-ordination and Concentration in Instruction.*—In the endeavour to impart instruction to his pupil, the educator is forced through two reasons, viz.:—

(*a*) An ethical one; and (*b*) a psychological one,—

to co-ordinate all material of instruction, and to concentrate his own and his pupil's thought thereupon, in order that its moral influence shall be a maximum, and that what may be called its *unity in his consciousness*, shall be complete. The infinite variety of things that touch feeling or thought have through personality to be organised, so as to stand, as it were, in some unity of relationship. Rein quotes

[1] *Op. cit.*, p. 86.

quotes Stoy as saying :—"Instruction can scarcely be better represented in thought, than under the form of a symphony, in which at different times a single voice takes up the motive, then retiring and making place for another, finally all harmoniously unite in a grand stream."[1] This conveys something of the right idea, viz., that through all the variety of teaching there should be a unity which the consciousness of the pupil will ultimately learn to recognise, the end being a well-organised body of knowledge.

13. *Sphere of Ideas.*—Reference has been previously made to the function of our sphere of ideas upon character. The real nature of cultural education cannot well be perceived without some explanation in regard to this. To the educational empiric there is no need to attend to anything but *subjects*. His conception is that this or that subject is useful, either as mental gymnastic or in practical life. This idea is, of course, wholly inadequate.

There is a species of antithetical parallelism between the two great divisions of matters, with which education is concerned, that can be represented as follows :—

SPHERE OF IDEAS.[2]

(A)	(B)
Experience.	Intercourse.
Material environment.	Personal environment.
Nature.	Life.
Knowledge.	Participation.
Broadening of experience.	Broadening of intercourse.
Natural Science.	Historical subjects.
Realistic direction.	Humanistic direction.

General education given in *educative* schools.

Many subjects of instruction lie definitely in one of the two regions (A) or (B). For example, Pure Mathematic belongs to (A), and Pure Literature to (B). Others lie in both ; for example, Geography may lie in both regions.

Some idea of the relation of the whole to educative instruction, may also be had from the following grouping of subjects of educative instruction :—

EDUCATIVE INSTRUCTION.

Two spheres of subject matter.

Man. Humanistic subjects.			*Nature.* Naturalistic subjects.		
I	II	III	III	II	I
Ethical.	Informative.	Aesthetic.	Physical.	Informative.	Intellectual.
Sacred History.	Literature.	Drawing.	Manual	Geography, etc.	Mathematic
Ethics.	History.	Modelling.	Training.	Natural Sciences.	Logic,
Religion.	Languages.	Art Subjects.	Gymnastics.	Natural History.	etc.
		Singing.	Games.		

The above should be taken as merely suggestive of the organic relationships of subjects of knowledge.

In the development of a curriculum, it is held that what is known as educational atomism (*Atomismus*) should be avoided ; *a curriculum should not be a mere aggregation of material*, but should take account of—

(*a*) Ethical purpose.
(*b*) Psychological and historical gradation of subject-matter.
(*c*) Correlation of various parts of material of instruction (which after all is a re-expression of Plato's doctrine).

14. *Formalism and Idealism in Education.*—Educationists have been divided upon a matter of great importance, and which also affects teaching a good deal, viz., whether the material of instruction should be selected as a means to an end, and with regard to its formative value for the *understanding* ; or whether it should be selected on account of the value of its content, and its formative value as regards the *disposition*. The former is known as formalism (*Formalismus*) and the latter as realism (*Realismus*).

15. *Didactic Materialism and Psychological Realism.*—In regard to the treament of the subject matter of instruction, the two views presenting the strongest antithesis are what are known as :—

(*a*) Didactic materialism.
(*b*) Psychological realism.

In the former, the method of teaching depends on the *subject*, not, as in the latter, upon *the capacity and development of the pupil*. The ordinary teaching of geometry in this State, namely, the following of Euclid through his several books,[3] is an example of didactic materialism in teaching.

The philanthropists sought to put teaching-methods on a somewhat higher plane than this lowest of all teaching-methods, and Pestalozzi endeavoured to adjust teaching to the capacities of the pupils at each stage of their development.

The methods known as Socratic, heuristic, acroamatic, catechetic, demonstrative, practical, mechanical, etc., have disappeared as independent methods with educationists of eminence ; so also have the so-called analytic and synthetic methods, as representing the true expression of educational method. These are matters which every *true* teacher ought to consider, and upon which he should have an opinion.

16.

[1] Stoy, "Encyklopädie der Pädagogik," p. 11. [2] *See* Rein, "Pädagogik," p. 103.
[3] The truths of geometry are easily learnt, and are interesting, but the detestation of Euclid's Books is very general.

16. *Modern Teaching-method and its Psychological Basis.*—In modern teaching-method, which, however, is not that of this State, it is recognised that it is essential to take into account:—

(*a*) The intellectual constitution of the pupil.
(*b*) The psychical process in the child-mind.

To do this properly all teachers should have studied psychology, which in this State they do not, even in the Training College, *a fact which tells its own tale.*

"Perceptions," said Kant, "without general notions are blind, and general notions without perceptions, empty;" hence, if this dictum be accepted, the true teacher must derive from psychology a knowledge of how to make his pupils form clear percepts, and clear concepts of the subject-matter of instruction. This is achieved through apperception and abstraction, that is to say:—

(i) Distinct percepts depend upon *Apperceptions.*[1]
(ii) „ concepts „ „ *Abstraction.*[2]

The methods of subject-preparation and of individual lesson-preparation consequently involve a knowledge of what psychology has to teach in regard thereto. Each of these topics is a field in itself. As the object of this chapter is merely to explain the true nature and range of an educational investigation, the details of the theories of apperception and abstraction must be left untouched. It will suffice to mention that modern teaching is guided by psychology, and aims at changing ordinary perception into *apperception.* Each new item of knowledge must be perceived not in its isolation, but in its organic relation to the conceptions already in possession of the mind; that is to say it must be *significantly* perceived. Through *apperception* and *abstraction* clear, sharp-outlined concepts are finally formed, which, however, are significantly related to other concepts in the mind.

This will sufficiently indicate the true method of teaching, and why all over Europe and America *children* are not considered qualified to teach.

17. *Conclusions from Theory of Education.*—From the preceding sketch, outlining the subjects with which education is concerned, and giving some idea of its detail, it will be seen that education is really a *science,* as well as an *art.* As a science it may be said to be dependent upon general researches in regard to the phænomena of development both of the body and of the mind. As an *art* it may be viewed from two standpoints:—

(*a*) The Empirical.
(*b*) The Rational.

In *any* examination, that is either empirical or rational, teaching processes, organisation, teaching equipment, scheme of training, and the whole machinery through which the results are attained, would of course be studied. If the examination be *purely empirical,* the reason of each step in the process would not be inquired into, and judgment as to efficiency would necessarily be based on the mechanical elements of efficiency—for example, the ability to pass examinations conforming to certain prescribed standards, or in some such mechanical way.

If the examination be *rational,* the elements of the curricula are important *not so much in themselves, as in regard to what they aim at.* An empirical educationist will always be satisfied to witness process and machinery, and to ask for tangible results; a rational educationist will inquire as to reasons of organisation and aim, and for results on mind and character as expressed in the disposition, characteristics, practical power, and general intelligence of the people as a whole.

18. *Empirical and Rational Education.*—First, in regard to former educational method.

As has been shewn, *Empirical Education* is education that does not concern itself with the organic functions of education; and to the empiric, Plato's idea of its *unity* is without meaning. The way in which an empirical scheme of education arises may be explained as follows:—

Stage 1.—To "read, write, and cypher" are useful and necessary accomplishments, so that human beings may understand one another, and deal with the most urgent of the practical affairs of life. Let them, therefore, be made subjects of instruction.

Stage 2.—A little Grammar, Geometry, Algebra, and Book-keeping, etc., are now commonly needed; let them be added.

And so it goes on from stage to stage, subject after subject being added; a little manual training, perhaps; agricultural teaching; and anything else that may suggest itself as *useful,* so far as the time available will permit.

This fairly represents the growth of a curriculum under empiricism; it includes this or that element because it will "be useful in after life," etc., and, properly speaking, it has no general *theory of education,* and no real recognition of the body of instruction as psychically organised.

Rational education is totally different from empirical education. Even if the curricula under the two systems were identical, it would still be totally different; and this is one of the reasons why a superficial examination of education is of such inferior value. It recognises only *subjects of instruction, equipments,* and the *machinery* of education. But these things throw little light upon its *real* nature. For education that is cultural, which acts on the will, which favourably moulds the character, which awakens the mind to the issues of its own existence, which endows it with the power of thinking, may use exactly the same machinery; but it not only secures all that the empirics can secure, it attains to the higher end of moulding the character of a nation. *Subject instruction never does that.* It is this *great fact* that has once and for all swept away the empirical conception as an adequate expression of what is necessary, *in every country where education has been thoroughly studied.* In fact, with teachers educated as they are in Europe, such a conception could not be entertained, for their whole education has rendered it impossible. The fact is, that the empirical conception only lives where teachers have been trained under the system of pupilage. To this point reference will be made later.

19.

[1] Ueber Apperzeption. Lange. Plauen.
[2] Denken und Gedächtnis. Dörpfeld. Gütersloh.

19. *Empirical investigation of education insufficient.*—It is obvious that where education, its subject matter and method, are exhaustively studied, *educational experience* has a unique value, because it continually tests educational theory, and helps to bring about adjustment of practice so as to conform to the conditions of highest efficiency. This, however, can take place only under the rational system; the empiric never materially changes. Empirical education grows by accretion of elements, while rational grows organically. In the former, subjects are added; in the latter, they are incorporated. This difference is fundamental, and though not very evident to the empiricist, simply because he does not study the philosophy of education, and often, indeed, believes that that is a mere name without reality, it profoundly affects the whole organisation of education, and the question of the proper method of training teachers; and it seems hardly necessary to add that the quality of training which teachers receive, determines the quality of the education afforded. The highly-trained teacher, competent as regards his information, well educated in the fundamental knowledge of his art, keenly conscious of the reality of the contributions thereto of psychology, etc.—conscious, moreover, of the direct aim of particular lessons, of the subject of which they form a part, and, moreover, of the whole group to which they belong—is a wholly different person from the teacher who teaches subjects merely. It is the former who appreciates the formative influence of education upon the individual, and, through the individual, upon national character.

The fact that, to the superficial observer, the externals of education often seem identical in the two systems, viz., the empirical and rational, shews how necessary it is to go to the root of the whole matter, and view the subject in respect of its *intelligible* aims.

An illustration will perhaps make this clear. Two schools may be identically equipped, the teachers in them knowing exactly the various items of knowledge constituting the series of lessons. If, in the one, however, the plan of teaching takes an intelligent account of the contributions of psychology to teaching, and the other does not, the first will be efficient and the second relatively a failure. A casual visitor, however, perceiving only an individual lesson, will be wholly unable to judge concerning the merits of the two systems, unless he understands their philosophy; that is to say, the empirical investigation would be practically valueless.

As a matter of fact, it sometimes happens that the better equipped and more pretentious school is the inferior in educative value. Important as the material *school-equipment* of a community is, and, in view of the aim of education, its importance is not likely to be over-estimated, it is still true that *its theory or philosophy of education is vastly more important.*[1] To understand the education of a country as regards its ideals and inwardness generally, is recognised as essential by all educationists.

Curricula afford, it is true, a better gauge of the quality of education, and are therefore important; but what is still more important, and what curricula do *not* always, and never perfectly, reveal, is their unity of treatment, and the perfection of their adaptation to the pupil, at each stage of the latter's development. It is evident, therefore, that, in themselves, they are inadequate for the purpose of judging an educational system, though taken with the training of the teaching-personnel, the two together throw considerable light upon it. These, united with a knowledge of the theory of education adopted, make it possible for the system to be thoroughly comprehended.

20. *Necessity of rational investigation.*—It is now clear what the rational investigation of the education of any country involves, viz., a sufficient command of its general theory of education, the nature and range of which subject have very briefly, and all too imperfectly, been outlined in the earlier sections of this chapter.

Countries that have a national system of education have always this great advantage over those that have not, viz., their scheme of public instruction can be systematic. The public organisation of education can achieve for a community what private education cannot, viz., unity of aim and method. It is in the power of *every country that is in earnest about education*, to so organise it, and to so train their teachers, that the schools of the people shall mould the characteristics of the rising generation in any way deemed desirable. In no country of Europe is it deemed sufficient for the State to propose merely to teach subjects. In other words, every country of Europe has deliberately rejected educational empiricism.

The fact that European countries have rational systems of education is the real explanation of their excellence. Almost every possible mode of teaching has been exhaustively investigated in Europe, it having been the theatre of an intensity of educational discussion with which we are here as yet unfamiliar. Consequently, most of the ordinary questions that can be raised in regard to education have been practically settled.

The school systems of the different countries are an attempt to embody their educational ideals, and, from what has preceded, it is evident that, to really grasp their meaning, it is not sufficient to study material organisation, equipment, educational method, and the training of teachers, one must endeavour to understand also the philosophical principles on which the whole is developed. One might say that where a country has only an empirical system of education, its system is hardly worth investigation; if it has a rational system, the only sufficient investigation is the rational one.

21. *Necessity of rational education.*—To completely discuss the reasons why the rational is the only satisfactory system of education would be an exhausting task. It will be sufficient to suggest one or two important reasons. It has been found in certain countries (see hereinafter Chapter XVI on the "Education of the Will"), that instruction may be very perfect, and yet may be defective as regards enabling a people to attain national achievement and development. Education is not merely instruction; great knowledge is perfectly compatible with great weakness of will. A people may be well-informed and yet be without national ambition; their acquirements may be critical, but not practical—in short, they may know much and do little. It is easy to see, therefore, that systems of education are not to be judged by the percentage of marks given by some teacher or inspector. Such awards could at the best only prove the mechanical efficiency of the system. As a matter of fact, they do not even prove that.

The real test of a system of education is the progress, or otherwise, in the character of the people that comes under its influence. As each new generation arises, if it shew greater intelligence and force of character, if individual and national purpose seem to grow in vigour, if intellectual, industrial, commercial, and moral achievement become more and more striking—then one can rest assured that the educational system is well founded. It

[1] It is assumed, of course, that this theory controls the educational practice.

It is in this way that it is realised that the philosophy of education is important. Reverting to what was said in the commencement of this section, it may be pointed out that an intelligent direction of education will, on discovering that it leads to excellence in some directions, yet fails to develope important powers, seek to discover the reason. This means that it will resort to a rational investigation of the educational system. If it be found that a people is splendidly informed, but feeble in the practical affairs of life, it will be necessary to change the system of education in such a way as to confer practicality; or, to restate this, the system must be so transformed that not only will knowledge be at the service of the will, but the disposition, too, must be changed in such wise that *practical* tendency will be reinforced. Rational administration of education endeavours, by every possible means, to keep itself informed in regard to the tendencies expressing themselves in the life of the people; and if these are for good it rests satisfied, if not it investigates the cause. *An empirical administration is content with the reports of its inspectorial staff, and mistakes an even working of its own mechanism for educational excellence.* No system of education is satisfactory that does not equip a community to hold its own in the great rivalries of the human race, and to make it adept in exploiting its territorial wealth.

22. *Consequences immediately flowing from a rational system of education.*—Since the State is concerned in the education of the people from the lowest to the highest plane of education, forasmuch as every grade is necessary in the general development, it is essential that the State system of education should be profoundly influenced by the highest forms therein. Higher education carries with it some consciousness of all lower forms of education; but the contrary is not true. For this reason it is recognised throughout Europe and America that the more thoroughly primary education is permeated with University influence, the more certainly will its character be raised, and the more assuredly will it be forced to abandon empiricism and adopt rationalism in its educational processes. The influence must pass from above downward. The higher culture and wider outlook of the University must, as it were, affect the primary system before it can achieve its end. The philosophy of education has come mainly through the universities. Genius, if not immediately recognised, has always been finally appreciated in these homes of universal culture.

The University influence tends so to mould the intellectual character of the teacher, and so to widen his sympathy and outlook, that he is, as it were, forced by natural tendency to sympathise with the rational view of education. That he should be a graduate is unimportant; but that he should acquire the larger outlook is unspeakably important.

The two most far-reaching consequences that flow at once from the higher view of education, are—

(*a*) That in their education teachers should be subject to the highest educational influences; and
(*b*) That none but trained teachers should be allowed to operate educationally upon the minds of children.

Rational education will not admit of the employment of teachers who do not understand the reasons for every step in the system. In order to make its elements organic—that is to say, in order to unify their influence, and to make them absolutely efficient in building up the character and intelligence of the people—each teacher must, in his teaching method, consistently maintain that character which not only conforms to the special aim of the instruction he gives, but also to its general aim; in fact, he must be philosophically trained to teach. This at once reveals why untrained teachers (pupil-teachers) have either been absent, or are disappearing, from all countries which in their scheme of public instruction have endeavoured to reach the highest efficiency—that is, a rational system of education.

To leave Europe out of consideration, the fact that in a practical country like America it should be considered necessary for a teacher of kindergarten, dealing with infants even before they are 6 years of age, to learn such a subject as psychology, and after a good secondary education to spend still one or two years in learning *how to teach infants*, not subjects of knowledge, but those things that make them dexterous and self-expressive, awakening their self-respect and respect for the individuality of others, ought to carry conviction that, to the American mind, the philosophy of education is of unqualified importance. Between the view of education that regards such training as necessary, and that which allows the employment of unmatured, ill-educated, and untrained children as teachers, there is a great gulf.

Put briefly, it may be said that if rational education is what is aimed at, the employment of such a class of teacher as has just been mentioned is wholly indefensible.

The discussion of this question in Europe is, as already said, an impossibility. The allegation that rational education can satisfactorily proceed under such teachers, would be deemed to carry with it its own refutation. The contrast of the pupil-teacher system with that of the previously-trained teacher system will be developed in another chapter (Chapter XXVIII).

Sphere of investigation of an Educational System.—From what has been outlined, the character of a real investigation is evident. It may be defined as inquiry into education in respect of its—

(*a*) Theory (*b*) Organisation,

these being understood in the most comprehensive sense.

CHAPTER IV.

CHAPTER IV.

The Kindergarten and Schools for Infants.

[G. H. KNIBBS, Pt. I, III; J. W. TURNER, Pt. II.]

Part I.

1. *Origin of the Kindergarten and Infant-school.*—As far back as the 16th century, Bacon drew a parallel between the child in the hand of the educationist and the plant in that of the gardener, as illustrating the immense importance of the earliest influences which are allowed to operate on the human mind. So also was Komensky (Comenius) not less impressed with this truth, and in his pædagogic doctrine he laid great stress upon it. He, however, as some educationists[1] still do, believed that the proper educator was the mother, and in his view, it is on her that the duty of the child's first educational development should fall. But it must be admitted that, even where both the disposition and the instructed intelligence to properly undertake the task exist, there is frequently a lack of opportunity, owing to the pressure on the mother of various life-duties. This was realised by Pestalozzi, who planned, while Oberlin first formed, a sort of asylum for children, in which their early education could be looked after.[2] These asylums were the forerunners both of the infant-schools and of the kindergartens, though something of the kind appears to have long ago existed in Egypt.[3]

2. *Pestalozzi and Froebel.*—Froebel, a pupil of Pestalozzi's, whose life-long consecration to his work, and whose original mind gave great value thereto, came, in course of time, to differ somewhat from his master's view of the true method of human education, and, grounding his whole theory on a belief that the laws of man's mental and moral nature, and those of external nature, had the same origin, developed on principles consistent therewith the special views associated with his name, and exhibited in the "Kindergarten" which he created. These were set forth, in part, in a work (Menschenerziehung) which appeared in 1826, but Froebel did not open his first kindergarten till the year 1837. Pestalozzi's fundamental idea of education was that the human faculties were developed by *exercise*; Froebel's that, in the initial stages, at least, the development depended rather upon *arousing and directing voluntary activity* (Selbstätigkeit). Now it is this conception, according to Michelet,[4] that constitutes the ground on which Froebel must be regarded as one of the greatest contributors to educational theory, reform, and method.

3. *Importance of initial stages of Education.*—Both Pestalozzi and Froebel strenuously taught that the education received in the first seven years of life was a foundation profoundly affecting the subsequent career, and they considered it to be, therefore, of transcendent importance. This first period, the most plastic of the human organism, is, in their view and that of their followers, and perhaps, too, in that of everyone who has seriously considered the question, uniquely the time when the physical, mental, and moral elements of the individual receive the determining initial impulses; the time when that specific direction and energy, which constitute idiosyncrasy, are received. Then it is that a definite "set" is given to the physique, to the mind, and to the disposition of the child—a "set" which lasts for life, for good or evil. *All Pestalozzians and Froebelians feel that the early direction of education is of such moment that it should be the wisest of all;* that the *initial* steps should be taken with the greatest care. In the highest branches of education the teacher must, in this view, be well-informed in his special subject, and possess in that subject the genius of discovery and invention, but his command of the *art* of teaching is then of least consequence. On the other hand, in the lowest branches, the *art* must be at its highest, and the teacher so widely and liberally educated as to rise to a deep sense of the significance of his or her work. It is only by the adequate recognition of the importance of the first steps in education that enthusiasm is possible; it is only by vividly realising what it all means to the future of the individual, of the community, of the nation, that it is possible to receive that *inspiration*, without which the teaching will amount to little more than dull routine, without value.

4. *Necessity for understanding of child-mind*—Apart from the function of Froebelian kindergarten, or any modification of it, it must be stated *that there is a world-wide recognition of the necessity of a deeper understanding of the child-mind, and of human development as affected by education*, and of the necessity of this deeper understanding being possessed above all by the teachers of infant and kindergarten schools, and also those of the youngest classes in primary schools.

5.

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[1] Many educationists believe that when general education has reached a more developed stage, there will be more and more home education; and in a Belgian home (that of Monsieur P. de Vuyst, l'Inspecteur d'Agriculture, Bruxelles), an extremely fine equipment for infant-teaching was seen by the Commissioners.

[2] The Salles d'asile, which are the direct progenitors of the Ecoles maternelles of France to-day, were started at Ban-de-la-Roche, in the Vosges, in 1771, by Pasteur Oberlin. He opened there the first of the "Ecoles à Tricoter."

[3] See section 24, hereinafter.

[4] "Nos fils," 1869. In developing his life-work Froebel fused the ideas of Pestalozzi and Fichte, the former regarding the child as in the deepest sense belonging to his family, the latter as belonging to the State; and he endeavoured by instructing the mothers, and, through the kindergarten, to incite the child to self-activity. This is the fundamental principle of the kindergarten, and its whole machinery has that incitement for its object.

5. *Infant-teaching involves serious preparation.*—Some conception of the serious view, which obtains in almost every country visited, may be had by considering the programme for the training of such teachers—a training which stands out in startling contrast with what has been officially considered necessary in this State. The following, for example, is the programme for kindergarten-teachers, as given in a Berlin institution[1], and it lasts about two years for an educated student:—

1. Psychology.
2. Theory of Education.
3. History of Pædagogy.
4. Theory of the Kindergarten.
5. Hygiene.
6. Natural Philosophy.
7. Theory of instruction.
8. Theory of space.
9. German language.
10. Froebelian occupations and development of same.
11. Drawing.
12. Manual work.
13. Singing.
14. Gymnastics, ball, and movement games.
15. Kindergarten practice in the various classes.
16. Household work and work in the garden.
17. The physical care of children.
    Bathing, cooking, and foods for children.

Such preparation for kindergarten-teaching, as is implied in the above course, is obviously in direct collision with the opinion so widely diffused among those who have given the matter no special attention that almost anybody is qualified to teach infants. The serious Pestalozzi-Froebelian view is everywhere endorsed where the question has been studied in the light of experience by competently-informed people. Another example, taken at random, and from a very different quarter, may be cited, *pro tanto*, as tending to confirm the fact that educationists of experience do not propose to employ *uninstructed* persons in the education even of infant-children. The following programme, viz., that of the Department for training kindergarten teachers in the University College of North Wales, Bangor, is referred to:—

KINDERGARTEN TRAINING, UNIVERSITY COLLEGE, NORTH WALES.

Preparation is offered for the Higher Practical and Theoretical Examination of the National Froebel Union.

These examinations are open to candidates who have passed certain public examinations, including London Matriculation, Oxford and Cambridge Joint Board Higher Certificate, and the Elementary Teachers' Certificate of Board of Education. Candidates who have received a good general education may also qualify by passing a preliminary examination conducted by the Board itself, which includes English, History, Geography, Arithmetic, and one other subject from the following Groups:—Elementary Latin, Greek, French, German, Mathematics, Physiography, Botany, Zoology. *Course.*—The Complete Course (Parts I and II) covers two Sessions. Students who have passed examinations which exempt them from further tests in Botany, Zoology, Physiography, and Music, may complete the Course in five terms.

Syllabus of Classes at the University College, North Wales.

(1.) History of Education, with special reference to the works of Pestalozzi, Herbart, and Froebel. Text-books.—Quick's "Educational Reformers," Pestalozzi's "Leonard and Gertrude," Froebel's "Education of Man," Felkin's "Introduction to Herbart," and such other special books as are from time to time required for the examination.

(2.) Theory of Education, includingt he elements of Psychology and Ethics so far as they relate to educational practice." Text-books.—Sully's "Teacher's Hand-book of Psychology" (new edition), Lange's "Apperception," James' "Talks to Teachers on Psychology."

(3.) Practice of Education, including—(*a*) Theory of Curricula; (*b*) General Method, and Methods of Teaching the ordinary school-subjects; (*c*) School Organisation, with special reference to Kindergartens, Transition and Preparatory Classes; (*d*) Kindergarten Gifts and Occupations."

(4.) Drill.—Theory and practice of Swedish Drill.

(5.) B.B. Drawing, and Music.

In addition, students attend the Junior College courses in Botany, Physiography, or Zoology, unless they have already qualified in these subjects.

Practical Work.—Attached to the Department is a model Kindergarten and Preparatory School. To this school students are attached for purposes of observation and practice. In connection with this part of the course, students will be required to prepare notes of lessons, give criticism lessons, and make a special study of the gifts and occupations.

This will sufficiently accentuate the point that kindergarten work is treated seriously. The subject of the kind of training necessary for kindergarten and other teachers is, however, a matter with which we are here not immediately concerned, and will be dealt with later on. It is sufficient at present to observe that the fundamental idea, true also of other forms of infant-schools, and almost for the entire civilised world, is that *even the teaching of infants should be undertaken only by educated persons who have made it a special study*, and not by uneducated novitiates in the art of teaching, and that the work itself is transcendently important.

6. *Value of Infant-school.*—The question of the special form or constitution of the infant-schools or kindergartens, and of their exact function, is one about which absolute agreement does not exist—a fact that will later be more fully discussed, as also the question of the relation of the State to infant-education generally. The former question, though presenting dissimilar features in different countries in regard to detail, differs but little in principle, and the trend of thoughtful opinion is that when the education even of very young children—3 to 7 years of age—is *not* undertaken by the mother or guardian, it is desirable that it *should* be in a suitable "play-school;" and it must be recognised that *there are distinct moral advantages in such control of the child.* The report of a Swiss authority, M. Clerc, previously referred to, puts the matter well, and has some application to our own State. Speaking of his own country he says:—

In Switzerland the State intervenes in the domain of the folk-school, only to accord its subsidies and to exercise the right of supervision. More and more is the disposition shewn in this country to place, *as the foundation of indispensable studies, the Kindergarten organised according to the Froebelian system.* While many Swiss educators hold that the education of little ones ought to be wholly confided to their natural educators—the mother and the family—it is recognised that a greater and greater number each year find themselves in the position of being quite unable to discharge their natural mission. The daily necessity of earning their bread, and various occupations, cause *many to leave their children to themselves. Living in the street, these contract for life pernicious habits of idleness and vagabondage, and for such family education does not exist at all.*[2]

This

[1] Berliner Verein für Volkserziehung (Pestalozzi-Froebelhaus). See the "Verwaltungsbericht des Vorstandes für 1901," p. 21.

[2] See L'Ecole populaire Suisse, par M. le conseiller d'Etat; J. Clerc, Neuchâtel. Chap. II.

This last remark applies to some extent to most cities throughout the world, and is true of the capital here, and of the larger towns of this State. From what the Commissioners have seen, there can be no doubt that the children are really happier in properly-conducted infant schools, in the "écoles maternelles," and in the kindergartens, than they could possibly be, left to their own devices; and, of course, they are profitably employed. Moreover, if the schools are hygienically satisfactory, they are also more healthily employed physically.

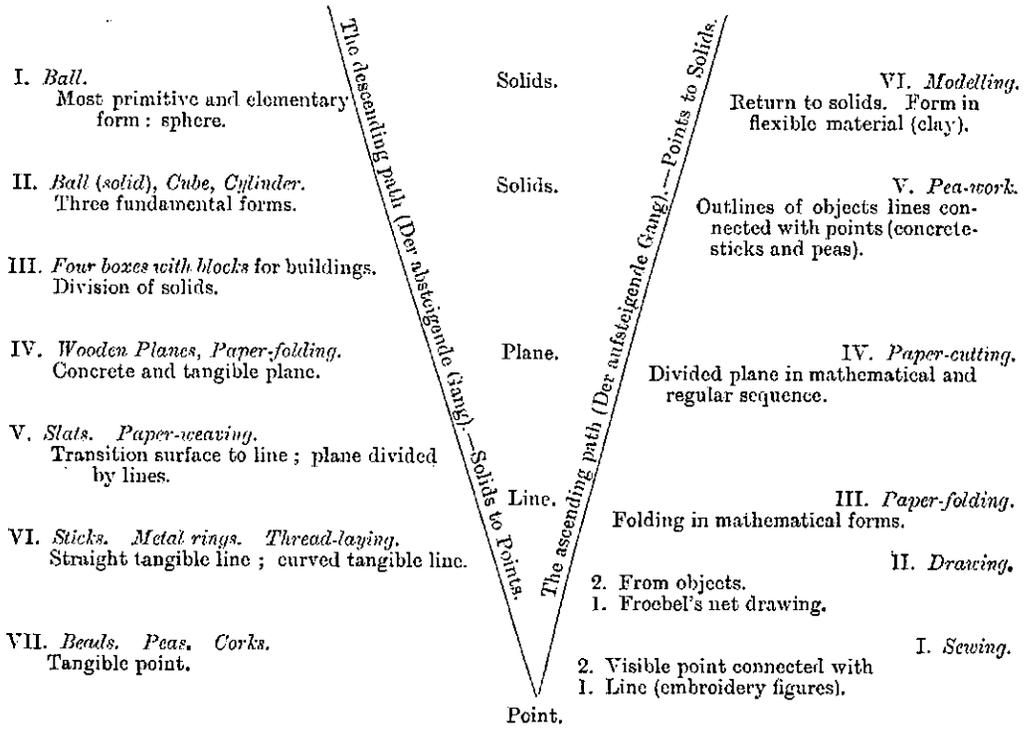
What has been said so far suggests chiefly the importance of right method of child education. But as has already been said Froebelian schools exist in many degrees of modification, and there are also some infant schools which can hardly be called Froebelian in the rigorous sense, and many more that are in no sense either play schools or kindergartens.

In order to understand the difference between these—that is, between the infant school of the ordinary sort and the Froebelian kindergarten—it is necessary to point out the original theory and form of the latter. The foundation ideas of the Froebel system are as follows:—

7. *Aperçu of the Froebelian Theory.*—Man is a creative being in a state of physical and spiritual interdependence with nature, with an innate tendency to activity, and a desire for representing things; the activity, together with the representational tendency, express themselves by creative impulses in the child, to fulfil which he seeks material, viz., *play-things*, and he attempts to *draw*. *These efforts—i.e., the unconscious expression of the child's creativeness—are to be sacredly respected, and used as the means of his development, not by inhibition but by direction.* The gifts and occupations, the gymnastics, the songs, the children's garden itself, the material of the kindergarten generally and the way of using it, are the outcome of Froebel's ideas as to the best means of teaching *through play*. The fundamental notion of a Froebelian *occupation* is that it shall be a *method which calls forth and directs the child's productive powers.*[1] The inner nature of the child demands *materials*, but the child himself needs teaching *their use* in order to properly satisfy and profit by his inner impulses. Inactive observation can never take the place of productive activity. The earlier it is possible, by dexterity of hand, to objectify an idea, and in general the more intimately mental activity is associated with physical, the more normally will the mind unfold.

Froebel aimed, therefore, in giving his exercises, not merely to make the children *use* all their faculties and members, but, clothing each exercise in the form of *play*, he required that they should *produce a result* appreciable to the child himself. By making him recognise that he is *able to accomplish* something, the foundation of moral dignity is established. Mere *mechanical results* and *irksome work* are to be avoided. Infant play, infant amusement, infant joy, are not only the proper conditions for child life—they are the essential conditions of child-development. *That this development should have a definite sequence was Froebel's* doctrine, and he endeavoured to ascertain the normal working of the child-soul, so as to make his method conform thereto. To this sequence he gave great attention, making it the subject of very careful and prolonged study. No one familiar with Froebel's work will *lightly* think of departing from his developments. It must be remembered, however, that the genius of the Froebelian method lies in its principles rather than in the details, and further that it is difficult to assign a limit to the sphere of application of these principles, as also will be obvious on reference to the following scheme of procedure:—

THE FROEBEL PROCEDURE.



This Froebelian procedure is naturally the subject of an elaborate exposition, which need not here be considered. It will suffice to state that the "gifts" and "occupations" are regarded as a connected whole, designed and intended to develope the mental and physical capacities; and it is alleged that their inter-dependence is such that this or that gift or occupation cannot be arbitrarily left out without impairing the utility of the whole and injuring the result.

8.

[1] Life of Baroness V. Marenholtz-Bülow. (Froebel's "Theory of Education"), Vol. I, p. 168. Harison, N. York, 1901.

8. *Modifications of the Froebelian idea.*—It may be here remarked that the French and Swiss "école maternelle" is not identical with the "jardin d'enfants," but may often closely approximate thereto. The original Froebelian kindergarten has itself been much modified and the Commissioners have no doubt, not only that the detail is properly subject to large modifications, but also that the manner of employing the kindergarten method is of equal if not of greater importance than the detail itself. *Much depends upon the personality of the kindergarten teacher herself.*

It is important however, that in modifying or developing and applying the kindergarten, its fundamental character should not be varied. A tendency which has from time to time shewn itself, is either to make the kindergarten extremely mechanical, thus losing sight of its true meaning; or to elaborate the work of the children unduly. Speaking of these matters, Monsieur F. Guex in his report in connection with the National Swiss Exhibition of 1896 in Geneva, endorses the opinion that the infant school should consist of *play* and he enters his protest against such injurious developments. He says:—[1]

To exhaust the programme of work in the Froebelian School it is necessary to speak of both games and gymnastic exercises, each of which is intimately connected with singing, as we shall see. *It is difficult here to distinguish between play and work; from the pædagogic point of view the difference is insignificant.* Play is the child's work, it is his life, it is for him the means of education and one may say that, in the infant-school, *the child learns by playing.* Besides, in play it is nature that speaks, as was said of old by Montaigne. In free play the mistress is able to get the most useful suggestions from the intellectual and moral point of view. In fact it is in play that the tastes, aptitudes, and inclinations of the child reveal themselves. We are unable to consider here the psychology of play, to shew that with all little ones teaching and education ought to be by it alone, that at that age the most attractive means are the most powerful, that the tasks ought to be adapted to the nature of the child, his inclinations, and needs.

9. *Tendency to merely mechanical acceptance of Froebel to be avoided.*—In opposing the tendency to lose sight of the higher function of the kindergarten he adds:—[2]

We have said elsewhere and we repeat, that it will not do to reduce the Froebelian method to a simple mechanism, and to make the infant-school a mere workshop for the making of little nothings and of complicated and worthless objects.

He fully recognises also the injuriousness of the elaborating tendency when he says:—[3]

The infant programme is overcharged . . . . Examining things more closely one reaches the conclusion that here also it is necessary to do some pruning, to jettison some of the baggage. On the one hand to relegate to the methods of the past, some of the Froebelian occupations, such as minute embroidery, quilting, etc., tasks too full of minutiæ, requiring too great a strain upon the eyes, causing school-myopia; and on the other hand to dismiss also those complicated undertakings, little "*chef d'œuvres*," that the children are quite incapable of executing without the assistance and co-operation of the mistress herself.

It is scarcely possible for anything of value to present itself in this world, without winning from a certain class a *blind* appreciation and a sort of mechanical adhesion, as tenacious in respect to matters of no moment as in respect to those in which lie the whole essence of the matter. It has been said in the French criticism on the American kindergarten propaganda that the most serious defect peculiar to the American kindergarten is "*la superstition professée pour Froebel*"[4]—a superstition which expresses itself in the doctrine, that the German pædagogue has organised a system that must never be touched, never varied. Pointing out that the imprisonment in invariable processes and forms is a false adherance to the letter, instead of a true acceptance of the spirit, the criticism proceeds:—"The spirit of Froebel himself was a spirit of liberty and progress, but the Froebelians, in their exaggeration of a blind cult, too often become addicted to mere routine, too often become the slaves of a material doctrine, which they hold *sacred*"[5] . . . . And the French perference for the "*école maternelle*," common also to some extent with the Swiss, is deliberate, and their modification worthy of serious attention. On the other hand the American has himself departed much more from the original Froebelian kindergarten than is generally admitted. The whole subject will however be more fully discussed hereinafter.

Part II.

10. *Investigation of Kindergarten practice.*—The practical work of the kindergarten was investigated in England, both in the board schools of London and Birmingham, and under private management; in Switzerland, where it is yearly extending its sway; in Germany, where the teaching is largely in the hands of private societies; in Hungary, where it has features peculiar to the Magyar people; in Holland, where some of the cities grant a small subsidy which is paid by the appointment of teachers in the infant schools of the cities contributing; in France, where the "école maternelle," actually a more or less modified form of the kindergarten, forms part of the elementary system of instruction of the country; and in Canada and the United States of America, where it not only forms an integral part of the regular system of instruction but where it has been said to obtain its greatest development. Speaking generally, it is correct to say that the amount of interest shown in kindergarten work is amazing. In every country visited expert opinion is unanimous regarding the value of and the necessity for this early training, and it may just as truthfully be stated that in detail there is little general agreement as to the best methods. In every school also where the teaching was examined there were special features which commended themselves. This fact necessitated careful inquiry into the consequence of varying the individual elements of a connected Froebelian scheme, and how far the Froebelian principle can rigorously be applied to elements not included in the ordinary kindergarten. In any attempt to sum up the best features of all the systems seen, it need hardly be said that a jumble of disconnected elements, however good individually, cannot be proposed as the best system, forasmuch as to be of real value, the Froebel unifying principle must be respected, and the whole homogeneously organised. In the final recommendations of the Commissioners this will not be overlooked.

11. *Question of State's relation to Kindergarten.*—It may be here stated that after considering the question in all its aspects the Commissioners are fully in accord with those educationists who place the teaching of kindergarten principles as the foundation of their public system of education. "In its broadest,

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[1] Rapport sur le groupe XVII.—Education et instruction, par François Guex, etc., etc., "Les écoles enfantines," p. 67.
[2] *Op. cit.*, p. 62.
[3] *Op. cit.*, p. 69.
[4] *See* Expositions Scolaires étrangères, dans les Rapports du Jury International, p. 735
[5] *Ibid.*, p. 736.

broadest, truest sense," says Mr. J. K. Hughes, "the public school should include whatever is best for the fullest development of the desirable elements of human power and character. The State has no right to assume the duty of giving an education unless it provides the best possible training and culture for its children. . . . . The kindergarten should not be an appendage to the public-school system, it should be part of it—its foundation; its initial stage, in which all children should remain for a period, the length of which should be decided in each individual case by the heredity, the history, the temperament, the mental activity, and the nervous system of each child."[1]

The view that the State should undertake kindergarten education is also strongly held by a Swiss authority previously referred to, Monsieur Guex. He says:—

> Another point worthy of attention is this: The infant school wherever it exists, ought to pass out of private hands and become an affair for the State. Several cantons have shewn us the way in this matter; it is necessary only to follow them, for as one of the best-informed pædagogic authorities (a lady) has written:—"National education, that is to say, of all by all, the most powerful means of social reformation, ought to commence in the kindergarten or infant school."[2]

When early education was treated as a matter of little importance, and before the function of the kindergarten was widely recognised, it is not astonishing that the State should be indifferent to its introduction. Once, however, its basic character has been realised, the question assumes quite another aspect. In a country democratic in its political theory and institutions, and with democratic ideals, aiming at giving every citizen, as far as possible, equal opportunity to advance, it is quite impossible to relegate the infant-school proper, or the kindergarten, to the chances of mere private enterprise, and to dismiss the affair as one of no moment to the State educational system. And for this reason. The initial steps of the primary forms of education should be such as will give the fullest opportunity of progress to the citizens of the State. There can be no doubt that interest in the elements of knowledge is aroused in the kindergarten as it never is in the old type of infant-school, and therefore the child is not, as he too often is at present, hopelessly prejudiced against school-work from the very commencement of his educational career. On the contrary, through the unfolding of his powers by giving play to his spontaneity, he derives real pleasure in their exercise. He learns to really enjoy the life and work of his school, instead of hating it. This is not mere affirmation, but is what the Commissioners have personally seen demonstrated over and over again. It would indeed be difficult to speak too strongly about the matter. In every place where the kindergarten-teaching was good there was *intense* interest on the part of the children. In seeing this, one could not help feeling strongly the force of the words of Monsieur Guex:—

> It is unnecessary to insist here upon the importance of confiding this education to qualified persons, devoted to and seriously prepared for such teaching. The day when the psychology of childhood will be complete—it is very far from being so now, because for too long the child has been considered a negligible quantity—the day when our infant-school mistresses will themselves be studied and themselves have studied the child, when they will have an exact knowledge of his needs, we shall have *the true infant-school, maintaining the indulgent sweetness of the home while initiating in the work and order of the school.*[3]

12. *Impressions of English Kindergarten.*—In Great Britain a number of kindergarten schools were seen, of which the following may be considered good examples:—Fleet Road, Hampstead, West London, Deptford, East London—these two are under the London School Board; the Infant School, Somerville Road, Birmingham, under the School Board of that city; the Froebel Educational Institute, West Kensington; and the Wimbledon High School, London. These last are private institutions. In the Hampstead Infant School, kindergarten and ordinary infant-school teaching are interwoven; that is to say, considerable time is given to the teaching of reading, writing, and numbers, while there is also a certain modification in the teaching of the gifts, and a large amount of attention bestowed on the occupations. Free-arm drawing, brush-work, paper-folding, weaving, canvas-work, and design are very striking features in the work of this school. Questioned as to the prominence given to hand-work, the lady principal stated that she favoured the freedom of finger-work as against the *stiffness* of pencil-work, because of the valuable training the former affords the pupils, many of whom later on will be among the ranks of the artisan classes. In the Deptford Kindergarten young pupils of 4 and 5 years of age were observed engaged in free-arm drawing with both hands at the same time. Ambidextrous free-arm drawing, and a well-arranged scheme of brush-work, are the distinctive features of this institution. The usual infant-school subjects are also taught. The Somerville-street Kindergarten, Birmingham, conducts its work on lines similar to what was seen in Paris. The combination of infant-school work with modified kindergarten is practised, but neither here nor in the London schools is there a room set apart for games, and plays, and story-telling. The only space available for these necessary recreations was that in front of the desks, and this, it may be said, was frequently inadequate for the purpose, and proved but a poor substitute for the open-air garden or the bright nicely furnished play-room. The school buildings in London have little to commend them. Points worthy of notice about the Birmingham kindergarten-school were the cheerful rooms, the use of chalk illustrations, and the teaching of writing on sand-frames to mere babies. The ladies in charge of these schools are all students of Froebel's teaching, but in each case the details have been modified and adapted with a view to suiting the temperament and meeting the probable future needs of the pupils. The class-work of the pupils, when they were fit for promotion to the primary school—between 7 and 8 years of age—is highly satisfactory, and, in addition, the tactile sense is well trained. In each case this mixed method of teaching is carried out with very satisfactory results. The discipline is kind and sympathetic; pupils are sharp, bright, happy, contented. In the case of all schools, these departments are, from the general point of view, equally important in point of efficiency and usefulness with the senior departments. Other public schools in England were visited, but those quoted are very fair examples of the Froebelian method incorporated with ordinary infant-school teaching. The exponents of this mixed system claim that it gives the very best results. One of the mistresses strongly emphasises the importance of those occupations which give the greatest flexibility to the fingers. She avers that a reaction in favour of this branch of work is setting in. On examining the work of her higher classes, from 6 years to 7½ years of age, the pupils being at the time actually busy with the occupations set down in the quarterly programme of work, the Commissioners felt that the results strikingly confirmed her contention. The impression made on the Commissioners' minds on the occasion of

[1] Proc. National Education Association. Paper read before Department of Superintendents at Richmond, Virginia. 1894.
[2] Report previously referred to, p. 70.
[3] *Ibid*, p. 71.

of this visit and with regard to the question of finger-work was set forth in the following words:—"In view of a large artisan class in Sydney, Newcastle, Broken Hill, Lithgow, and other industrial centres, it is advisable to give this feature some prominence in our system of public instruction." It is not made to overshadow the teaching of reading, writing, and arithmetic, however, for where kindergarten was taught in this mixed plan, the ordinary class-work was good. The time given to kindergarten teaching, pure and simple, in the Board schools where it is taught, does not exceed *three* hours per week.

The following is a programme of work as seen in a West London Board School:—

I. Pupils 3 to 4 years old—
- (*a*) Ball-making: Ball made by winding woollen threads round a ring-frame.
- (*b*) Fraying: Little threads drawn from a piece of stuff made up into little cushions.
- (*c*) Bead-threading: Needle drill.
- (*d*) Mat-plaiting: First steps.

II. Pupils 5 years old—
- (*a*) Stick-laying: Position and number taught.
- (*b*) Upright weaving: Paper and pointed.
- (*c*) Cutting out pictures from illustrated papers: pasted and arranged on squares of brown paper; cuts bearing on reading lessons or nature study preferred. Children encouraged to collect illustrated papers, etc.; very cheap in London. Elder pupils in infant school colour the sketches, and finish them off with bows and ribbons; they are then sent as children's gifts to the inmates of children's hospitals. Lessons apparent.
- (*d*) Drawing patterns on chequered squares, and then pricking and sewing: Result of (*d*) shewn in a mat.
- (*e*) Paper-folding and cutting: The Froebel square.
- (*f*) Crinkling of tissue-paper: Flowers and plants.

III. Pupils 6 years old—
- (*a*) Canvas-work: Designs for tray-cloths and squares of linen.
- (*b*) Paper-folding: Globular forms; large flowers.
- (*c*) Reelwork by boys: Cord and string made into table-mats
- (*d*) Knitting-frames: Caps made.

IV. Pupils 7 years old (lower section)—
- (*a*) Straw-splitting and weaving.
- (*b*) Blob-painting: Early lessons child's own effort; crude it may be, still the child's own; later on fill in with colours. Hectographed designs supplied by teacher.
- (*c*) String-work in frames.

V. Pupils 7 years old (middle section)—
- (*a*) Daisy mats: Winding and cutting.
- (*b*) Paper-folding and cutting, advanced.

VI. Pupils 7½ years old—
- (*a*) Canvas-work: Sewing and weaving.
- (*b*) Blob-painting: Covers for flower-pots.
- (*c*) String-work: Cotton and silk.

Nothing has been said here specially of drawing, because this subject is included in all infant-school curricula, and will be fully treated under the head of primary instruction.

The Froebel Educational Institute, Kindergarten Section, West Kensington, is attended by about forty pupils, ranging from 3 years of age to 7, and is carried on under private management. To the institution there is attached a training college for the study of Froebel's principles, and the students gain their practical training in the kindergarten school. The school itself exists for the better class of people, who pay £2 2s. a term for the education of their children. The building is situated in a very nice part of the suburb; the rooms are large, especially those used for the games and plays, well-lighted and well ventilated; the curriculum is largely composed of the usual gifts and occupations, games, plays, and stories. Nothing is done in the way of class-work, reading, and writing. The school has also an upper section which is fed from the kindergarten, and the principal claims that the training gained in the lower school is a fine preparation for the advanced work. A visit to the higher classes did certainly prove that such subjects as drawing and brush-work are of very high standard. In connection with these classes it should be stated that *no teacher has more than twenty pupils to teach, and in some instances only eight or ten.*

In the Wimbledon High-School, provision is made for the teaching of games and the usual kindergarten occupations, etc.; and very good accommodation has been provided. With the actual results the Commissioners are not acquainted, for the visit was made with the object of investigating a new method of teaching the child to read. Under their teacher was heard an exposition of her method given by little boys and girls of from 4 years to 7 years of age, and the importance of teaching a clear enunciation was ably demonstrated, the actual work, oral and written, performed by the pupils themselves, being worthy of the highest appreciation. While the method seems a rational one, it does not appear to give results superior to those seen in some of the English Board Schools. This teacher is on the staff of the school, and her ideas have become so popular that she has been asked by the London School Board to explain her methods to the teachers under their management. It may be observed that perfectly clear enunciation is a very marked feature of all continental teaching of either the mother tongue or foreign languages, and the exact appreciation of the phonetic elements of language receives the highest degree of attention. This was, perhaps, most strongly exemplified in the folk-schools of Holland. The matter should receive consideration throughout the whole of the kindergarten-teaching.

13. *German Kindergarten.*—In Frankfort, the Frauenbildungs-Verein supervises the training of females for kindergarten and housewifery. The kindergarten visited had an attendance of ninety pupils, taught by a mistress and two certificated permanent assistants, with further assistance of the students of the training institute, obtaining their practical knowledge. The pupils, aged from 4 to 6, attend from 9 to 12 in the morning, and from 2 to 5 in the afternoon, and pay 4 marks per month. At 10·30 there is a break of half-an-hour during which the little ones sit down to their meals—which they bring with them—in one of their class-rooms under the supervision of the whole of the students. The programme is based on the principles of Pestalozzi and Froebel, and the first feature of the institution was the excellent playground beautified with plants and flowers. In this area there was opportunity for physical activity and every child was occupied, some with their barrows and carts, others with a heap of sand which is provided. After this outdoor recreation, one of their inside games, an orchestral rehearsal, was witnessed—this was of great disciplinary value. The internal arrangements of the institution did not contrast favourably with the large and cheerful playground. There is no teaching of reading, writing, or arithmetic, and at the age of 6 years the pupils are sent to the primary school. 14.

14. *Dutch Kindergarten.*—The Kindergarten School and College at Leyden, Holland, is a very interesting institution. It is the only state training-school for infant teachers in Holland, and has accommodation for twenty-five students in residence, but is attended in all by seventy students, who come from various parts of the country. The institution is subsidised by Government to the extent of 3,500 gulden annually (about £299), by the city of Leyden, 2,000 gulden annually (£172), while the twenty-five students in residence pay, in the aggregate, 12,500 gulden annually (about £1,068). In return for the contribution of Leyden, the College supplies infant-teachers to the schools of that city free. The pupils' ages range from 3½ years to 6; at 6 they enter the primary school. The teaching is a modification of the Froebelian kindergarten with a strong bias in favour of hand and finger-work. Great encouragement was given to verbal explanations by the pupils. The Director has introduced a system of well-designed coloured prints, in book form, presenting some well-known nursery rhymes or familiar objects. Each child has one of these books and each is asked in the hearing of his class-mates to describe all he sees. The object of this exercise is first to train the power of observation, and secondly, to give facility of speech. The College issues a diploma, recognised throughout Holland.

15. *French Kindergarten.*—In *Paris* kindergarten work was seen in a municipal primary school, in the Rue de la Jussienne. This school is worked in three separate departments—boys, girls, infants, and the work of each branch received attention. In each department the æsthetic characteristics of the French people were very noticeable in the excellence of the pictorial mural illustrations. The black-boards in the different class-rooms, the panes of glass, and the walls, bore telling evidence of the style of teaching adopted. The whole room was beautified with them and this pictorial work, often actually descriptive of the daily lesson, was carried out by the teachers in the presence of the pupils. For hygienic reasons, even the youngest pupils work on paper; in the highest classes they are encouraged to write out their ideas on a subject and illustrate it—*e.g.*, a fire, a tram-car, a bridge. Some time is devoted to finger-work. In the lowest classes games and play and stories, with the simpler gifts and occupations form the programme, but it was noticed that in the higher classes reading on the phonetic principle was introduced, a large amount of writing on paper with the lead pencil, and some counting. The system of education, both primary and secondary, in Paris is in the hands almost entirely of the Municipal Council, and the teaching in primary schools is absolutely free. In the school just mentioned the course of instruction is free in all the departments.

The following is the time table for the écoles maternelles, in the Department of the Seine:—

Hours.		*Monday.*	*Tuesday.*	*Wednesday.*	*Friday.*	*Saturday.*
9·0	9·15	Inspection of cleanliness. Visit to the cabinets. Entry into class.				
9·15	10·15	Reading exercises, writing and language.				
10·15	10·45	Play. School games or gymnastics.				
10·45	11·30	Stories.[1]	Object lessons.	Same as Monday.		
11·30	1·0	Dismissal from class. Lunch. Play.				
1·0	1·15	Visit to the cabinets and lavatories. Re-entry into class.				
1·15	1·45	Exercises in reading and language.				
1·45	2·30	Arithmetic.	Singing.	Arithmetic.	Arithmetic.	Singing.
2·30	3·0	Play. School games or gymnastics.				
3·0	3·30	Drawing.	Morals.	Drawing.	Drawing.	Drawing.
3·30	4·0	Manual work.				

16. *American Kindergarten.*—In *America* the system was investigated in the cities of New York, Boston, Springfield (M.), Chicago, and Toronto. The teaching forms the foundation of the public school, system in each of these towns and includes none of the ordinary branches of infant-school classwork. The pupils enter the school about the age of four and at six years are transferred to the lower grade of the primary school where reading, writing, and arithmetic are first introduced. The methods approach more closely to those of the German school than was noticeable in other countries excepting Switzerland, but the internal arrangements and the material organisation were very comprehensive. The rooms set apart for the games and plays are bright and cheerful in appearance, well-ventilated and well-equipped. The apparatus is of the best quality and is manufactured in the country; and in the city of Springfield, Mass., one of the largest factories for the manufacture of kindergarten material was inspected. The pictorial illustrations, colour sketches, which pleased the eye so much in Paris, are reproduced here with equally artistic skill and effect. This free use of the coloured chalks is very general in all the American schools, and appears to be a direct result of the teaching in the normal schools. In Boston and Chicago it was quite clear that the educational authorities had fixed upon the most densely-populated parts of the city in which to locate their kindergartens. In the former city the kindergarten visited was in the midst of dull and gloomy-looking buildings, which, with most people, would have a depressing influence. This was the impression as the institution is viewed from the outside. What a change takes place as one leaves the street, which is the common playground, and enters the institution! Here each of the class-rooms is a little paradise; bright, sympathetic teachers; clean, happy, little children, for if not clean on entry they have been bathed on the premises; rooms cheerful and bright; walls and window-blinds in colours restful to the eye; "chalkettes" on every panel; beautiful plants and flowers and pretty pictures wherever they could be placed; in a word everything that could excite interest in the minds of the children attending. In the *Chicago* kindergarten visited, two different lots of children are taught daily under the one staff, the morning session lasting from 9 to 12 with the recess; the afternoon from 1 to 3. The opportunity of seeing

[1] Anecdotes, biographies from national history, accounts, geography, travels. On Thursday and similar days, . . the morning class begins at 9·30 and ends at 11·30, and is broken by recreation for a half-hour; the afternoon class commences at 1·30, and terminates at 4, and is broken by play for three-quarters of an hour. The programme of Thursdays classes comprehends all the conversations, stories, drawing exercises and manual work, and singing. For each class in the school, the time-table made by the lady-principal conformably to the above general directions, with any modifications which necessitate school-games and gymnastic exercises, is to be approved by both the primary inspector and by the lady-inspector of manual schools. These time-tables are to be put up in the class-rooms.

seeing the Chicago kindergarten college at work was fortunate. Some of the students were engaged in occupations that they would later on be expected to teach; a small advance class was receiving instruction in psychology from one of the college professors, and later the whole body of the students under the "directress of games" gave a display, such as forms part of the ordinary kindergarten curriculum.

In all the kindergartens visited the furniture is of the simplest description, and advisedly so. The seats and tables are of cheap material, and are suitable for all requirements. Galleries fitted up with cedar desks and other costly articles of furniture are not known, and are unnecessary; they are also inconsistent with the kindergarten ideal of freedom. In all schools a good supply of apparatus was noticed.

Part III.

17. *What Kindergarten may include.*—In viewing the matter in its entirety, and in the light not only of what was seen, but also in regard of the multitude of existing opinions, the Commissioners feel that the original Froebelian kindergarten, while just in principle, limited itself in dwelling so much on the use of the gifts and the occupations; and they recommend for general introduction into this State what may be called the modified kindergarten. Whether one agrees with the mysticism of Froebel or not, the spirit of M. Guex's remark commends itself to the Commissioners when he says:—

> In order that the cause of the Froebelian School shall progress more and more, it is necessary to disarm the still too numerous adversaries of that institution; to show that one is able to have a good and healthy pædagogy at four or five years, by disembarrassing the lessons of all the exaggerations that have been their reproach; and rejecting the more or less mystic doctrines of Froebel, as for example, the symbolism that he used and abused without measure[1]—a tendency in which several Froebelian fanatics have, as usual, gone much further than the Master of Keilhau.[2]

It may be true, as urged by some Froebelians, that the infant-school is *not* the place to teach reading, writing, arithmetic, geography, geometry, etc., in a formal way: that also is fully recognised by the advocates of a modification of the original kindergarten method. But that these subjects should not be introduced in any way, that they cannot be introduced without violating the ideals of Pestalozzi and Froebel, is not correct. Let us consider for a moment the subject of geography in this connection. To quote M. Guex again:—

> The infant-school is, properly speaking, not the place to initiate a child into geography. . . . Nevertheless, it is something to lead him, with great circumspection, into Nature as it surrounds him. . . . Geography for him means the fauna and the flora, the flowers, animals, and stones that each day are under his eyes. Those are the things which interest him. The child pictures to himself the topography of his country only when he has modelled it himself, only when he has built up the mountains, hollowed out valleys, lakes and rivers. Yes, indeed! sand and earth; these are the delights of the child, these are his greatest happiness. . . . This is why, in the place of the map, which a child really does not understand—for it is a mere series of conventional signs—it is necessary to have sand even in the class-room, in boxes; that of course goes without saying. And one would naturally with these, undertake these first exercises in orientation, so useful, so valuable and yet so neglected, by asking the child first in the morning, then again in the evening, on which side is the sun. North and south are afterwards very easily fixed.

One sees that the idea of Froebelian teaching by play can be realised, and that the geography of the infant-school can be made full of interest.

Similarly with arithmetic. It was a pleasure to hear an old school-director in Bohemia (Prague) explain with great zest his methodology in arithmetic for infants, and his logical unfolding of the theory of operation with quantity, in such a way as to really excite the interest of the little ones, and create in them a pleasurable consciousness of their ability to think. Not only can the beginnings of arithmetic be developed by the intuitive method, but the subject lends itself absolutely to development on the Froebelian principle.

Similarly also in regard to geometry. How much geometry can be intuitively learnt by play! And how much more hope of creating a liking for a valuable subject rendered to most children detestable by the present system of teaching both here and in England!

The same remarks apply to reading and writing; singing is of course accepted by all kindergartners. The Swiss report on Infant-schools has some valuable observations touching this last subject. It says:—

> One can hardly conceive an infant-school without singing; such a school would be as strange and as funereal as a garden in which the plants never saw the light of the sun. What treason against childhood not to make the little ones sing! Notice how this teaching is understood to-day. At first the mistress sings something and makes the child sing, because singing, outside the happiness which it itself confers, is hygienic exercise, regulates the play of the lungs, and at the same time is a valuable means of discipline, inasmuch as it serves to develope concentration by engraving, even in an often ineffaceable manner, the lessons that have been given; *and it further constitutes a splendid exercise in pronunciation.* Singing ought to play the premier part in the infant-school, because *through music, feelings of tenderness and goodness, gratitude, joy, and patriotism are cultivated in the child, rendering the beautiful more beautiful, and the good more good.* . . . And it is therefore a powerful instrument of education. . . . The child sings as it speaks, as it runs. As Pestalozzi has said, the child speaks even before it learns to read, simply because it has heard speaking; and so also it ought to learn to sing before understanding the conventional signs by means of which music is written. That observation is a valuable one, and the pædagogic conclusion flowing from it is, that it is necessary to learn singing by ear, by repetition once, twice, and three times, not necessarily consecutively, but from time to time and by way of reward, until the little pupil has grasped the melody and words. The latter ought to be easy, because the text plays a most important part, and one which ought to be thoroughly understood by the child. . . . Finally, these ought to be the expression of feelings of which the child is himself capable of testing, for that is the necessary condition if the song is to exercise a moral and truly educative influence upon him.[3]

18. *Moral Education through Kindergarten, without Inhibition of Activity.*—To touch now on the deepest question of all, viz., the moral element in the first stage of education, Ufer focussed Herbartian teaching as to the meaning of education when he said:—"When instruction has given birth to knowledge inciting to volition *controlled by ethical ideas*, it has achieved its task." Froebel went beyond this. The apperceptions of the child, awakened by the teacher through the material of his educative play, *direct* his creative

[1] The Commissioners do not commit themselves to an antagonism to Froebel's symbolism doctrine.
[2] Rapport sur éducation et instruction. Lausanne, 1897, p. 70.
[3] *Ibid.*, pp. 64-65. In the "écoles maternelles" of France, the pieces for singing (also for recitation) are selected with the greatest care, so as to be irreproachable in both substance and form.

creative self-activity, giving it ample scope, but never inhibiting its impulse. This direction is made ethical, and becomes the formative element in the development of character. "The games, songs and work of the kindergarten," says Mr. Hughes,[1] "were planned by Froebel to give the child symbolic revelations of the relationships, the interdependence, and the essential unity of individuals and society." The whole system has, as its moral foundation, *a true reverence by each individual for his own individuality, and a reverence for that of others*. So that the whole of the work is developed in all departments in such a way as to make each little one active, under direction it is true, but under a direction which gives scope for, and incites to, self-activity—*i.e.*, the execution of his own ideas and purposes. Mere drill-work is not sufficient, however perfect. Armies may, in reviews, be worked as perfectly as machines, and, in the multitudinous complexity of the day of action, utterly fail because individual self-direction happened to be the essential qualification for success. Similarly children may be drilled educationally till they become marvels of regularity, and phonographic in so far as reproduction of the material of instruction is concerned, and they may be equally inert. Much of the school-work of the present day, and still more of the past, it is well-known, produces well-informed dolts, utterly incapable of applying their knowledge. It is the very essence of the Froebelian idea to eschew this. The issue for education is the direction of one's activity, knowledge being a means to that end; and pædagogic method does not end with instruction. From the first the child is, and must be, himself a co-operator with the teacher; his own initiative is always to be called into action. As Richter has said: "To teach by play is not to spare the child exertion or to relieve him of it, but to arouse in him a passion which urges him on, and renders easy the greatest effort."

19. *Ethical elements in the kindergarten.*—And now to refer to the ethical elements, pure and simple. Fénelon well said, more than three centuries ago: "Never put into the mind of a child—that reservoir so small and precious—any but the most exquisite things."[2] That sentence suggests the essence of moral method. In the article on "Ecoles maternelles" by the "Ministère de l'Instruction Publique" of France,[3] it is pointed out that "the pieces for singing and recitation are selected with the most scrupulous care—the little poems are irreproachable, both as regards their substance and form. In the lessons on morals ('causeries morales') . . . it is endeavoured to bring the child into contact with the good, to inspire him with a desire to do good, without recourse to the fear of punishment or the allurement of reward."[4]

The fundamental idea with the French of moral education is "to fortify and ground in the soul of the pupil for life, by daily practice, those essential ideas of human morality which are common and necessary to all civilised peoples. . . . The moral teaching in the primary school is given directly under the form of maxims with explanations, informal conversations, or lessons; indirectly they penetrate everything, are presented under all aspects, vivify and relieve all tasks."[5] Consistently with the maxim that "it is never too early to start in the school of duty," the daily custom in some schools is to write on the board, both in the elementary and preparatory classes, a carefully selected maxim or precept, and to open the class by commenting on this—thus, "Love one another"; "A polite child never utters coarse words"; "Do not laugh at the misfortune of others"; "Time lost is never regained"; "Eat only when hungry, drink only when thirsty." For somewhat higher classes these are developed as follows:—"Love each other; be brothers;—the peace and prosperity of your country are dependent upon it"; "It is better to be defeated with good reason than to triumph with injustice"; "Example is better than precept"; "Praise should be merited and shunned"; "No one is justified in killing to avenge his honour." Such maxims, commented on with gravity, and illustrated by examples, are held to strongly impress young minds, inasmuch as they remain the whole day under the pupils' eyes, and are written in their copy-books, and so become engraved upon or fixed in their memories. "It is impossible to thus daily call attention to a rule of conduct or to an article in the code of duty without moral profit resulting, without the feeling as to what is right and what is wrong becoming day by day more clear, without an improvement of character and conscious effort of will becoming established," is the comment of the reporter.

20. *Ethical teaching may be indirect.*—It is of course true that formal maxims, and their exposition and illustration, are part of the material of moral education. But how much absolutely depends on the manner of exposition and illustration! The whole course of the kindergarten will abound with opportunities for moral instruction. To make this understood, let a concrete example be taken—one which will shew at once both the potentiality of the kindergarten method generally, and its moral possibilities in particular. The following programme is by Miss Harrison, Principal of the Kindergarten College, for use in her classes at the Chicago Normal School:—

OUTLINE OF ONE YEAR'S WORK IN KINDERGARTEN WITH A NORMAL CHILD FIVE YEARS OF AGE.

Aim.—To direct the emotions, develope the intellect, strengthen the will.

Child's development through—

1. *Language:—*
   1. Stories—Lift the child out of his personal experience into a larger world; direct the imagination; present ideals.
   2. Songs—Awaken a sense of rhythm; develope a taste for good music; furnish a poetic form for expression of ideas.
   3. Talks—Give child opportunity to relate his individual experiences, to sympathetically participate in the experience of others, and to gain power of expression through language.

   Much of the nature work comes into these exercises. II.

[1] The Triumph of the Kindergarten Philosophy. J. L. Hughes, Toronto.

[2] Traité de l'éducation des filles. "Ne versez jamais dans l'esprit de l'enfant, ce réservoir si petit et si précieux, que des choses exquises."

[3] Part 33.

[4] Apparently, recourse to the idea of an ideally perfect Being as the approver of good effort is sometimes avoided, as the following passage testifies: "One does not suggest to him the example of the greedy, disobedient, or wicked, whom the good God (le bon Dieu) punishes by indigestion or accidents more or less grave, and out of all proportion to the fault, but rather to that of the child who, on the point of disobeying, or appropriating the fruit which tempts him, resists the temptation, returns to the right way, goes away from the fruit he hankers after, and so tastes the satisfaction of doing right, and that of pleasing his mistress or parents." *Loc. cit.*, p. 33. See, however, section 4 in the chapter on ethical and religious instruction, etc., to the contrary.

[5] Exposition Universelle Internationale de 1900, Paris. Rapports du Jury International. Groupe I. Education et enseignement. 1 partie, Classe I, p. 39.

II. *Games :—*
1. Give opportunity for bodily activity.
2. Strengthen sense perceptions.
3. Develope social instincts through—
   a. Rhythmic games for control of body ;
   b. Sense-games for training of senses :
   c. Representative games for—Imitation of life in Nature ; imitation of activities of man.

III. *Materials :—*
1. Constructive, as—Blocks, clay, folding-paper, weaving mats, etc.
   a. Stimulate observation of objects in environment.
   b. Furnish means of expression through material, thus developing imagination, judgment, skill, accuracy, etc., and leading toward art.
2. Nature, as—Leaves, seeds, nests, cocoons, stones, shells, etc.
   a. Cultivate interest in, and love for, the life in nature ; knowledge of processes of growth ; thus leading toward science.
   b. Appeal to the æsthetic sense.

Through the use of these materials, fundamental perceptions are gained.

1. Form—Solid : Sphere, cube, cylinder, oblong, and triangular prisms. Surface : Circle, square, oblong, triangle. Line : Curved, straight.
2. Colour : Six standard colours, and black, white, grey, brown.
3. Number : Knowledge of numbers from one to ten ; number relations expressed by 1/2, 1/4, 1/3.
4. Size : Large, small.
5. Measurement : Long, short, thick, thin, wide, narrow.
6. Weight : Heavy, light.
7. Texture : Rough, smooth.
8. Position : Front, back, top, bottom, right, left.
9. Direction : Straight, slanting, curved. Points of compass.

SUGGESTIVE OUTLINE FOR A YEAR'S PROGRAMME

September.

I. *Home, Family Life :—*
1. Family relationship.
2. Experiences of home life.
3. Nature families : Animals, birds, insects.

October.

I. *Preparation for Winter in Nature :—*
1. Review of family life.
2. Plants, seeds.
3. Trees, leaves and seeds.
4. Animals : Protection, and storing of food.
5. Birds : Migration.
6. Insects : Cocoons, etc.

November.

I. *Preparation for Winter by Man :—*
1. In the home : Food, clothing, shelter.
2. On the farm : Harvest.

II. *Thanksgiving.* (Thanksgiving Day occurs in November.)

December.

I. *Winter :—*
1. Moon and stars, } Beauties of Nature.
2. Frost, ice, snow, }

II. *Preparation for Christmas :—*
1. By others for us.
2. By us for others.
Christmas celebration.

January.

I. *Time :—*
1. Division of time.

II. *Co-operation through Industries :—*
1. Trades : Carpenter, blacksmith, cobbler, weaver, baker, etc.

February.

I *Patriotism :*
1. Soldiers.
2. Washington.
3. Heroes and heroic deeds.

March.

I. *Forces in Nature :*
1. Water : Water-wheels, mills, navigation. } Utilised by man
2. Wind : Wind-mills, kites, sails. }
3. Heat : Melting of ice and snow.

April.

I. *Awakening of Life in Nature :*
1. Flowing of sap.
2. Budding of trees.
3. Butterflies.
4. Return of birds.

May.

Life in Nature :
1. Nest building.
2. Gardening.
3. The farm.
4. Bees, ants, fishes, etc.

June.

I. *Beauty in Nature :*
1. Flowers, verdure, cloud, sky, rainbow, sunshine.
2. Excursions.

The

The two strands—the child's environment in nature and his human relationships—are carried through the entire year, continuity being the basis of the kindergarten.

Such a programme as the above is itself a revelation, not only of the moral possibilities, but also of the inestimable value of the kindergarten from every point of view. It brings into prominence also the notion of the kind of teaching to be done in the infant-school. The so-called scholastic elements, "reading, writing, arithmetic," etc., can be treated in an equally effective manner, still retaining the Froebelian ideas of play, homogeneous development, and incitement to self-activity.

21. *Kindergarten to be judged qualitatively.*—Throughout the whole of the work of the kindergarten, it must be borne in mind that it has always to be judged qualitatively. The Swiss view is well expressed as follows:—

This institution, viz., the kindergarten, is not to be judged by the total knowledge communicated to the pupil, or the level to which the teaching attains, but rather by the *ensemble* of good physical, moral, and intellectual habits which the child exhibits; by the pleasure which he takes in all his work, and not by a veritable ransacking of ideas, choking up the precious germs of reflection and judgment; and, above all, of that fine and healthy curiosity that we name *interest*.

What nonsense such premature teaching is: instruction from the beginning! What is necessary to be insisted upon, once for all, is not to compel these little ones to read, calculate, or write with such or such a degree of ability. The essential aim is rather to make them know *well* the little that they *do* know; to see that they are not disgusted with school-tasks, the work of the school, and that they shew their earnest desire to see, observe, to listen, and to have the soul open to every good moral impression. The servile pædagogy of the books, injurious enough in the primary school, is here still more so. Is there any need to say: "Who will deliver us from it for ever?" Wherever attempts to bring about an accord between the Froebelian and primary schools have been commenced, they continue; but may it never come to pass that the primary school shall encroach upon the infant school, for it is the infant school that should force the gates of the primary school.

Sufficient has been adduced to indicate the value of the kindergarten, to prove that it is more than worthy to become a part of the State system. No one can have a real knowledge of well-organised kindergarten without appreciating it highly.

22. *Appreciation of the Infant-school.*—It remains to indicate what is thought by countries that have originated infant-school systems, and what development and extension have taken place. France and Algeria together had, in 1896, a population of about 43 millions, of which 2⅔ millions were children between the ages of 2–6 years, the period during which they may attend the Ecole Maternelle, and about three-quarters of a million were actually enrolled in such schools. For these there were 5,683 schools, 2,574 being public, and 3,109 private. There was, therefore, one school for every 470 children of from 2–6 years of age, and for every 128 children in actual attendance.[1] Since that date the provision for little children is still greater. France is a country, therefore, whose experience lends some weight to its opinions.

Writing in 1900 for the Exposition Universelle Internationale, the Ministerial report states:—

Since the earliest education has become a service of the State, it has been transformed and bettered in a marvellous manner. The exact instructions have indicated the end, viz., the physical, intellectual, and moral development of the child, taking account of age, temperament, and means. The Ecolle Maternelle of the exhibition has shewn how our directresses attain that end by force of patience, by perseverance, by the liveliness of ingenious affection; how they bring about a liking for regularity and neatness; how they habituate the eyes to better seeing and the ears to better hearing; how they render the little fingers agile and skilful; how, above all, they awaken the intelligence and open the souls to good moral impressions without concerning themselves overmuch to add several pages more or less of the spelling book.

23. *The statistics and a brief sketch of Kindergarten development.*—The following sketch mainly statistical makes no pretension either to definite arrangement or to completeness. Its whole purpose is merely to give some conception of the extension of kindergartens. A full history has yet to be written, and it was quite impossible, in view of the urgency of this Report, to give any time to elaborating and completing the information, which had naturally to be drawn from very varied sources. Unfortunately, the statistics of many countries were either not available, or reference to them would have involved an excessive expenditure of time.

24. *Infant Schools in Ancient Egypt.*—That some of the fundamental ideas of kindergarten are really very old, will appear from the fact that a notion of learning by play was in vogue with the ancient Egyptians, as the following passage from Plato will shew:—

"All freemen, I conceive, should learn as much of these various disciplines as every child in Egypt is taught when he learns his alphabet. In that country, systems of calculation have been actually invented for the use of children, which they learn as a pleasure and amusement. They have to distribute apples and garlands, adapting the same number either to a larger or less number of persons; and they distribute pugilists and wrestlers as they follow one another or pair together by lot. Another mode of amusing them is by taking vessels of gold, and brass, and silver, and the like, and mingling them or distributing them without mingling. As I was saying, they adapt to their amusement the numbers in common use, and in this way make more intelligible to their pupils the arrangements and movements of armies and expeditions; and in the management of a household they make people more useful to themselves and more wide-awake; and, again, in measurements of things which have length and breadth and depth, they free us from that ludicrous and disgraceful ignorance of all these things which is natural to man.[2]"

25. *Maternal Schools in France.*—At Paris, in 1855, the Baroness Marenholtz-Bülow created interest in the Froebelian idea, giving over one hundred lectures in three years, and through her ardent advocacy winning over to her cause the Cardinal of Tours, Monseigneur Marlot (afterwards Archbishop of Paris), Marbeau (founder of the Protective Associations for Children), Martin Pachon (counsellor of the Consistory), Fourier (the philosopher and economist), and others. The Catholic asylums, schools, and convents, accepted the kindergarten, owing to its espousal by Jules Mallet, a philanthropist; and the Empress Eugénie became interested and had a trial made in the crèches.[3] In his "La Femme" (1860), Michelet writes:—"It is not enough to promote natural energy, it must be encouraged by preparing its course of action; this is what Froebel's genius discovered. . . . I saw at once that this is, in truth, the education for our times."

Before

[1] Statistique de l'enseignement primaire, VI, 1896-7. Paris, 1900.
[2] Dialogues. Vol. IV, Book VII, p. 356.
[3] An interesting account of the Baroness' efforts in Paris will be found in the account of her life by the Baroness Von Bülow-Wendhausen. Harison, New York, 1901. pp. 233-252.

Before the Baroness left France, the Froebel system had been introduced into Paris and many smaller cities. The political events that shortly afterwards arose are mainly responsible for the disappearance of the name of Froebel from the schools of France; but the Froebelian spirit is undoubtedly incarnate in the work of the Ecoles Maternelles in a very real way. In regard to actual numbers France (with Algeria) probably heads the list with:—

	Year.	Infant Schools.	Teachers.	Pupils.	Population (1896).
Public	1896-7	2,574	?	452,289	42,947,396
Private	1896-7	3,109	?	277,359	
Total	.....	5,683	9,414	729,648	

Some idea of the development will appear from the following statistics from Paris alone, for these Ecoles Maternelles:—

Year.	Schools.	Classes.	Pupils.
1878	110	115	17,081
1889	127	269	22,879
1900	159	653	29,539

For the year last-mentioned there were 717 teachers for these schools, viz., 158 directresses, 506 assistants, 53 licentiates (*stagiaires*), and in addition 250 women engaged in cleaning, etc., and 75 conciergies. It will be observed that France has, for each million inhabitants, 132 infant schools of the modified kindergarten type with nearly 17,000 infants, *in a dense population*, and for them 219 teachers per million inhabitants. It is, of course, obvious that there is hardly a sufficient number of teachers.

In our own sparsely-populated State the proportion should, of course, be much higher, but the whole kindergarten work in New South Wales is a negligible quantity.

26. *Kindergarten in United States.*—Next to France, in the kindergarten development, comes the United States of America, where, perhaps, the average kindergarten approaches still more closely to the Froebelian model. As early as 1854, Henry Barnard reported to the Governor of Connecticut that the Kindergarten was "*by far the most original, attractive, and philosophical form of infant development the world has yet seen.*" Two of the important pioneers of the movement in the United States were Miss H. Haines of New York and Miss E. Peabody of Boston. The latter had studied Froebelian methods in Germany and became an ardent advocate of his doctrine; while the former had asociated with her a Miss Boelte who, for three years, had worked with Froebel's widow. To-day there are about 160 local associations for the propagation of the kindergarten methods. The most important are—Golden Gate, San Francisco, which has 41 kindergartens; a New York association with 70; Brooklyn with 60; and Chicago with 80. In 1873 the United States had only 42 kindergartens, with 1,252 children in attendance.

The *public* kindergarten institutions in the United States commenced at St. Louis in that year, viz., 1873, when Mr. W. T. Harris, now the Director of the Bureau of Education, was School Superintendent of that city. On his resignation, in 1880, there were 7,828 children attending public kindergartens. Mr. Harris' work had shewn that the period of infancy, from four to six say, was really critical, inasmuch as it affected the whole future life; and he argued that if the family does not provide for education during these important years the state should; that the creation of maternal schools of the kindergarten type were just as much a state duty as the creation of primary schools.

Some idea of how the Froebelian views have engrafted themselves on the American educational system appears in the fact that in New York alone there were, in 1900, about 100 public and 500 private kindergartens, and the total number of kindergartens had increased, as shewn in the following tables:—

Year.	Kindergarten Schools.		Teachers.	Pupils.
1900	Private	2,998	?	93,737
	Public	1,365	?	95,867
	Total kindergartens in U. S. A.	4,363	8,937	189,604

The rate of growth is exhibited best in the following table:—

Year.	Population.	Kindergartens.	Teachers.	Pupils.	Year.	Population.	Kindergartens.	Teachers.	Pupils.
	Millions.					Millions.			
1873	41·490	42	73	1,252	1882	52,441	348	814	16,916
1874	42·570	55	125	1,636	1884	54,919	354	831	17,002
1875	43·700	95	216	2,809	1885	56,221	415	905	18,832
1876	44·881	130	364	4,090	1886	57,447	417	945	21,640
1877	46·112	129	336	3,931	1887	58,712	544	1,256	25,925
1878	47·397	159	376	4,797	1888	59,935	521	1,202	31,227
1879	48·744	195	452	7,554	1892	64,834	1,311	2,535	65,296
1880	50·155	232	524	8,871	1898	72,737	2,884	5,764	143,720
1881	51·274	273	676	14,107	1900	75,273	4,363	8,937	189,604 [1]
					1900	.....	4,811	9,641	225,394 [2]

[1] According to statistics for the Paris Exhibition.
[2] According to the Report of the Commissioners for Education, 1899-1900. Vol. 2.

Canada.—In Ontario the system of kindergarten instruction was introduced in 1882, and in 1885 made part of the school system, by the Public Schools Act passed in that year, for children of from 4 to 7 years of age. In 1882, 1893, and 1898 the development was as follows:—

Year.	Population.	Kindergartens.	Teachers.	Pupils.
1882	1,926,922	1 (Origination of system).		
1892	2,115,321	69	160	6,375
1893	2,130,000 (about)	85	200	8,056
1898	.....	116	240	11,083

The proportion is good, though not quite so large as for the United States. Kindergarten is taught in all the training classes.

North-west Territories.—Kindergarten can be established under the public instruction system for children of 4 to 6 years of age—fee, 1 dollar a month.

Nova Scotia.—Kindergarten is formally taught at the provincial normal school Truro, and all students for the career of teacher have the opportunity of visiting the Truro kindergarten and of there witnessing the application of Froebelian methods.

27. *Guardian Schools in Belgium.*—It was in 1857 that the Baroness Marenholtz-Bülow, by invitation of President Rogier, urged the establishment of the kindergarten in Belgium, the system being introduced into schools, convents, and monasteries. Kindergartens were established in Brussels, Ghent, Antwerp, Namur, Nivelles, etc. The development of the *écoles gardiennes* of Belgium is shewn by the following statistics:—

Year.	Population.	Schools.	Teachers.	Classes.	Pupils.
1894	6,378,000[1]	1,347	2,263	.....	151,289
1895	6,447,900[1]	1,431	2,380	.....	158,504
1896	6,517,000[1]	1,769	2,809	2,713	182,649
1897	6,536,593	1,905	2,973	.....	194,992
1898	6,669,732	2,065	3,266	3,168	210,952
1899	6,745,000[1]	2,198	3,503	3,396	222,607[1]

That these *écoles gardiennes* of Belgium are Froebelian will be seen from the following directions:—

The teacher (mistress) of an *école gardienne* is above all to develope the *spontaneous and free activity of the child.*

She is to make the teaching thoroughly *intuitive*, presenting the thing before the work.

She is to proceed from that which is at hand to that which is remote, from the *simple* to the complex, from the *concrete* to the abstract.

She is to provoke unceasingly *association of ideas*, and to make evident the link, uniting the occupations, etc., the games, and the successive exercises.

She is to frequently return to the same *notions*, but to present them under *various forms.*

She is to use the *Socratic* and *expositive* forms of instruction with discernment.

She is to early accustom the child to *express* simply, but correctly, the result of his observations, as well as his thoughts and feelings.

These are the essential things in the Froebelian method, and besides these there are all the other features, *e.g.*, manual Froebelian occupations, games, gymnastics, singing, etc.

Reference will later be made to the kind of knowledge which must be possessed by a teacher of an *école gardienne.*

28. *Guardian Schools in Luxembourg.*—The Grand Duchy of Luxembourg, with a population of about a quarter million, had, in 1899, 16 public and 13 private *écoles gardiennes* for the infant children.

29. *Kindergarten in Holland.*—In the summer of 1858 the Baroness Marenholtz-Bülow visited Princess Heinrich of the Netherlands, at the Hague, during which time she won over the sympathy of Van Rochuszen and Van Thorbecke, State Ministers, Frau Von Calcar, and others. Kindergartens were established in many places, and, in 1865, the last-named lady shewed the Baroness a number of well-conducted kindergartens in Amsterdam and the Hague, which she herself had laboured to develope. There are now such schools throughout Holland. The State, however, does not charge itself with the care of the infant schools (*Bewaarscholen*). In 1880 there were 972 infant schools, and in 1900, 1,047; but complete statistics are not available.

30. *Kindergarten in Denmark.*—In Denmark, Dresden Froebelian graduates have been at work for some time, and a Kindergarten Association has been formed to organise the founding of kindergartens, and to prepare the directresses for their work.[3]

31. *Infant Schools in Norway and Sweden.*—The development of infant-schools in Sweden is exhibited in the following table; they were first established in 1853:—

	1874.	1882.	1885.	1890.	1895.
Pupils—					
Stationary	?	90,327	102,490	111,729	127,222
Ambulatory	?	105,362	93,161	78,577	64,481
Total	?	195,689	195,651	190,306	191,703
Teachers	?	4,920	5,080	5,438	5,789
Schools	4,298	?	?	?	?
Population in millions	4·341	4·621	4·702	4·784	5·010

[1] Approximate only.

[2] The above table gives 326 infant schools, with 519 teachers, for each million inhabitants.

[3] According to a statement made by Baronin Bülow-Wendhausen in the *Dresdner Anzeiger.*

32. *Infant Schools in Switzerland.*—Although Froebel had developed his system in the German cantons of Switzerland about the year 1833, there was little survival of result when the Baroness Marenholtz-Bülow revived the cause in 1856 at Zurich. During the interval up to 1865 kindergartens were re-established, Professor Roux, of Lausanne, Frederic Soret, and others helping; and Geneva, Lausanne, and Neuchâtel being the three chief centres of activity. From that time forward the development has been very great, as the following statistics of infant schools (*écoles enfantines, écoles maternelles, écoles froebeliennes, kindergartenschulen, kleinkinderschulen*) from 1886 to 1900 abundantly shews:—

Year.	Population.	Infant-schools	Teachers.	Scholars.
1887	2,917,754	554	611	20,014
1888	.....	508	581	20,745
1889	.....	515	589	21,689
1890	.....	564	681	24,577
1891	.....	563	703	25,202
1892	.....	636	768	27,986
1893	.....	679	816	29,432
1894	2,986,848	711	881	30,201
1895	.....	669	868	30,747
1896	.....	671	914	32,419
1897	.....	720	962	33,784
1898	.....	723	978	34,673
1899	.....	759	955	38,918
1900	3,313,817	767	960	40,344

From 1900 this is equal to 231 infant schools, with 290 teachers and 12,174 pupils per million inhabitants. The age of entry varies from 2 to 4 years.

33. *Infant Schools in Germany.*—Although Germany was the home of Froebel, the kindergarten was, through an official mistake, suppressed in Prussia. This suppression was revoked only through the influence of the Baroness von Marenholtz-Bülow. By 1874 kindergarten-societies were sufficiently numerous to lead to the organisation of a union, and the Kindergarten Association of Thuringia was formed about the same time. The Dresden celebration of Froebel's hundredth anniversary in 1882 intensified the movement. In 1894 Saxony alone had as many as 234 schools, with 346 teachers and 11,015 pupils (kindergartens alone). Bavaria has a considerable number of *kleinkinderbewahranstalten* and kindergartens; in 1891, 31 of these were public and 179 private. In addition to these exist also a number of *krippen* (crèches), in which no educational work is attempted for children of 1 to 3 years of age.

34. *Kindergartens in Russia.*—In 1865 the Grand Duchess Helene Paulovna, who did so much for Russian education, sent three young Russian ladies to Berlin to study the kindergarten system. Shortly afterwards these schools were established throughout the Russian empire. There are several at St. Petersburg, Moscow, Riga, Dorpat, Odessa; the first in this latter place being started in 1886.[1]

35. *Infant Schools in Finland.*—Uno Cygnaeus, the father of the Finnish people's school, became acquainted with the Pestalozzi-Froebel education in St. Petersburg, in 1844. In 1858 he was required to organise a system of public schools for Finland, his idea was to found crèches and kindergartens in connection with the training-college for women teachers. Unfortunately, his committee did not always support him in his pædagogical ideas. Kindergartens were, however, actually established in Finland through the efforts of Pastor Cygnæus about 1866 (?). In a population of about 2⅝ millions, about 13,000 are entered as being in *écoles maternelles* at the present time.

36. *Kindergartens in Austria.*—For twenty-five years past kindergartens have developed in Austria through the efforts of the Minister von Stromeyer;[2] and the Public School law deals fully with the subject.[3] In 1889 Austria had 546 kindergarten and 486 infant schools. In 1892 Vienna alone is said to have had 546 (?) kindergartens. Owing to absence of statistics more complete information cannot be given here, but the kindergarten is a widely-established and permanent institution in Austria.

37. *Kindergartens in Hungary.*—The Hungarian Countess, Therese Brunswick, who had become acquainted with the methods of Pestalozzi at Yverdon, and had been impressed with some infant schools in England at the commencement of last century, inaugurated at Buda, in 1828, the first *école maternelle*, calling it the "angel's garden" ("*angyalkert*"). In 1836 a society was formed in Hungary for the propagation of these schools, afterwards called kindergartens; and also in 1837 a training-school for the education of the teachers for them was established. Although in 1848 there were eighty-nine *écoles maternelles*, in ten years they had dwindled down to fifty-two. In 1875 they were recognised by the State, and by 1876 the number rose to 215, directed by 315 teachers and attended by 18,624 children. In 1888 there were 603 infant schools, with 1,212 teachers and 55,639 pupils. In 1889, 474 out of 12,685 communities in Hungary had 644 infant schools and kindergartens, with 59,066 pupils of from 3 to 6 years of age, with 722 teachers and 504 nurses. The attendance at the kindergarten was made compulsory from 3 to 6 years of age by Statute XV of 1891. The Ministerial instruction of 1892 indicated clearly the spirit of the education which it was desired should be given, viz., the institution was to be a *maternal one*, whose mission was "to develope the physical and intellectual aptitude of children by occupations and games appropriate to their ages."

In 1900 Hungary possessed in all 2,427 schools substantially of this type, having a roll of 202,861 children. Besides 22 normal schools for teachers generally, Hungary had no less than 12 specially devoted to the education of mistresses for maternal schools, and these gave instruction to 677 student-mistresses.

[1] According to Baronin von Bülow. Life of Baronin Marenholtz-Bülow. Vol. 1, p. 281.
[2] According to Baronin von Bülow-Wendhausen.
[3] Oesterreich Gesetze, 27. Volkschulgesetze, Bd. 1, Abt. 12, pp. 141–148.

mistresses. The Hungarian kindergarten, while retaining the Froebelian principle, developed the details of the method on national lines, the influence of Magyar history and life being apparent in the songs, games, and occupations. Kindergarten teachers are trained at Buda-Pesth for two years, and are not qualified till 18 years of age. Their studies must include languages, literature, drawing, physics, hygiene, psychology, teaching-method, singing, and violin-playing. The Hungarian kindergartens are among the best in the world, and are comparable in excellence to the finest Swiss and American institutions. The following table indicates the rapidity of the development:—

Year.	Schools.	Teachers.	Pupils.
1828	1	Origin.	?
1848	89	?	?
1875	215	315	18,624
1888	603	1,212	55,639
1889	644	1,226	59,066
1890	703	829	63,000
1900	2,427	3,111	202,861

38. *Infant Schools n Croatia and Slavonia.*—The infant-schools in Croatia and Slavonia have about 2,000,000 inhabitants and possess 7 *asiles d'enfants* and 17 *écoles maternelles* with 35 mistresses and 1,358 children. The infant-school work consists of recital of little stories, songs, and easy work in the garden. The Croatian teachers have shewn a tendency to transform the *école maternelle* into a little primary school, but this has been interdicted.

39. *Infant Schools in Italy.*—In Italy the Baroness Marenholtz-Bülow urged the doctrines of Froebel, between the years of 1868 and 1873, as also did the American Minister, George P. Marsh. Italian pædagogues had, however, occupied themselves with something of the sort for the past fifty years; and when the Baroness visited Venice,[1] in 1873, there were two well-organised kindergartens already established, partly owing at least to her advocacy of the Froebelian cause. Shortly after, the first kindergarten in Florence was opened.[2] The Istituto Peterman and the Istituto Vittorio Emmanuele, of Rome and Naples respectively, and the Institute of Udine are really Froebelian, though they do not rigorously imitate the kindergartens of Germany. The Italian infant schools (*asili infantili*) of this type are perhaps more like the French *écoles maternelles*. The manual work consists of folding, cutting, pricking, modelling. The avowed object according to the *Relazione* of the lady principal of the Istituto Vittorio Emmanuele, is "to produce clear and exact impressions in the mind of the child, to fix his attention, to develope in him accurate observation and manual dexterity." In 1880, the hundredth anniversary of Froebel's birthday, the envoy of the Italian Government brought albums containing the expressions of thanks from forty cities in Italy where kindergartens then existed. The following indicates the development of infant schools in Italy:—

Year.	Infant Schools.	Teachers.	Pupils.	Population.
1879	?	3,752	183,809	28,437,091
1886	1,489 ?	5,603	252,763	29,943,607 ?
1896	2,813	6,884	317,117	31,500,000 ?

Of these last 992 were absolutely free; 1,208 were free only to the poor but not to others; 613 required payment from every pupil, 195 being public, and 418 private establishments. Of the 2,813 kindergarten or infant schools, 478 were Froebelian, 135 followed the Aporti method, and 2,200 a mixture of the two methods.

The following more complete table, compiled from statistics kindly supplied by Dr. V. Marano, His Majesty the King of Italy's Consul in Sydney, will shew the steady increase of infant schools in Italy. Apparently, in the preceding results the private infant schools have not been included in 1886, as there were 650, which with 1,489 makes 2,139:—

Year.	Infant Schools.	Pupils.	Population.
1884	2,035	229,510	28,931,438
1885	2,083	240,365	29,120,162
1886	2,139	252,763	29,308,886
1887	2,224	258,838	29,497,610
1888	2,218	261,506	29,686,334
1889	2,220	268,182	29,875,058
1890	2,296	278,204	30,063,782
1891	2,232	279,965	30,252,500
1892	2,348	292,124	30,441,224
1893	2,572	302,754	30,629,955
1894	2,627	302,939	30,818,677
1895	2,799	313,841	31,007,399
1896	2,819	317,313	31,196,126

Of the above, about two-thirds are public and one-third private schools, and about four-fifths of the children are in the former. 40.

[1] According to Dr. W. T. Harris, a kindergarten was founded in Venice by the Baroness in 1868, *vide* Report of the Commissioner for Education 1888-9, p. 189.

[2] This was in 1871, so Dr. Harris states. *Ibid.*, p. 189.

40. *Kindergarten in Spain.*—The first kindergarten in Spain was established by Fräulein Gräfl about 1860, and the Froebelian ideas taught at the University by Professor del Rios. In the seventies, Count Vale de San Juan studied at the Froebel Institute at Dresden in order to introduce the system into Spain, several graduates of that Institute also going there.

41. *Maternal Schools in Portugal.*—The maternal schools of Portugal, for children of from 3 to 6 years of age, are managed by directors, with one assistant for every twenty children. Some of these are Froebelian.

42. *Kindergarten in Greece.*—In the early seventies, several wealthy Greek women studied at the Froebel Institute at Dresden, and succeeded in introducing the system into Greece, Madame Lascardi and Mademoiselle Zoto being among these pioneers.

43. *Kindergarten in Turkey.*—Fraulein Johanna Sack, granddaughter of Professor von Fichte, founded the first kindergarten in Turkey in 1860 at Constantinople.

44. *Kindergartens in Japan.*—In 1890 Japan had no less than 138 kindergartens, with 271 teachers and 7,486 pupils. Of these 39 were private, and 99 belonged to the Government. The girls numbered 3,301, and boys 4,185. In 1891 the attendance had risen to 12,484. The Japanese kindergarten exhibit at the Columbian Exposition attracted much attention through its excellence.

Uruguay.—Between 1890 and 1892 an effort was made in Uruguay to establish the kindergarten as a preliminary to the elementary grades in their ordinary school-system. This was done after a report by Doña Enriqueta Compte y Rique, who had investigated the subject in Europe. *The period to be covered was from three to seven years, the last year being preparatory to the lowest grade in the elementary school.* The Educational System of Uruguay is said to be very good. Population about 700,000.

45. *Kindergartens in various other countries.*—In *Jamaica* instruction in Froebel-kindergarten is being provided for teachers. Kindergartens are said by Baronin Bülow-Wendhausen to exist in *Arabia*, in *China*, and in *India*, mostly for foreigners, but also for natives, at least in the last two instances; and also in *Armenia*, and the *Argentine Republic*. One has even be founded in *Persia* by a Russian princess.

46. *Kindergarten in Great Britain.*—At the exhibition of educational material in London in 1854, the whole of Froebel's kindergarten material, together with an explanatory statement, was shewn by the Baroness von Marenholtz-Bülow. Shortly after, and during a six-months' stay in England, she established a propaganda to promote the Froebelian cause, and several kindergartens were actually established. Ronge also took some part in the development of the Froebelian schools. The kindergarten idea was well received; and a considerable amount of kindergarten work has been going on in the United Kingdom ever since, not only privately, but also under the Board Schools. In Wales, as has already been seen, a high standard of training is provided, and it may be said that the kindergarten movement is at present rapidly developing throughout the United Kingdom, and schools of this character are numerous.

47. *Kindergarten in Cape Colony.*—In Vol. 5, 1901, p. 160, of the Special Reports on educational subjects, it is stated that "arrangements have been made for a skilled and experienced instructress in kindergarten, with a view to opening classes for adult certificated teachers in the current year" (1900).

48. *Kindergarten in Natal.*—The Bishop of Natal, who had met Baroness von Marenholtz-Büowl in London in 1854, established a kindergarten in his See as early as 1855. In 1898 the Superintendent of Natal Education, Mr. Robert Russell wrote:—"In 1897 I went to the annual display of what the Chief Inspector of English Schools described as one of the best kindergarten and Froebel training schools in London." The visit does not seem to have impressed Mr. Russell, but it may be said that kindergarten has since then greatly improved in England. Infant schools in the modern sense commenced in Natal in 1878, but the report does not indicate very clearly their precise character.

49. *Kindergarten in Victoria.*—On the date of the Commissioners' visit, Victoria had not organised a systematic kindergarten for infants. The following extracts, from Second Progress Report (29 Nov., 1899) of the Royal Commission on Technical Education, are important, as shewing the decision in favour of kindergarten:—

"We feel that there is no longer any necessity to urge the value and importance of kindergarten work, this being abundantly recognised by all educational authorities; and that the results . . . . have been sufficient to dispel any doubt in the minds of the people as to its value in dealing with the infant mind, and in laying the superstructure for later educational development. . . . . The ideal kindergarten is a place *where the individuality of every child is studied, and the best possible conditions given for its mental, moral, and physical growth.* . . . . . The Commission looks forward to kindergarten principles being universally applied in the schools in the future. . . . . *Our inquiries in New South Wales have only served to strenghten the view that competency in kindergarten instruction can only be secured after severe course of training,* and *only then when the teachers are specially adapted to sympathetically appreciate the spirit of kindergarten.* All competent authorities agree that the mere teaching of kindergarten methods by means of text books, or *by inspection of classes at work,* must always be futile, and only result in a total misapprehension of the essential nature of the system, and waste of valuable time and energy. In this connection it is well to mention that so much importance is already paid to the training of teachers for private schools in New South Wales, that the Kindergarten Union, previously referred to, prescribes a course of study of two years, commencing with the theory and practice of kindergarten, elementary geometry, psychology of children, and the history of education, and concluding in the second year with the theory of sense perceptions, and the occupation work of sewing, weaving, paper folding, black-board drawing, clay work, etc. This view is confirmed by the testimony of Miss Banks, the infant mistress in the Fort-street School, Sydney, an educationist of high qualifications as to infant teaching, and a student with experience and training in Germany and England."

50. *Kindergarten in South Australia.*—Kindergarten of a systematic character had not been organised in this State at the date of the Commissioners' visit, though a beginning had been made. The Regulations of 1900 state that "it is expected that (1) singing and the recitation of easy poetry, (2) suitable physical exercises, and (3) occupations for the hands of the kind known as kindergarten exercises, will form an important part in every day's work. Musical drill is strongly recommended."[1] Such a treatment as is here implied is obviously very different from systematic kindergarten.

51.

[1] Acts and Regulations 1900. Reg. No. 196, p. 51.

51. *Kindergarten in West Australia.*—Although kindergarten teaching is hardly yet systematised, it nevertheless has been inaugurated in Western Australia. In the report of Mr. J. P. Walton, Chief Inspector of Schools, he says:—"*It is once more necessary to warn teachers that they have not introduced the kindergarten system when they have included a few varied occupations into their time-tables.* . . . . *Froebel introduced system, a method of teaching* which should affect every lesson and every subject. *Teachers should make a study of the principles underlying the system* and not rest satisfied with producing a few specimens, more or less well executed, of paper folding, embroidery, mat weaving, etc."

There is also a suggestion as to kindergarten work which reads as follows:—"Young children exhibit a love of movement and an eager desire of questioning. They must be trained, not repressed. Kindergarten aims at the harmonious development of the child's nature, and its games, stories, and occupations stimulate the mind, while strengthening sense perception and bodily activity."

"In the infant classes, drawing, paper folding, stick laying, building, etc., will teach the children accuracy of eye and usefulness of finger."[1]

On the occasion of the Commissioners' visit, the kindergarten had not attained to a thoroughness in any way comparable with the Continental, American, or English idea of it, but it was rapidly progressing in the right direction.

New Zealand.—In Mr. Riley's report on Manual and Technical Instruction for 1898, he urges "the adoption of kindergarten schools in every district throughout New Zealand; for, to my mind," he says, "the methods of the kindergarten are of the truest educational value." He suggests training of teachers for kindergarten work.

52. *Effect of Kindergarten Training.*—A word or two may be permitted as to the significance of the kindergarten system, in so far as that revealed by actual observation of its effect.

It has been recently noticed in Holland, that children who have been to the Froebelian kindergartens are proportionately more successful than those who have not. For example, in the matter of advancement in the primary schools, the ratio of successful to non-successful with *non-kindergarten* children was 1·3, while the same ratio for *kindergarten* children was as much as 3·3.[2] One is reminded of Plato's idea that it made the children more wide-awake.

Extensive inquiry in America has revealed the fact that while it is at first a little more difficult to establish the primary-school discipline in the case of kindergarten children, because they have been accustomed to liberty, their turbulence is, nevertheless, quickly corrected; *they have no difficulty in understanding the necessity for order, being more alive and active* than other children. It is found that in several weeks, discipline is easiest with them. A class of pupils from a kindergarten is said to be a "delightful little social community"; the most striking characteristic being the high moral tone exhibited, while at the same time their intellectual faculties are more highly developed. Children from kindergartens, according to American testimony, have more *imagination* than their comrades, they *understand more quickly*, and have a *better knowledge of nature*, and *a greater love for beautiful things.*

Whatever allowances be made for the exaggerations of enthusiastic teaching, there is no doubt in the minds of the Commissioners that the kindergarten-system brightens the minds of little children; creates in them a love of nature, and a spirit of observation; it does this without burdening the memory with precocious and sterile knowledge; and last, but above all, it elevates their moral tone.[3] These facts the Commissioners regard as impressive: they feel that such facts are of sufficient moment to warrant a determination of the policy of the State in regard to the question of kindergarten-teaching. It is no longer possible to regard kindergarten work as an unimportant and, perhaps, useless luxury, with which the wealthier classes may be left to deal at their own discretion.

53. *Conclusions Respecting Kindergartens.*—(1) Judging kindergarten (*a*) by its rationale, (*b*) by its history, and (*c*) from actual observation, the Commissioners consider it to be of high importance in an educational system, and to be the proper initial step in all education. This they believe to have been long ago demonstrated beyond all doubt.

(2) Its absence in any scheme of public instruction they believe to be a serious defect, and one which, particularly in a democratic community, ought not to continue.

(3) The form of kindergarten most desirable is what may be called modified Froebelian kindergarten.

(4) It is essential, in modifying the kindergarten, that its systematic character be maintained, and that the Froebelian principles be strictly adhered to; that is to say: while the scheme should be thoroughly organised and articulated, the whole of the instruction should be developed through play—self-activity should be promoted. The course should not be allowed to become charged and burdened merely with primary work, which, of course, would destroy its Froebelian character.

(5) Desultory employment of some or all of the gifts and occupations is not kindergarten as understood by educationists, and should not be substituted for the true kindergarten.

(6) Kindergartens should be taught by properly educated and properly trained teachers, who, in addition to having a good secondary education, have systematically studied at least Froebelian occupations, the psychology of pædagogy, the theory of education, the history of pædagogy, and hygiene. (See particulars hereinafter.) Teaching by uneducated persons, or by those who do not thoroughly understand kindergarten theory is to be deprecated.[4]

(7) The kindergarten that exists at present in the schools under the Department of Public Instruction (*a*) is not yet systematic; (*b*) nor is it adequate; moreover, it is not kindergarten in the European or American sense.[5] (*d*) From the preceding brief indication of the geographical extension and

[1] The Education Acts and Regulations. W. A. 1900, p. 92; or p. 60, in a paper on "The System of Education in Western Australia; or p. 516, in "Special Reports," London, 1901. Vol. V.

[2] Klassenhoogte en ouderdom der schoolgaande jeugd. Paedologisch Jaarboek, 3 en 4 Jaargang, p. 171 *et seq.* Dr. M. C. Schuyten. 1902–3.

[3] On this matter, see "Expositions scolaires étrangères." (*Op. cit.*), p. 737.

[4] The significance of kindergarten training is referred to in a paper on "The professional training of teachers," by Miss Margaret Hodge, M.A., read before Section J of the Australasian Association for the Advancement of Science, Hobart meeting, 1902, pp. 779-784.

[5] The results achieved at Fort and Riley Streets, and at the schools of the Kindergarten Union, with all their limitations of organisation and material, are nevertheless very gratifying.

and history of kindergarten, it is obvious that this State, in so far as its Department of Public Instruction is concerned, is seriously behind the practice of Europe and America in respect of kindergarten-teaching.[1]

(8) Where it exists at all, the present kindergarten equipment of schools is quite inadequate.

(9) Every kindergarten should possess an infants' garden, a full equipment of material, and should have a well articulated kindergarten scheme.

(10) Children should be allowed to attend the kindergarten at any age above 3 years, and up to 7 years.

(11) The hygienic conditions of kindergartens, as well as other schools, should be perfect, and very different from what they now are—(*a*) in regard to school-buildings, (*b*) and in regard to care of the children. (The hygiene of kindergarten and other schools will be treated hereinafter.)

(12) When kindergarten is introduced it should be done thoroughly, and not done at all until done thoroughly. The value of kindergarten cannot be judged from a half-developed scheme, and it has often been adversely judged through imperfect presentation.

(13) As soon as infant schools are properly equipped with respect to hygiene and to kindergarten material, strong inducement to the people should be held out to send their little ones to them by suitable advertisement of the advantages of such schools.

(14) Attendance at the kindergarten should be compulsory at the age of 6 years, but not before.

The question of organising kindergarten and other teaching will be dealt with later, and the question of school equipment and school hygiene generally, will also be treated later.

CHAPTER V.

Outlines of some Educational Systems—Switzerland.

[G. H. KNIBBS.]

Introductory.—In order to form a judgment as to what is necessary in an educational scheme, so developed that the citizens of this State may ultimately have educational opportunities comparable to those of people in other parts of the civilised world, it is necessary to outline their systems; especially those of countries where method and development have been systematically studied, and where the attempt to educationally equip their people has aimed at thoroughness. It is only by this comparative study that one can see where we are educationally; only in this way can we ascertain our real place on the educational ladder of the world.

Among the Continental systems of peculiar importance to us, those of Switzerland are in the first rank, not only because of their great excellence, but also because the democratic spirit of the Swiss is in many respects akin to our own. No schools in the world are better equipped for teaching, and it is to be remembered that the Swiss have been in the centre of pædagogic activity. In reviewing their curricula it should also be recollected that the teaching is not by novices, nor by "pupil-teachers," but by persons who first of all have had a good secondary education, and have then specially applied themselves to pædagogy. Even where curricula are identical, teaching by thoroughly educated teachers must have the higher value.

This chapter will deal with the outlines of systems as far as the end of secondary education.

2. *The System of the Canton of Geneva.*—The Geneva scheme comprises:—I. Primary Education. II. Secondary Education. III. Superior Education.

The primary education is given in the following schools, viz.:—

(*a*) Infant schools; (*b*) Primary schools; (*c*) Complementary schools.

The fundamental idea of the primary system is, that *the general development* of the pupils is a higher aim than the mere acquisition of items of knowledge. The Genevese school authorities hold that this development cannot be brought about except through constant exercise of the observing faculty, and constant reference to acquired experience; and for this reason *their system of primary education has been organised according to the principles of the intuitive method.*

(*a*) As we have already seen, the *infant school* aims at—(i) completing, or taking the place of, home-education; (ii) preparing for the primary school. The method followed is Froebelian. The school has two divisions; the lower, for children of from 3 to 5 years of age; the higher, for those whose ages lie between 5 and 7 years.

(*b*) The *primary school* covers 6 years; it is gratuitous, and is obligatory for children of from 7 to 13 years of age who receive no other instruction recognised by the law. Promotion is determined by the results of the two half-yearly examinations combined with the results of the daily work and daily conduct of the pupils for the current year. The results serve as a basis for the distribution of prizes, four being given in each class, only, however, when more than a certain minimum number of marks are obtained.

The

[1] It is important to bear in mind in this connection that this statement does not in any way imply censure on the often devoted teachers, who are doing their best, under existing limitations, to introduce the kindergarten method.

The time is distributed among the different studies, as shewn in the following programmes translated from official documents. The first is for boys, the second for girls:—

CANTON OF GENEVA.

PROGRAMME OF INSTRUCTION IN THE PRIMARY SCHOOLS.

Distribution of the time among the different branches of instruction.

	Year.					
	1	2	3	4	5	6
Boys' Class.						
Mother-tongue { Object-lessons	.....	.....	.....	.....	2	2
Mother-tongue { Reading and Recitation	9	9	9	11	2	2
Mother-tongue { Redaction, Orthography, Grammar	.....	.....	.....	.....	5	5
Arithmetic	2½	3	3	4	3	3
Geometry	.....	.....	2	2	2	2
German	.....	.....	.....	.....	3	3
Geography	.....	1½	2	2	2	2
History	.....	.....	.....	.....	1½	1½
Drawing	3	3	4	3	3	3
Caligraphy	1½	1½	1½	1	1	1
Gymnastic and Games for lower classes	6	4	3	3	1½	1½
Singing	2	2	1½	1	1	1
Manual work	6	6	4	3	3	3
Total	30	30	30	30	30	30
Girls' Class.						
Mother-tongue { Object-lessons	.....	.....	.....	.....	2	2
Mother-tongue { Reading and Recitation	.....	9	9	10	2	2
Mother-tongue { Redaction, Orthography, Grammar	.....	.....	.....	.....	4	4
Arithmetic	2½	3	3	4	3	3
Geometry	.....	.....	2	2	2	.....
German	.....	.....	.....	.....	3	3
Geography	.....	1½	2	2	2	2
History	.....	.....	.....	.....	1½	1½
Drawing	3	3	4	3	2	2
Caligraphy	1½	1½	1½	1	1	1
Gymnastics and Games for the lower classes	9	4	3	3	1½	1½
Singing	2	2	1½	1	1	1
Manual work	6	6	4	4	5	6
Domestic economy	.....	.....	.....	.....	.....	1
Total	30	30	30	30	30	30

In the city and larger communities there are schools for girls and for boys separately, but in the country places the schools are mixed, and moreover the classes comprise pupils of different years.

No class may contain more than forty pupils. All the city schools, and most of the country schools, have special halls for manual work and gymnastics, and recent schools have shower-baths for the pupils.

(*c*) The *complementary schools* are schools for consolidating the work of the primary school. At 13 years the pupil may leave the primary school, whatever class he is in; but in that case he must, till he is 15 years of age, attend the complementary schools. The programme in these is the development of those of the two last years of the primary school. In the city the instruction is given in the primary school buildings on Thursday from 10 o'clock till 12, and other days from 11 o'clock till 12. In the country the instruction is received either in the primary or in the secondary school.

3. *Secondary Education.*—The secondary education comprises—(i) schools for professional education, such as (*a*) optional evening classes, (*b*) rural secondary schools, (*c*) professional schools, (*d*) a housekeeping and professional school; (ii) the Geneva College; (iii) the secondary and superior schools for young ladies.

(*a*) The optional evening classes are from 6–8 p.m. from October to March inclusive.

The programme is as follows:—

First Year.		Second Year.	
Subjects.	Hours per week.	Subjects.	Hours per week.
Young Men.			
Commercial Arithmetic	2	Book-keeping	2
Algebra	3	Physics and Electricity	3
Geometry	3	Chemistry	3
Physics and Chemistry	3	Mechanics with application to Industrial Drawing	4
Drawing	3	Drawing	3
Technical Drawing	2	French	3
French	3	German	3
German	3		
Young Women.			
French	2	French	2
German	2	German	2
Commercial Arithmetic	2	Book-keeping	3
Caligraphy	2	Domestic Economy	1
Drawing	3	Hygiene	2

Pupils can choose freely, but once their names are inscribed they must attend regularly. They pay only 1 franc for each course, which course closes with an examination.

(*b*) *The secondary rural schools* comprise two or three years' study. Their programme is as follows :—

Young Men.			Young Women.	
Subjects.	Winter.	Summer.	Subjects	
French	2	2	French	3
German	2	2	German	2
Arithmetic	2	2	Arithmetic and Accountancy	2
Geometry	1	2	Physics	1
Natural and Physical Science	2	3	Geography and History	2
Geography and History	2	2	Drawing	2
Agriculture, Horticulture, and Manual Work	2	2	Domestic Economy	1
Drawing	2	2	Singing	1
Gymnastics	1	1	Cutting-out and Making-up	4
Singing	1	1	Ironing	2
	17	19		20

The instruction in agriculture and horticulture comprises arboriculture, vegetable gardening, viticulture, zootechnics, and agriculture. These five branches are entrusted to special professors. Adults are invited to assist at their lessons and practical demonstrations ; and at each school there is an experimental garden. The schools are moreover equipped with a little apparatus for agricultural chemistry, for analysis of the soils, etc.

For girls, the cutting-out and making-up is of the advanced stage. Pupils who have proceeded regularly through the two years of the rural secondary schools are admitted to the pædagogic section of the Geneva College, or in the fourth class of the secondary and superior schools for girls. There are no fees, and the school material is gratuitous.

(*c*) The *professional school* is not a trade school, but a school of general instruction, which, because of the importance assigned to drawing and manual work, etc., prepares the pupil for problems in construction, and also gives them some practical facility. This affords them the opportunity of a better apprenticeship to any industry. On the other hand, good instruction in accountancy, in geography, and a thorough grounding in German, permit a number of young men to embark, under good conditions, on an apprenticeship to commerce.

Pupils passing regularly through this course are admitted to the technical and pædagogic sections of the higher college (IV). The programme is as follows :—

Subjects.	1st Year.	2nd Year.	Subjects.	1st Year.	2nd Year
French	4	3	Physics	2	2
German	4	4	Chemistry	0	2
Commercial Geography, History, and Civic Instruction.	4	4	Accountancy	2	2
			Drawing and Modelling	7	7
Arithmetic and Algebra	2	2	Technical Design	2	2
Geometry	2	3	Manual Work	3	3
Mechanics and Computations	0	5	Gymnastics	1	1
Natural Science	2	0			
			Total	35	40

Certificates are given on passing satisfactorily the half-yearly examinations. The instruction is gratuitous.

(*d*) The *housekeeping school* gives instruction in the following subjects, viz. :—

	1st. Year.	*2nd Year.*
Cutting and Sewing	Linen Children's Clothes	Linen. Children's Garments. Women's Garments.
Washing and Ironing	Ironing articles not starched	Ironing starched articles, both raw starch and boiled.

Attendance is gratuitous.

The Geneva College.—The lower division is all alike, the time is allotted therein as follows :—

Subject.	Class—			Subject.	Class—		
	VII.	VI.	V.		VII.	VI.	V.
French	5	5	5	Drawing	2	2	3
Latin	6	6	6	Caligraphy	1	1	...
German	4	4	4	Singing	1	1	1
History	2	2	2	Gymnastics	2	2	2
Geography	2	2	2				
Arithmetic	3	3	3	Totals	30	30	30
Natural Science	2	2	2				

The

The higher division is divided into four sections, and has its programme arranged as follows:—

Subject.	Classic Section.				Science Section.				Technical Section.				Pædagogic Section.			
Class	IV.	III.	II.	I.	IV.	III.	II.	I.	IV.	III.	II.	I.	IV.	III.	II.	I.
French	3	3	3	3	4	4	4	3	3	3	3	2	4	4	4	3
Latin	7	7	6	6	4	4	4	4	...	...	...	...	...	...	...	...
Greek	7	7	6	5	...	...	...	...	...	...	...	...	...	...	...	...
German	3	3	3	3	5	5	5	5	5	5	5	5	5	5	5	4
English	(2)	(2)	(2)	(2)	3	3	3	3	3	3	2	...	...	...	...	...
History	3	3	3	3	2	2	2	2	2	2	2	2	2	2	2	3
Geography	2	2	2	...	3	3	2	...	3	3	...	...	3	3	2	...
Mathematics	4	4	4	3	4	4	4	3	4	4	4	3	4	4	4	2
Elocution	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...
Special Mathematics	...	...	...	...	...	...	...	...	2	2	3	4	...	...	...	...
Cosmography	..	...	...	1	...	...	...	1	...	...	...	1	...	...	...	1
Natural Science	2	2	...	...	3	3	2	...	3	3	2	...	3	3	2	...
Physics	...	...	2	2	...	...	3	3	...	...	3	4	...	...	3	3
Chemistry	...	...	...	2	...	...	...	3	...	...	...	3	...	...	...	3
Philosophy	...	...	1	2	...	...	1	2	...	...	...	...	..	...	...	...
Political Economy and Law	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2
Accountancy	...	..	...	...	1	1	...	...	...	...	...	...	1	1	...	...
Drawing	...	...	...	...	2	2	2	2	3	3	2	2	2	2	2	2
Technical Drawing	...	...	...	...	...	...	...	...	3	3	2	2	...	...	...	...
Descriptive Geometry	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...
Special Course, Pædagogic Section	...	...	...	..	...	..	...	...	...	...	...	...	7	7	9	11
Totals	31	31	30	31	31	31	31	32	31	31	30	31	31	31	33	34

The special course of the pædagogic section comprises the following:—

Subjects.	IV.	III.	II.	I.	Subjects.	IV.	III.	II.	I.
French	2	2	...	...	Music	3	3	3	3
General Pædagogy	...	...	2	...	Caligraphy	...	...	1	1
History of Pædagogy and Examination of Manuals	...	...	...	2	Elocution	1	1	...	1
Hygiene	...	...	1	...	Civic Instruction	...	...	...	1
Manual Works	...	...	2	2	Agricultural Economy	...	...	...	1
Gymnastics	1	1	...	...	Totals	7	7	9	11

As the preceding tables shew, *all* the college pupils take Latin for three years in the lower division, and after that time they must decide on one of the four roads which open out—that is, the classic, scientific, technical, or pædagogic.

The diploma of "maturity" in the classic and real (scientific) sections give access to the five faculties of the University; the technical and pædagogic sections open to them the faculties of literature (arts), science, and medicine.

Further, the certificate of maturity in the technical section admits, without examination, to the Zurich Polytechnicum. Finally the certificate of maturity in the pædagogic section enables a pupil to be admitted by the Department of Public Instruction, to undertake a stage in the primary schools which qualifies him to apply for the position of under-teacher in these schools. The examinations are half-yearly as in the professional schools. The results, combined with those of the year's work, decide the promotion and the award annually of the certificates.

The sections are not wholly separated, but certain courses are common to the pupils of several sections. The first pædagogic section, on the other hand, is wholly separated, constituting a kind of normal class. Outside the courses special to them, the pupils are called upon to assist at the lessons given in the primary school, and to give lessons themselves, which are criticised by the master.

The fees in the lower division of the college are 20 francs a quarter; in the higher division they are—for IV and III, 25 francs per half-year; for II and I, 30 francs per half-year.

4. *Secondary and Superior School (Ladies).*—The secondary school consists of Classes VII to IV, and the superior of Classes III to I, together constituting the ladies' college, with altogether a seven years' course. In the last two years there are two sections, viz., the literary and pædagogic. The following programmes shew the work:—

Firstly, the Lower Division.

Subjects.	VII.	VI.	V.	IV.	Subjects.	VII.	VI.	V.	IV.
French	7	6	4	4	Physics and Chemistry	...	...	...	2
History of French (Literature and Composition)	...	...	1	3	Drawing	2	2	2	2
German	3	4	4	3	Caligraphy	1	1	1	1
General History	2	2	2	2	Music	1	1	1	1
Geography	2	2	2	2	Gymnastics	2	2	2	1
Arithmetic	3	2	2	2	Needlework	3	3	3	3
Natural History	...	1	2	...	Totals	26	26	26	26

Secondly,

Secondly, the Higher Division.

Subjects.	Literary.			Pædagogic.		Subjects.	Literary.			Pædagogic.	
	III.	II.	I.	II.	I.		III.	II.	I.	II.	I.
French Language	2	...	1	...	1	History and Theory of Pædagogy	...	...	...	...	2
History of French (Literature and Composition)	3	5	3	5	2	Drawing	2	2	2	2	1[1]
Elocution	1	...	1	...	1	Caligraphy	...	...	1	...	1[1]
German	3	3	3	3	3	Music	1	1	1	1	1
General History	2	1	..	1	...	Needlework	2	2	2	2	1[1]
National History	...	...	2	...	2	Hygiene	...	...	2	...	2
Geography	2	2	...	2	...	Domestic Economy	1	...	...	...	...
Cosmography	...	...	1	...	1	Gymnastics[2]	1	...	...	1	1[1]
Accountancy	2	...	...	...	...	Intuitive Education	...	...	...	...	1[1]
Arithmetic, Algebra	...	...	...	2	...	Mother-tongue	...	...	...	...	1[1]
Geometry	1	2	...	2	...	Geography, History	...	...	...	...	1[1]
Physics	...	2	...	2	...	Arithmetic, Geometry	...	...	...	...	1[1]
Chemistry	1	...	...	...	...						
Natural History	2	2	2	2	2						
Psychology	...	...	...	1	...	Totals	26	21	21	26	25

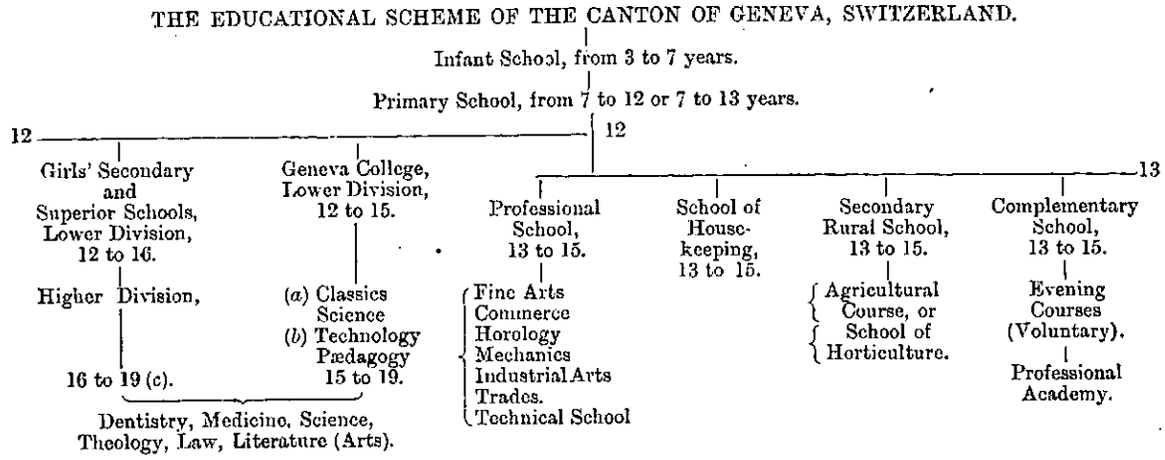
Besides these, there are optional courses in the following:—Greek and Latin Literature, Foreign Literature, General History, History of Philosophy, History of Art, Civil and Commercial Law.

These are all two hours per week, excepting the last, which is one hour. In addition to the courses initiating the pupils of the pædagogic section into the methods of teaching various subjects, they are periodically invited to demonstration lessons in the primary schools. The studies end in an examination for the "Certificate of Capacity," which is exacted of those who wish to teach in the primary schools.

A mere programme hardly gives any real idea of the actual character of the instruction in the establishments. Programmes may, of course, be pretentious. The best way of judging them is to come in contact, and converse with, the graduates under the system. Judged in this way, there can be not the slightest doubt that the curricula are all that they profess to be. Another way of forming some kind of opinion is to see how the programme is developed in detail. This will be exhibited in the next section of this chapter.

In order to get a clear idea of the general scheme just outlined, a graphic representation may be of some assistance. The following shew the various schools and their inter-relations:—

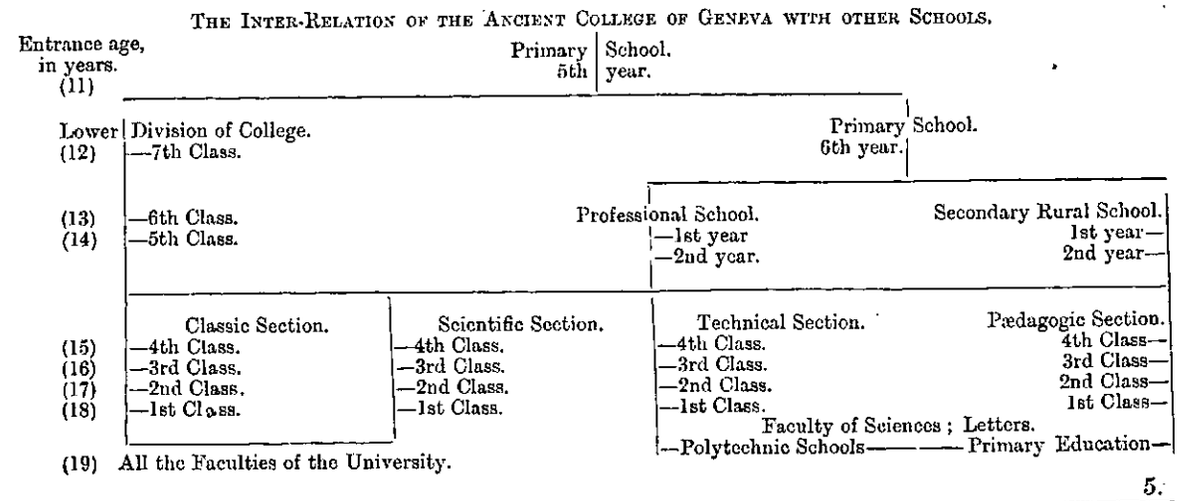
THE EDUCATIONAL SCHEME OF THE CANTON OF GENEVA, SWITZERLAND.



The scheme of relation between (*a*), (*b*), and (*c*) and the various Faculties, etc., is as follows:—[3]

(*a*) Dentistry, Medicine, Science, Literature, Theology, Law.
(*b*) ———— ,, ,, ,, ———— ————
(*c*) ———— ,, ,, ,, ,, ,,

THE INTER-RELATION OF THE ANCIENT COLLEGE OF GENEVA WITH OTHER SCHOOLS.



[1] These courses belong to the normal courses.
[2] The gymnastic course is optional for the literary section in classes.
[3] Renseignements généraux publiés par le Département de l'Instruction publique. Genève, 1896.

5. *The Programme of the Infant Schools of Geneva.*—These programmes for infant children have two divisions, but there is a kind of parallelism running through the two courses, which has been indicated in the setting out of the lesson-material. One may again be reminded that these lessons are given by teachers who have systematically studied the art of teaching, and the Froebelian method as a speciality.

PROGRAMME FOR INFANT SCHOOLS.

Lower Division, 3-5 years.	*Higher Division, 5-7 years.*
1. Intuitive instruction by means of Froebelian material.	1. Intuitive instruction by means of Froebelian material.
2. *Talks on Morals.*—Simple stories designed to contribute to the moral and educational development of the child, and to establish him in good habits.	2. *Talks on Morals.*—Stories of which the essential aim is the development, in the child, of emotional feeling, conscience, love of work, and love of duty. The text of other lessons is to be drawn from the little talks on morals, which each week will in this manner give a certain unity to the instruction.
3. *Object-lessons.*—Chats, the aim of which is to make the child understand the objects, plants, or animals which surround it. From 3 to 4 years, the conversations on morals and the object-lessons about any subject ought to be cast in a single narrative.	3. *Object-lessons.*—Narratives, discourses, or chats in which the child is given, in a manner suited to his capacity, elementary scientific notions about the objects, plants, or animals of his country. (The object-lessons have for aim the development in the child of spirit of observation, reflexion, and judgment).
4. *Mother-tongue.*—Such exercises in speech as will help the child, whether it be to exactly reproduce simple words and phrases, or to discover simple words or phrases. These exercises will especially follow the trend of the chats and object-lessons.	4. *Mother-tongue.*—Preparation for reading by exercises in analysis and of decomposition, by means of which the child learns to reorganise and find words, syllables, and sounds or vowels: Study of consonants. Voluntary reading of simple syllables, words, expressions, and small easy phrases. Study of equivalents from the point of view of reading and orthography. Easy exercises in fluent reading; oral and written reproduction of simple words and phrases. Little oral exercises of redaction.
Writing.—Preparation for writing by drawing.	*Writing.*—Elementary exercises, graduated and rhythmed (with chalk) of easy syllables and words provided in the reading. Preparatory exercises for ink. Medium.
Arithmetic.—Preparation for reckoning by means of Froebelian material. Reckoning as far as 6. Division of a whole into halves or quarters.	*Arithmetic.*—Intuitive reckoning by means of Froebelian material. The four arithmetical operations as far as 10. Oral and written reckoning. Division of a whole into halves, quarters, and eighths. Little oral problems. Numeration as far as 20.
Geometry.—Elementary geometrical ideas by means of Froebelian material.	*Geometry.*—Geometrical ideas by means of Froebelian material. Point, line, surface, solid.
Drawing.—First year—The children are prepared for drawing by means of Froebelian material. Second year—First attempts at drawing; the pupil forms little surfaces or sticks (bâtonnets) on the slates with dotted rows by using the cubes of the second gift. The rows are then drawn upon the dotted slate.	*Drawing.*—Third year—Continuation of exercises by means of cubes, squares, and sticks (bâtonnets). Drawing according to folding. Ornamental arrangements obtained by the combination of right lines. (The right lines are given by the sticks and the folding.) Preparation for the drawing of curves. Composition. Drawing from memory. Fourth year—Division of the line into 2, 4, 8, 3, 6 parts. Decorative applications (motifs de décoration). Combinations of lines and curves. Composition. Geometrical figures. Triangles. Squares. Rectangles. Drawing of common objects without indication of the relief. Drawing of letters in printed characters. Some attempts at design of leaves by counter-drawing from points.
Singing.—Simple melodies with easy words. Intuitive instruction as to measure (time).	*Singing.*—Intoning exercises. Gamut of "do" (key of C.) Perfect accord. Singing in unison and in two parts. Melodies and easy words.
Gymnastics.—Movements and games, marches, rounds, and ball-play.	*Gymnastics*—Movements and games, marches, rounds, and ball-play.
	Sewing.—Preparatory exercises.

6. *Programme of the Geneva Primary Schools.*—The following programme of the work undertaken in the primary schools of the Canton of Geneva, is, of course, a mere sketch. Taking the years successively, it, however, will shew how carefully the scheme has been developed. In order to fairly estimate it, the equipment of the school, both as regards material and personnel, must be taken into account, as well as the fact that the physical or hygienic conditions are equally excellent. Everything in a Swiss school is conducive to obtaining the best results.

PROGRAMME OF INSTRUCTION IN PRIMARY SCHOOLS.

First Year.—Children 7 to 8 years.

Mother-tongue.—Nine hours a week.

Object-lessons.—Familiar discourses upon subjects taken from the child's surroundings. The human body. Dress. Foods. Houses and furniture. Class-room and its furniture. The street. The air. Water. Animals.

Moral Precepts.—Elementary notions of hygiene. Cleanliness.

Reading and Recitation.—Exercises in articulation. Reading very simple passages. Study of little poems.

Grammar.—Remarks made during the reading upon the nature of different words (verb, substantive, pronoun, adjective); upon the singular and plural, upon masculine and feminine, upon the commonest verbal forms. Present of the indicative of the verbs "to have" and "to be," and some much used verbs of the first conjugation. Oral and written exercises in conjugation by means of very simple short phrases. Plural of names and of qualificatives. Dictation of very short phrases. Short exercises of redaction—given one or two terms of a statement to complete it. Given an idea to construct a statement in which it shall be expressed.

Orthography.—Study of ten words a week taken from the reading, or from object-lessons.

Arithmetic (five lessons of half an hour.)—Intuitive reckoning—Additions and multiplications, where the total or the product does not go beyond 20. Subtractions and divisions where the minuend or dividend does not exceed the same number. Subdivision of a whole in halves, quarters, eighths, thirds.

Oral Reckoning.—Similar exercises as in the intuitive reckoning. Little problems upon the four operations within the limit of the above numbers. Making of problems by the pupils themselves.

Written Calculation.—Numeration as far as 500—Addition of numbers of two digits, the total not to attain to 500 Subtraction of numbers of two digits. Problems combining addition and subtraction. Numeration as far as 1,000: 3-figure additions the sum not exceeding 1,000.

Preliminary

Preliminary Ideas on the Metric System.—Oral or written intuitive exercises on the metre and decimetre, the franc and centime, the kilogram and hectogram, the litre and decilitre.

Writing (three lessons of half-hour).—Methodical exercises in medium writing.

Drawing and Geometrical Ideas (six lessons of half-hour).—Study, by means of objects, of the fundamental abstract ideas used in drawing. Point. Horizontal line. Vertical line. Parallel lines. The simplest geometrical figures. The box of cubes (the sixth gift of the Froebel material) and the enveloping band will be used by preference in order to explain the division of a line into 2, 4, 8, 3, 6 parts. Drawing of common objects without indication of the relief. Drawing of leaves by oppositely joining the principal points determining their character. Simple decorative sketches (motifs). Exercises from memory. Compositions.

Singing (four lessons of half-hour).—Musical notation. Study by hearing (ear.) Little songs in unision. The gamut. Very simple exercises in intonation. Common time.

Gymnastics and Games (six hours).—Formation exercises. Free exercises standing. Step exercises standing. Marching with song. Skipping (saut à la cord), girls. Balancing-pole. Simple jumping. Games.

Manual Work (six hours).—*Girls.*—

Knitting.—Intuitive preparation for knitting. Wooden needles and wools. Strip of thirty stitches, plain and purl. Steel needles and cotton.

Sewing.—Use of thimble and needle (insist upon this point): Seaming, hemming, and turning. Marking-stitch upon a piece of canvas hemmed. Various designs for making letters.

Making-up.—Pocket handkerchief. Long pillow-case (bolster) with seams.

Boys.—Little exercises in folding, plaiting, weaving, and cutting out, and applying pieces of coloured paper so as to form geometrical designs.

Second Year.—Children from 8 to 9 years.

Mother-tongue.—Nine hours per week.

Object-lessons.—Familiar discourses upon the human body: The bones, the muscles, the five senses. Little counsels as to hygiene. Animals, plants, rocks, metals, metals which the child knows. Some ideas concerning the transformation of raw materials into manufactured materials. Foods, fabrics, woods, rocks, metals.

Reading and Recitation.—Pronunciation, liaisons, punctuation, reading and recitation of short pieces of prose and little poems.

Grammar.—Present imperfect, future, indefinite past, and pluperfect of the indicative of the auxiliaries, and of the verbs of the first conjugation. (The study of grammar and of syntax will be through the reading lessons.) Very short dictations, corrections in class upon the studied words, and the conjugation.

Orthography.—Study of ten words a week, selected from the reading or object-lessons.

Redaction.—Construction of statements by the aid of words and verbal forms already studied. Description of common objects, of animals, of plants, etc.

Arithmetic (three hours)—Intuitive calculation.—Following on the exercises of the previous year. Elementary notions of fractions.

Oral calculation (mental arithmetic).—Addition of several numbers where the total does not exceed 60. Subtractions. Multiplications where each factor does not exceed 10. Divisions where the dividend does not exceed 10. Various problems within the limits of these numbers.

Written calculation.—Multiplication of numbers of two figures or more in the multiplicand and one in the multiplier. Multiplication with two figures in the multiplier. Division without remainder, and with only one figure in the divisor, the dividend not to exceed 100. Various problems, but slightly complicated, and with small numbers. Exercises upon the weights and measures studied. Making of problems by the pupils.

Geography (three lessons of half-hour).—Conversations having reference to the neighbourhood of the school, the streets in the vicinity, the village, and the commune. Orientation of the school hall. Situation of the places or localities in the neighbourhood with regard to the school. Streams. Lakes. Hills and mountains.

Writing (three lessons of half-hour).—Methodical exercise in large, medium, and fine writing. Copy to be attended to with respect to corrections.

Drawing and Geometry (six lessons of half-hour).—Review of the area covered in the preceding year by means of an object that permits the master to present new ideas, in particular that of angles (the *book* is one of the objects most suitable to this study). Axis of symmetry explained by letters. Application of these new ideas to the drawing of leaves. Ornamentation of simple objects (in these exercises the pupils have to fill in the surfaces by hachures). Exercises from memory. Composition.

Singing (two hours).—Study, by ear, of little songs of one or two voices (parts). Exercises in intonation. Reading of little airs. Notes. Common time.

Gymnastics and Games (four hours).—Repetition and development of the exercises of the first year. Combined step exercises, standing.

Manual work (six hours).—For *girls.*—

Knitting.—Making of a strip of thirty stitches, plain and purl. Ribs, seams, and decreasings. End the strip by means of a small chain.

Sewing.—Revision of work taught in the first year. English top-sewing along the straight. Felling along the straight. Marking upon canvas (alphabet, numbers, name, year).

Exercises preparatory to making up. Hems of different breadths; hems on the cross.

Making up.—Small fichu of triangular shape. Square pillow-case fastened by means of tapes.

For *Boys*—Cutting out of paper and of pasteboard in the form of geometrical solids. Combinations in coloured wools upon canvas or upon paper.

Third Year.—Children of 9 to 10 years.

Mother-tongue (nine hours per week).

Object lessons—Man.—Description of man's body: bones, muscles, nerves. Organs of sense. Vital organs: brain, heart, lungs, stomach, spinal cord, liver, intestines. *Animals.*—Study of several types of mammals and of birds. Notions about the air, water, temperature, heating, lighting, etc. Hygienic advice.

Reading and recitation.—Pronunciation and intonation. Study and recitation of very simple pieces.

Grammar.—The noun, determinatives, qualificatives, gender, and number. Principal rules of agreement between the determinatives or qualificatives and the noun. Summary study of the statement and conjugation. Simple statement—verb, subject, attribute. Direct completion. Indirect completion of time, place, manner. Completion of words. Statements having several subjects or several completions. Elementary rules of punctuation. Orthographic dictation. Tenses, persons. Indicative, conditional, and imperative of the auxiliaries, and of verbs in *er*. Affirmative, negative, and interrogative forms. Rôle of the personal pronoun in the conjugation.

Orthography.—Study of ten words a week, selected from the reading, the object-lessons and the various other lessons given.

Redaction.—Reproductions, accounts, and oral and written résumés of very short recitations read and explained. Exercises of redaction upon a summary mode in class by the pupils. Little descriptions drawn from ordinary life, from natural history, etc.

Arithmetic (six lessons of half-hour).—Oral calculation. The first operation. Little practical problems with whole numbers less than 100. Calculations upon the subdivision of the franc, of the litre, and of the metre.

Written Calculation.—Multiplication with three numbers in the multiplier. Division with one, then with two numbers in the divisor.

Numeration.—Multiplications and divisions abridged by 10, 100, and 1,000. Additions and subtractions of ordinary fractions in the case where one of the denominators is able to be selected as the common denominator. Multiplication and division of a whole number of two figures by a fraction having unity as numerator.

Metric System.—Calculation with francs and centimes, addition and subtraction. Multiplication and division of francsand centimes by a whole number. Various calculations with pieces of money, weights and measures (exercises identical with those of oral calculation). Simple and practical problems comprising not more than three different operations. Resolution of problems, enunciated in writing. Composition of problems by pupils.

Geometry (four lessons of half-hour).—Drawing and explanation of triangle, square, and rectangle. Measurement of these two last figures.

Geography

Geography (four lessons of half-hour).—Reading of maps. Outline of the plan of the class-room of the parish (commune). Study of the plan of the town. Map of the canton of Geneva. Study of the mountains. Right and left banks of the lake and of the Rhône. Parishes, principal localities. Cultivations. Important industries. Ways and methods of communication. Outline of the map of the canton. Rapid review of the terrestrial globe. Summary of ideas as to the continents and oceans. The zones.

Writing (three lessons of half-hour).—Methodical exercises in large writing, medium, and fine. Copy attended to with respect to corrections, caligraphy and good distribution of work. Copy of small accounts.

Drawing (four hours).—Representation of simple objects without indicating the depth. (The master will remark upon the analogies that exist between these drawings and those of other forms, letters for examples. It will be profitable to shew that the simple forms are easily recalled from combinations of triangles and rectangles). Application to architectural forms (façades of buildings). Exercises in ornamentation: drawing of leaves, compound leaves. Exercises from memory. Composition. Attempts to draw with the pen.

Singing (three lessons of half-hour).—Study of very simple songs. Exercises of intonation. Reading of little airs. Time (notes, with prolongations and rests).

Gymnastics (three hours). *Girls and Boys.*—Repetition and development of the exercises of the second year. Combined free exercises. Exercises with poles, standing. Traction apparatus. Balancing pole. (*Girls only*), balancing pole. (*Boys only*), simple jumping, height and length. Preparatory exercises for the pole. Double ladders, movable. Traction apparatus. Giant stride.

Manual Work (four hours). *Girls.*—

Knitting.—Stocking of sixty stitches (including decreasing at the edges 0·15 metres). Study of the heel, including decreasing at the ankle. (Repeat the heel several times.) Knitting a round with ribs, one plain one purl, applied to a pair of woollen cuffs.

Sewing.—Go over the programme of first and second year. English top sewing on the cross. Felling on the cross. Back-stitching on the straight applied to top sewing.

Exercises Preparatory for Making-up.—Curved hems. Application of sewing on the cross and of the hem, to a little sleeve, preparatory to making a chemise.

Mending Stockings.—Plain stitch; hole filled in by plain stitch.

Making-up.—Feeder. Chemise.

Boys.—Construction of objects of paste-board covered with coloured paper, or of coloured designs. Little works with iron wire. Lattices. Geometrical solids.

Fourth Year.—Children of 10 *to* 11 *years.*

Mother-tongue.—Boys, 11 hours; girls, 10 hours.

Object lessons.—Man—ideas as to digestion; as to movement. Hygienic counsels. *Animals*—study of several selected types characteristic of the different groups of mammals and of birds. *Plants*—studies with several selected types of the principal organs of the plant. *The three states of body.*

Reading and Recitation.—Expressive reading with reproduction of narrative. Study and recitation of several pieces of prose or poetry.

Grammar.—The pronoun. Verbs in *ir* and in *re*, indicative, conditional, and imperative. Complete conjugation of regular verbs. Conjugation in the pronominal voice. General rules for the present and past participles. Applications in simple cases. Orthographic dictation, immediate corrections, as far as possible under the eyes of the pupil. Use of punctuation. Study of phrase.

Orthography.—Study of fifteen words a week, selected from the pieces read, and the object lessons. Formation of families of words by means of those which have already been studied.

Redaction.—Development of the programme of the third year. Little narratives; descriptions and letters upon subjects, suitable to the ages of the pupils. Biographies, historic readings, and recitations.

Arithmetic.—4 hours. *Oral calculation.* Exercises as in the preceding years. Resolution of problems where the statement is enunciated in writing.

Written Calculation.—Decimal fractions; numeration of decimal fractions explained by means of subdivisions of common metric measures. The four operations. Metric system. Calculation of practical problems upon weights, measures of length, of surface, and of capacity. Simplication of ordinary fractions in the easiest cases. Addition and substraction of ordinary fractions (following those of third year). Multiplication and division of a whole number of two figures, by a *fraction*, and inversely (the denominator not exceeding 10). Intuitive demonstration and reasoning. Transformation into decimal fractions of ordinary fractions, having unity for numerators and a submultiple of 100 for denominator (1/5, 1/10, 1/20, 1/25, 1/50). Making up of problems by the pupils. Invoices and small accounts.

Geometry (2 hours).—Review and development of the programme of the third year. Triangles, quadrilaterals. Exact construction of those figures on the blackboard by means of square and compass. Measurement of these figures.

Geography (2 hours).—Canton of Geneva. Review and development of programme of third year. Ideas upon the physical and political geography of Switzerland. Generalities concerning Europe. Great mountain chains. Great rivers. Principal seas. Natural products of the different regions. Summary of ideas concerning the orientation and the movement of the earth. Pole, equator, tropics, and polar circles. Sketches and traces of maps.

Writing (2 lessons of half-hour).—Methodical exercises. Copy from models. Cursive writing. Abstract of accounts.

Drawing (3 hours).—Plan of the room. Use of scale of reduction. Vertical and oblique planes. Reconstruction of some simple bodies through combining a certain number of sections. First attempts at drawing in three dimensions. Exercises from memory. Composition.

Singing (1 hour).—Study of easy songs for one or two voices. Exercises of intonation. Reading of airs. Time (common time).

Gymnastics (3 hours).—*Boys and girls.—See* third year. Running. Exercises with poles, standing and marching. *Boys only.*—Balancing pole. Exercises on the pole and rings. Horizontal ladder.

Manual work (4 hours).—*Girls,*—

Knitting.—Complete sock. Special study of finishing off.

Sewing.—Go over programme of first, second, and third year (upon a single piece). Back stitching on the straight. Back stitching on the cross. Piece to be put in on white woollen material. Piece into a piece of print. Preparation for darning upon canvas (drawing the threads of the warp, or those of the woof). Preparatory exercises for making up:—1, a little bodice; 2, a princess-shaped apron. (For the preparation of these exercises, see the detailed programme). *Mending stockings.*—Hole, from edges. *Making up.*—Babies' bodices (according to the first model of the "Manual," figure 9, or with shoulder straps). Apron, princess-shape.

Boys (3 hours).—Construction in paste-board of sections of the simplest bodies; putting together the sections. Work with wire.

Fifth Year.—Children of 11 *to* 12 *years.*

Mother-tongue.—

Object Lessons (2 hours).—Notions of natural history; development from the programme of the fourth year. Hygienic counsels. Information about the principal industries—bakery, pastry-making, distillery, etc. Clothing industry—spinning and weaving. Making-up of clothes. Making-up of footwear, etc. Building industry—materials employed in the different trades which are connected therewith. Familiar discourses on the subjects of domestic economy.

Reading and Recitation (2 hours).—Expressive reading. Elocutionary and recitation exercises.

Grammar (1 hour).—The most used irregular verbs. Transformation of the active into the passive voice, and reciprocally. Exercises upon the reflective verbs and the impersonal verbs. Principal orthographic irregularities. Exercises in analysis. Rôle of different species of words in a statement. Subordinate statements in simple cases. Punctuation. Short dictations, immediately corrected, as far as possible under the eyes of the pupils.

Redaction (2 hours).—Exercises in redaction with or without given plan. Reproductions, résumés, and written reports of recitations, readings, or lessons on geography, history, natural history, agriculture or industry. Subjects from the imagination. Various letters.

Orthography

Orthography (2 hours).—Study of fifteen words a week selected in the object lessons. Principal prefixes and suffixes, their signification. Families of words. Homonyms and synonyms.

Arithmetic (3 hours).—Oral calculation. Development of the fourth year's programme.

Written Calculation.—Ordinary fractions—the four operations in all the cases. Mixed numbers. Transformation of ordinary to decimal fractions and reciprocally. Complex numbers in their ordinary applications. Use of aliquot parts in oral calculation and in multiplication of a whole number by an ordinary fraction or by a complex number. Measures of volume. Rule of three by reduction to unity. Application of the rule of three to the resolution of ordinary problems. Composition of problems by the pupils. Invoices and the establishment of various accounts (in the writing lessons).

Geometry (2 hours).—*First semester* (half-year): Review of the fourth year's programme. Tracing and measuring of regular polygons, irregular polygons and the circle. Reduction of figures. Cube, parallelepiped, their surface and their volume. *Second semester*: Prism, cylinder, their surface. For boys, practical exercises—measurement of little areas on the ground. Making of sketches and fair copy (school-hall, corridor, yard).

Geography (2 hours).—Review of geography of Switzerland with development. States of Europe and their capitals. Products, industry, commerce, great lines of railroad. Generalities as to Asia, Africa, America, and Oceania. General ideas regarding the distribution of heat on the surface of the globe. Sketches and drawings of maps.

History[1] (1½ hours).—Stories of Swiss history: First recitation—The first inhabitants of Helvetia. Second recitation—Roman domination and Julius Cæsar; Germanic invasion. Third recitation—Rudolph of Hapsburg; counts, bishops, monastries, towns; the first states; Alliance of 1291: Albert of Austria; Vow of Grütli. Fourth recitation—Beginnings of Confederation; Battle of Morgarten. Fifth recitation—Confederation of the eight cantons; Battles of Sempach and of Naefels. Sixth recitation—Conquest of Aargau; war of Zurich; Battle of St. Jacques on the Birs. Seventh recitation—Wars of Burgundy; Battle of Grandson, of Merat, and of Nancy; Nicholas of Flüe (Brother Klaus); Entry of Freiburg and Solothurn into the Confederation. Eighth recitation—Confederation of thirteen cantons; the allied and the subject countries; mercenary service. Ninth recitation—The Reformation. Tenth recitation—Aperçu of the political, economic, and social state of Switzerland in the 17th and in the 18th century. Eleventh recitation—The French Revolution; invasion of Switzerland; Helvetian Republic; the nineteen cantons. Twelfth recitation—The Restoration; Confederation of the twenty-two cantons. Thirteenth recitation—War of Sonderbund; Constitution of 1848.

German (3 hours).—Reading. The ten (10) first lessons of Lescaze Grammar. Oral exercises with simple phrases.

Writing (1 hour).—Cursive writing, round. Model of accounts, of invoices, and of various instruments.

Drawing (girls 2 hours, boys 3 hours) —Review. Bodies of rotation, their characters explained by plane sections; their construction from sketches of a side view of the objects. Drawing of objects in free perspective. Exercises from memory. Composition.

Singing (1 hour).—Study of songs for two voices. Exercises of intonation and of rhythmic reading. Time (triple). Sharps and flats. Explanation of the principal signs of the notation on the stave. Stave. Keys, sol and fa. Sharp, flat, natural. Signs of length of notes, semibreve, crochet, rest. The commonest measures.

Gymnastics (1½ hours).—*Girls and Boys*—Repetition and development of the programme of the fourth year. Combined marches, with song. Exercises with dumb-bells standing in position. Horizontal ladder. *Boys only*—Jumping. Exercises on the pole and with rings. Vaulting-pole.

Manual work (5 hours).—Girls.—

Knitting.—A stocking. (Insist upon the manner of commencing a stocking.) Marking the initials.

Sewing—Going over the things taught in the preceding years (upon a single piece). Hemming applied to a dress pocket. Fell, on a piece. Button-hole. Loop for a button. Loop for hook. Gathering. Stroking the gathering. Putting on a band. Simple darning upon coarse canvas.

Exercises Preparatory to Making Up.—Review of the exercises indicated in the programme of third and fourth years. Setting false hems on the straight and on the cross.

Mending Stockings.—Review of past work. Hole in the seam.

Cutting Out.—Bodice, chemise, knickerbockers, bib, feeder. Making patterns. Cutting and putting together.

Making Up (a selected article from among the things cut out).—Boys (3 hours)—Sketch of objects for making, and construction of the object from the sketch. Notions about the commonest tools. Study of the principal tools used in wood-work. Planing, sawing of wood. Simple piecing together. Boxes with or without nails. Construction from a number of pieces of cardboard and of wood. Construction of objects from side elevations.

Sixth Year.—Children from 12 to 13 years.

Mother-tongue.—Boys, 9 hours; Girls, 8 hours.

Object Lessons (2 hours).—Review and extension of the programme traversed in the preceding year. *Man*—Notions upon digestion, circulation, respiration, the nervous system, the sense organs; practical hygienic advice; pernicious effects of alcohol, tobacco, etc. Useful and noxious animals. Vegetables. Essential parts of the plant. Principal groups. Alimentary plants. Conversation about pumps, fountains, jets of water, barometer, thermometer, hydraulic machines, steam-engines, electric machines, cells, lightning-conductors, telegraph, telephone, etc. Information concerning the principal industries. Industries of precision, mechanics, horology. Industries for luxuries. Gold and silver smithing, jewellery, etc. Printing. Photography.

Reading and Recitation (2 hours).—Expressive reading. Narratives. Exercises in elocution and in recitation.

Grammar (2 hours).—Exercises in agreement of moods and tenses. Short dictation, immediately corrected as far as possible under the pupil's eyes.

Orthography (4 hours).—Study of fifteen words per week, chosen from the object-lessons. Homonyms, synonyms. Families of words.

Redaction (2 hours).—Composition on various subjects with or without given plan. Résumé of subjects relating it to the year's programme. Development of a subject succinctly treated. Redaction of a subject from notes taken during a reading or a lesson. General classification of ideas. Principal and secondary ideas in a composition. Literal and figurative language.

Domestic Economy (Girls, 1 hour).—Conversations on the different products used in housekeeping; their production; the industry and commerce which arises from them. Colonial commodities. Vegetables, fruits, foods, furniture, line, clothing, things used in washing, lighting, and heating. Qualities of a household of the future—order, cleanliness, economy, foresight, love of work. Some popular conversations upon keeping a house well. Services which the young woman should render in her family.

Arithmetic (3 hours).—*Girls*—Review and development of the fifth year's programme. Numerous oral exercises and problems relating to agriculture, industry, or commerce. Calculations of volumes. Rules of interest, discount, and of mixed cases, all simple. Abridged methods. *Boys*—Invoices and various accounts. Extraction of square root.

Geometry (Boys, 2 hours).—*First semester*: Review and development of the programme of the fifth year. Surface and volume of solids—parallelepiped, prism, cylinder, pyramid, and cone. Development of the surfaces. Construction of these developments. Practical applications. *Second semester*: Truncated solids cut by a plane parallel to the base. Numerous practical applications (heap of sand, trunk of tree, etc.). Surface and volume of a sphere. Practical and abridged methods, etc., the calculation of surfaces and volumes. Girls—Application of the fifth year to shape and design.

Geography (2 hours).—Special study of Europe, with indication of the best known of European possessions. Principal products. The most important places of commerce and ports. The United States, principally from the point of view of their products and their commercial relations with Europe. General review of geography. Sketches and drawings of maps.

History

[1] In the schools in which the fifth and sixth year are united Swiss history alternates with Genevan.

History (1½ hours).—First recitation: Geneva, as far as the end of the 15th century. The Bishops, the House of Savoy. The Council of Geneva. Code of the Franchises of Adhémar Fabri. Second recitation: Struggles of Geneva against the House of Savoy. Philibert Berthelier, Lévrier, Besançon Hugues. Co-citizenship of Geneva with Freiburg and Berne. Third recitation: The Reformation. Fourth recitation: New struggles against the House of Savoy. The Escalade. Fifth recitation: Geneva to the 17th and 18th centuries. Refugees. Sixth recitation: Revolutionary period. Reunion of Geneva with France. Seventh recitation: Deliverance of Geneva, which becomes a Swiss Canton. Eighth recitation: Revolution of 1846. Principal occurrences as far as 1871.

German (3 hours).—End of Lescaze's Grammar: Oral exercises with simple phrases. Ordinary vocabulary.

Writing (1 hour).—Exercises in cursive writing, round. Models of accounts of invoices and of various instruments.

Drawing (Girls, 2 hours; boys, 3 hours).—Drawing of solids and objects from sections and side elevations. Development of their surfaces. Ornamentation of these surfaces. Drawing of ornaments from models with indications of the whole which they decorate. Notions of normal perspective. Exercises from memory. Composition.

Singing (1 hour).—Review and development of the fifth year's programme. Modes. Explanation of the principal signs of notation on the stave (in view of transcription). Stave. Supplementary lines. Clefs, sol and fa (treble and base). Sharps, flats, naturals. Armure. Tonic. Signs of duration—semibreve, minim, crotchet, quaver, semiquaver, pause, rest, minim rest, crotchet rest, simple and compound time, most frequently used. Signs of expression. Movement (temps).

Gymnastics (1½ hours). *Girls.*—See the programme of the fifth year. Balancing pole, fixed and movable. *Boys.*—See the fifth year programme. Combined exercises, standing and marching. Tactical exercises. Jumping in company. Giant-step with leap.

Manual Work (6 hours). *Girls.*—

Knitting and Crochet.—Several samples of knitting and of crochet. Various applications—bodices for infants, booties, etc.

Sewing.—On a single piece the different stitches and seams in the programme of the 1st, 2nd, 3rd, 4th, 5th, and 6th years. Hem-stitching. Going over sewing by top sewing and felling, rejoining, small pleats, hems, fancy stitches; application of these various stitches to marking. Edging the sides of the sampler. Bottom of apron-sleeve to the wristband. Wristband indicated in the manual (without the stitching round). Simple picking-out on canvas. Simple darning on worn canvas. Exercises preparatory to making-up. 1. For chemise. Front of the chemise with band. Make a slit in the middle. Finish off the left side with a false hem. On the right side a flap crossing over the false hem. One sleeve of the chemise cut according to the shape of the sleeve. 2. For apron (see the programme of the fourth year). 3. For the knickers—bottom of the leg of knickers with band.

Mending Stockings.—Going over mending holes with ribs. Hole with decreasings and seam. Piece put on to the stocking.

Cutting-out.—1. Chemise without sleeve (buttoned or not, on the shoulder). 2. Chemise with sleeves. 3. Apron, princess-shape. 4. Patch-work apron. Drawers for little girl. Drawing patterns. Cutting and joining.

Making-up.—Anything selected from among the cutting-out work. *Boys* (3 hours). Development of the programme of the fifth year.

Text Books.

Second Year.—First series of problems. Duchamp.

Third Year.—Elementary Course in the Mother-tongue. M. Dussaud (1st part) with supplementary exercises. Manual of Geography of MM. Rosier et Dussaud. Third series of problems. Duchamp.

Fourth Year.—Elementary Course of the Mother-tongue by M. Dussaud (1st part) with complementary exercises. Atlas Manual of M. Duchamp. Small map of Switzerland. Fourth series of problems. Duchamp.

Fifth Year.—Elementary Course of the Mother-tongue by M. Dussaud (2nd part). Manual Atlas of M. Rosier. Problem Duchamp. Atlas Isleib.

Sixth Year.—Elementary Course of the Mother-tongue by M. Duchamp (2nd part). German Manual of M. Lescaze. Fifth series of problems Duchamp. Atlas Isleib. The present programme is approved for the school year.

7. *Object-lessons of the First Two Years in Genevese Primary Schools.*—The same systematic character, which is seen in the programme above, is maintained throughout. The object-lessons for the first two years have a parallelism similar to that seen in the infant-school programme. In the following table their classification according to the seasons of the year is shewn. It will be seen that they cover a very wide range, and have for the children of the country considerable local interest, and afford splendid opportunity for promoting the so-called Nature Study.

PROGRAMME OF OBJECT-LESSONS FOR THE FIRST AND SECOND YEAR.

CLASSIFICATION OF SUBJECTS ACCORDING TO THE SEASONS.

Firs Year.	Second Year.
End of Summer—Autumn.	*End of Summer—Autumn.*
School furniture.	A special piece of furniture in the class-room.
Tools of the scholar (pen, pencil, rule, school-box).	Sponge, gum, chalk, book, and copy-book. Notions on paper-making.
Special subjects for girls classes (sewing).	Cotton.
For boys' classes (manual work).	School knapsack.
Farina. Bread.	Cereals: Rice, oats, mill.
Threshing machines.	Agricultural instruments.
Pip-fruits, stone-fruits, raisins, nuts.	Fruits: Acorn, chestnuts, horse-chestnuts, nuts, hazelnuts.
	Vintage: Vine-year.
	Oils: Nut, linseed, olive, colza.
Autumn flowers: Dahlia, colchicum, hedge-herries.	Autumn Flowers: Chrysanthemum, aster, clematis (in seed
Vegetables: Cabbage, carrot, celery, radish.	Vegetables preserved for winter, dried vegetables.
Carnivora: Dog and cat. Herbivora: Non-ruminant, horse; ruminant, ox, cow. Aftermath: Animals in the field. Rodents: Mouse. Sparrow, duck, poultry-yard in general.	Wolf, tiger, lion; ass, mule, camel, chamois, hare, rabbit; thrush, shepherd-girl (?); swan, goose; pigeon-house pigeon, turtle-dove, ruff.
Fish: Trout, fera, pike.	Preserved fish: Herring, sardines, mackerel.
Molluscs: The edible and ordinary snail.	Shellfish: Oyster, mother-of-pearl.
Reptiles: Snake, lizard.	Frog, toad, tortoise.
Preliminary notions upon the orientation of objects in the class-room, in respect to the position of the child (in front of, behind, left, right).	The four cardinal points. Orientation of the school play-ground.
Rain, fogs, mists.	Rain, fogs, mists (more developed than the first year).
Husbandry: Work in the field; a resume concerning autumn (21st September).	Harvest of potatoes, seeds, wheat.
The school, its situation; names of streets which adjoin it.	Aspect of nature: 21st December, the days and nights.
	The school, its situation, names of streets which adjoin it. The development greater than in the first year.
Hygiene, bathing, cleanliness.	Hygiene and aeration.
	Winter.

Winter.

Heating : Coke, wood, matches (danger).

Lighting : Candles, lamp.
Clothes : Wool, sheep, goat.

Furs : Rabbit, hare, fox.
Down : Coverlet.
Shoes : Hog.

Snow and ice.
Birds to be protected in winter.
11th December : Story of the Escalade.
21st December : Division of time according to the seasons.
Firs.
1st January : Division of time into months, days of the week. The hours—clocks and watches.
Toy, orange.
The holy days.
Ethical chats (chats on morals).

Cotton : Choice of cotton dress, apron, etc.

Preliminary notions on the human body.

The members : Care to give to the feet and hands.
Means of locomotion.
The dwelling-house : A room.
Our walks.

Spring.

The awakening of nature (21st March).
Generalities about a plant : Root, stem, leaves.

Spring flowers : Primrose, violets, anemones, squill, lily of the valley, lilac. Spring vegetables ; cherry.

The swallow.

Useful insects : The bee, the silkworm.
The goat and the kid.
The fowl (Easter eggs).
Coffee.
Melting of the snow.

Streams of water.

Summer.

The pleasures of summer (21st June) : Hay, hay-time, milk and cream, wheat.
The Field : Summer flowers : Eglantine, rose, pinks.

Summer fruits : gooseberries, black-currants, raspberries.
Syrups
Walking and running.
Promotions.
Chats concerning the Vacation : Special recommendations from the point of view of observation.

Winter.

Modes of heating : The furnace, fireplace, and combustible (gas).
Means of lighting : lamps, petroleum (danger), gas.
The same subjects as the first year—Wool-working, dyeing, spinning, weaving.
Furs : Otter and beaver.
Hair : Mattress, cushion.
Leather :—Animals which furnish it : Cattle, hog, bristles, soft brushes.
Snow and ice, more developed than in the first year.
Protection of birds in winter.
Ancient and modern Geneva. The Escalade turkey and pot.
21st December (the days and nights) : Pleasures of winter.
The conifers.
Division of time : The quarter, half-year, week, day. Division of the day : Hour, minute, second, dial, watch.

The holy days.
Ethical chats upon the exercise of generosity to the sick, the lonely, and the aged.
Carded and threaded cotton ; choice of several cotton materials.
The human body : Notions a little more developed than in the first year. The senses.
Hygiene : Care to be given to the eyes, ears, teeth and hair.
Steam : Locomotive, steamship.
House in town : Cellars, rooms, lofts. The farm : Parts which compose it. Materials of construction : Stone, brick, wood, iron, glasss. Building tradesmen : Carpenter, joiner, etc. Some public monuments

Spring.

The 21st March (the days and nights).
Generalities concerning trees : Fruit trees, ornamental trees, shelter trees.
Spring flowers : Snowdrop, corydalis, cowslip, jonquil, narcissus, ranunculus, buds and flowers of a fruit-tree, potato-flowers, strawberries.
Migratory birds, graminivorous birds, insectivorous birds, birds of prey.
Injurious insects : The may-bug, the caterpillar.
The bat, the mole, hedge-hog.
Hen and chickens.
Chocolate, sugar, tea.
Melting of the snow ; various streams of water ; distinction of the banks, source, and mouth ; lake and sea. First ideas of relief designed to make intelligible the slope of streams, mountains, hills and plains.
Our streams.

Summer.

The aspect of nature in summer ; the 21st June, days and nights.
Flowers of a meadow : Sage, scabious, marguerite, sanfoin, bugle, gramineous plants, catch-fly. Pasturage : cheese-houses, butter and cheese. Harvest-time : Cornflowers, poppies, blue-bottle, rose-campion. Summer flowers : One or two cultivated flowers among the best known.
Summer fruits : Apricots, plums, peaches, bilberries.
Preserves.
Walking and running.
Promotions.
Chats upon the Vacations : Special recommendations from the point of view of observation.

8. *Programme of Studies for the primary schools of the Commune of Lausanne, Canton Vaud, Switzerland.*—Although Vaud adjoins Geneva, the educational scheme of each has its own characteristics. Switzerland has cantonal independence as far as the details of the educational systems are concerned.[1] For this reason the programme of Vaud is given also, so that a comparison may be instituted.

Intentionally, this programme has been drafted out on a different plan from that of Geneva. In doing this the object was to shew the progression of study in each subject, which does not so distinctly appear in the former programme. The intense rivalry between the various Swiss cantons in the matter of their educational systems, no doubt has had much to do with their strenuous endeavour to reach ideal perfection. The Swiss are proud, and rightly so, of their splendid schools ; and the endeavour to have them as excellent from the standpoint of pædagogy, as from that of hygiene, has made their contribution to the development of an ideal, and at the same time a practical, curriculum of very high pædagogic value.

The following is the programme for primary schools :—

The plan of studies for the primary schools of the canton of Vaud divides the period of study into three parts. The first cycle of studies, viz , the *lower grade*, comprises two school-years ; the second cycle, the *intermediate grade*, three years ; and the third cycle, the *higher grade*, three years. This division is maintained in the "foreign" schools of the Commune.

For the schools of Lausanne the number of grades is seven. The programme of each of these grades includes the work of one school-year. The

[1] M. J. Clerc, in his "L école populaire Suisse," says :—"Notre patrie, en effet, malgré l'unité politique sous l'aspect de laquelle elle se présente à l'étranger, est en réalité fractionnée en vingt-cinq républiques, toutes autonomes, toutes indépendantes les unes des autres, dans les limites du cadre fédéral, et jalouses de la prérogative, à laquelle on a essayé de toucher rarement, et jamais impunément d'organiser comme elles l'entendent l'enseignement populaire sur leur territoire restreint."

The classes of the 7th and 6th grades exactly correspond to the *lower grade* in the plan of cantonal studies; those of the 5th and 4th grades to the *intermediate grade;* those of the 2nd and 1st grades to the *higher grade;* those of the 3rd grade do not correspond to one of the divisions in the cantonal plan, their programme including the matters contained in those of the *intermediate and higher grades.*

The classes of the 7th grade receive children commencing their *primary* studies—that is, those who have completed their seventh year in the current school-year. This school-year commences in the month of April.

The pupils who obtain each year regular promotion are thus able to complete the whole course of their primary studies by the age of 14; they have not at that age, however, the right of absolute freedom from all schools, for the law requires that they shall remain at school till 15. These pupils must therefore go through the course of the highest class again, or demand admission into establishments of secondary instruction.

While there does not exist an exact correlation between the primary programme and the programmes of the secondary schools, the passing can nevertheless be made without loss of time, but only on the express condition that the pupils have followed regularly the course of instruction in the German language in the higher classes of the primary schools.

In Lausanne there is in every class religious instruction of an historical character as follows, starting from youngest class :—

RELIGION.

7th Class.—The creation, treated in a very summary manner. Paradise. The Fall. Cain and Abel. The Deluge. The patriarchs. Abraham leaves his country. Abraham and Lot. Promise of God to Abraham. Isaac. Journey of Eliezer,

6th Class.—Esau and Jacob. Flight of Jacob. Jacob and Laban. Return of Jacob. Joseph and his brothers. Joseph in Egypt. Joseph's brothers go to Egypt. Jacob also.

5th Class.—People of Israel in Egypt. Moses; his birth, youth, and flight. Moses before Pharaoh. Departure from Egypt. Israel in the desert. Giving of the Law. The calf of gold. The spies. Death of Moses. Joshua. Conquest of Canaan. Gideon. Samson. Ruth. Eli and Samuel.

4th Class.—The kings—Saul, David, Solomon. Division of the kingdom. The prophets' captivity.

3rd Class.—Birth of Jesus. Jesus at the age of 12. John the Baptist. Baptism of Jesus. The first disciples. Marriage of Cana. Jesus and the Samaritan woman. Jesus in the synagogue of Nazareth. Healing of the paralytic; of the infirm at Bethesda. The centurion of Capernaum. The widow's son, of Nain. The daughter of Jaïrus. Jesus appeases the tempest. Multiplication of the loaves and fishes. The ten lepers. Jesus blesses the children.

2nd Class.—Parables of the sower; of the wheat and tares. Sermon on the Mount (for reading), and the Lord's Prayer. Jesus and the woman of Canaan. Parable of the pitiless servant. The man born blind. Parables of the Good Samaritan, of the rich man and Lazarus, of the prodigal child, of the Pharisee and the publican. Martha and Mary. Resurrection of Lazarus. Parable of the husbandman, of the ten virgins, and of the talents. The tribute to Cæsar. The widow's mite. Jesus at Bethany.

1st Class.—Entry of Jesus into Jerusalem. Betrayal by Judas. Story of the passion. Resurrection and ascension of Jesus. Outpouring of the Holy Spirit. Ananias and Sapphira. The apostles before the Sanhedrin. The eunuch. Conversion of Cornelius. The stoning of Stephen. Conversion of Saul; his return to Jerusalem. Principal journeys of the apostle Paul.

FRENCH, *i.e.*, MOTHER-TONGUE—ELOCUTION AND REDACTION.

7th Class.—Short conversations, whether accounts of object lessons, or local geography. Real stories, or fictions, relative to the object lessons. Memorising the maxims deduced from the lessons.

6th Class.—Continuation of the conversations, upon the objects treated of in the programme of natural history and local geography. Selected recitations. Ethical stories. Biographies adapted to the calibre of the pupils.

5th Class.—Written and oral accounts of subjects read or learnt. Reproduction of the plan, and preparation with the point of view both of composition and orthography. Narratives and oral descriptions corresponding to the subjects in the programme.

4th Class.—Continuation of the exercises of 5th Class. Short redactions, prepared together verbally. Development of a subject according to a plan prepared with the pupils in advance. Historical, biographical, geographical, and natural-history subjects.

3rd Class.—Continuation of exercises in redaction, oral and written. Familiar letters. Moral subjects illustrated by anecdote or recitation.

2nd Class.—Oral and written accounts. Free reproduction of subjects read about, or exhibited, in the class. Redaction of subjects prepared with the pupils, summarised for development. Free subjects. Various letters.

1st Class.—Imitation of subjects read about or analysed. Historical, biographical, geographical, or scientific accounts. Accounts from personal observation. Accounts of an excursion, or of a visit to a workshop, museum, etc. Development of a proverb, or of a maxim. Business letters and various other kinds of letters. Free subjects.

MOTHER-TONGUE—READING.

7th Class.—Preparatory study of the phonetic elements of language. Sounds and articulations. Decomposition of phrases, of words, of syllables, into phonetic elements. Study of an illustrated spelling-book, based upon the phonetic method. Writing of words read. Typographical characters. Recitation of short and easy poems.

Class.—Reading and résumé. Indications of the principal ideas. Reflections and ethical deductions. Study of new terms from the standpoint of signification and orthography. Recitation of easy pieces.

5th Class.—Choice of pieces having relation to other lessons. Elementary study of content and form. Accounts, according to the natural divisions of the subject. Explanation of terms not well-known. Scheme of a piece. Recitation of selected pieces (prose or verse).

4th Class.—Subjects in relation with other lessons. Analysis of content, enunciation of main facts, comparison. Moral precepts and practical applications.

3rd Class.—Division of a chapter into parts, corresponding to the principal ideas. Study of particular expressions. Comparison of passages in respect of their fundamental relations. Recitation of selected pieces.

2nd Class.—Selection of pieces in agreement with the general matters of the annual programme. Analysis and scheme of a piece. Remarks upon ground-work and form. Study of particular expressions. Use of a dictionary. Recitation of pieces, in prose or in verse.

1st Class.—Study and reading of various pieces in relation to other branches. Elementary literary remarks. Analytic study of selected pieces. Recitation of short fragments in prose or in verse.

MOTHER-TONGUE—VOCABULARY AND ORTHOGRAPHY.

7th Class.—Writing from dictation of words read from the blackboard, and in the spelling-book. Words classed by order of subjects, according to their species, and drawn always from the object-lessons or reading. Use of the capital; of the full stop; and of orthographic accents. Distinction of the singular and plural of nouns, by the change of the article and the addition of an 's.' Names of persons, animals, and things. Words denoting quality and action.

6th Class.—Words drawn from lessons, and grouped according to their species. Short and simple dictation applying appropriately to the object lessons, and the reading lessons. Finding the noun, the qualificative, the verb, the determinative, and the pronoun in the statement or proposition. Agreement of the qualificative. Agreement of the verb with its subject in the 3rd person.

5th Class.—Words drawn from the reading subjects, or the object-lessons, and grouped in order of subject-matter Dictation, from the passage previously read and analysed.

4th Class.—Continuation of the preceding exercises. Classification of words and of locutions according to their grammatical species, their signification, their use. Simple exercises on derivation. Dictations from applications.

3rd Class.—Vocabulary drawn from the reading lessons, the lessons of natural history, of geography or ordinary history. Composition and decomposition of words. Radicles, prefixes, and suffixes most used. Dictations from applications.

2nd Class.—Vocabulary of special terms, and of expressions recently employed in the lessons. Exercises of ordinary etymology. Prefixes and suffixes. Synonyms and contraries. Proper or literal, and figurative, sense. Various dictations having some application to the acquired notions.

1st Class.—Written recapitulation of the words and new expressions learnt in the lessons. Exercises in definition and synonymy. Families of words. Dictation varied in relation to the ground work and form of the subjects of instruction.

Mother-tongue (Grammar).

7th and 6th Class.—None.

5th Class.—The simple statement. Its essential terms. Elementary study of variable words. Common and proper nouns. Determinatives and qualificatives without distinction of species. Formation of the feminine and plural of qualificatives (principal cases). Principal rules of agreement of the qualificative and the verb. Conjugation of the verbs "to have" and "to be," and of verbs in "*er*" in the simple tenses of the indicative, of the conditional, and of the imperative. Grammatical persons. Replacement of the noun (subject or completion) by a pronoun. Numerous oral and written grammatical exercises, by way of application of the subject matter of instruction.

4th Class.—Continuation of the study of a statement. Distinction of various species of completion; direct, indirect, and circumstantial. The preposition and the adverb. Positive, negative, and interrogative form of a statement. Inversion. Principal species of pronouns:—Le, la, les, ce and se. Conjugation by statement of regular verbs in all the tenses of the indicative, imperative, and conditional moods. Employment of the comma in the statement.

3rd Class.—Complete study of the simple statement. The statement with compound terms. The conjunctions *et* and *ni*. Punctuation. Different species of determinatives and of pronouns. Oral and written conjugation of verbs in every tense of the indicative, imperative and conditional moods. Agreement of the past participle conjugated with "to have" and "to be." General rules.

2nd Class.—The phrase of two statements (co-ordinated and subordinated). The subjunctive mood. The subordinate completive, subjunctive and determinative. Punctuation. The conjunction and conjunctive pronoun. The active, passive, and pronominal forms of the verb. Conjugation of phrases of two statemtnts. Agreement of the past participle conjugated with "to have." (Study more complete.) Compound nouns and proper nouns. Nu, demi, feu, vingt, cent, mille. Oral exercises in logical and grammatical analysis. Use of a manual of grammar.

1st Class.—Study of circumstantial subordinates. Contracted forms. Remarks upon *quelque*, *même*, *tout*. Oral and written practical exercises. Conjugation of the commonest irregular verbs. Agreement of the verb with subjects of different persons, and with a collective noun. Present participle. *General Revision.* Oral exercises in logical and grammatical analysis.

Arithmetic.

7th Class.—(Numbers from 1 to 20.) Intuitive knowledge of the numbers 1 to 10, then 1 to 20. Composition and decomposition of these numbers. Concrete and abstract oral exercises in addition and subtraction, upon the first ten, the second ten, and then passing from one to the other. First written exercises of addition and subtraction, with the help of points, lines, circles or conventional signs. Knowledge of numerals and their application to the exercises of addition and subtraction, use of the signs +, —, =. Exercises of multiplication and division within the limits of the programme.

6th Class.—(Numbers 1 to 100.) Intuitive study of each ten. Concrete and abstract exercises of successive studies of the different tens. To multiply and divide a number of units where they are whole tens by 2, 4, 8, 10, 5, 3, 6, 9, 7. Intuitive knowledge of the centimetre, of the decimetre, of the metre, of the franc, of the centime. Easy exercises in evaluating in centimetres, and in decimetres, by the aid of sticks and lines marking the end of objects or pieces of furniture in the school-room. Concrete exercises and practical questions connected with other branches of education, or with knowledge acquired through experience. Signs of muitiplication and of division. Exercises of multiplication within the limits of the programme.

5th Class.—(Numbers from 1 to 1,000.) Study of the formation of the hundreds. Concrete and abstract graduated exercises of addition and subtraction, bearing upon numbers of one to three figures, in relation to the study of successive hundreds. Complete knowledge of tables of multiplication and division as far as 10 x 10. Exercises in multiplication or division with exact numbers of tens or of hundreds, by a number less than 10. Taking the $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$ . . . . . $\frac{1}{10}$, $\frac{1}{100}$ of an exactly divisible number between 1 and 100. Knowledge of the metre and of its subdivisions; of the litre, the decilitre; of the franc and kilogram. Evaluation and measurements of length, in the class-room or outside. Numerous exercises and practical problems, with one or two operations, within the limit of the numbers studied, and with respect to known measures.

4th Class.—Numbers of 1 to 1,000,000. Vocal and written numeration by successive groups (1,000 to 10,000, etc.). Concrete and abstract exercises of addition and subtraction, within the limit of the numbers studied. Exercises of multiplication or of division by a multiplier or divisor of one or two figures. Special study of the dozen, the "quinzaine," the score. Decimal numeration. Knowledge of tenths, hundredths, thousandths. Concrete and abstract exercises in addition or subtraction with numbers of one to three decimals. Multiplication or division of these numbers by a whole number of one or two figures. Knowledge of measures of length, of capacity, of weight, with the use of numbers of three decimals. Intuitive knowledge of the square centimetre, and square decimetre. Evaluation, in square centimetres or square decimetres, of a square or rectangular surface. Numerous exercises in relation to the programmes of drawing and manual work. Problems related to practical life.

3rd Class.—Whole numbers—Complete numeration. Concrete and abstract additions and subtractions within the limit of known numbers. Exercises of multiplication or of division bearing upon the same numbers, with multiplier or divisor of one to three figures. Special exercises with the use of numbers which are serviceable in rapid oral calculation (9, 11, 12, 15, 20, 25, 50.) Concrete and abstract exercises on the four operations. Taking from 1 to 10 times the $\frac{1}{2}$, $\frac{1}{3}$, ... $\frac{1}{10}$, $\frac{1}{100}$ of any number comprised between 1 and 1,000. Decimal numeration; the number of decimals may be greater than three. Exercises of addition and subtraction within the limit of these numbers. Exercises of multiplication and of division of a whole number, or of a decimal, by a number with one or two decimals. Elementary calculation upon percentage. Simple questions of interest and discount. Knowledge of measures of surface. Evaluation and measurement of square or rectangular surfaces in the school-building or its immediate neighbourhood. Measures of time. Calculation of the surface of the square, rectangle, parallelogram, and of the *triangle*. Numerous exercises and problems relating to practical life, to the industries, and to the commerce of the locality. Notes:—Small house-keeping accounts; simple invoices; memoranda; accounts of current receipts and disbursements.

2nd Class.—Numeration of decimal fractions within the limit of the number furnished by the transactions and usages of practical life. Study of ordinary fractions; addition or subtraction of fractions of the same denominator; multiplication or division of these fractions by a whole number through operation with the numerator only. The four operations, with the use of common ordinary fractions (restricted by preference to whole multipliers and divisors). Characters of divisibility by 10,100, etc.:—2, 4, 8; 3, 9; 6, 12; 5, 25, 50, 125. Problems of reduction to unity. *Calculation of surfaces, trapeziums, and other polygons; calculations relative to the circumference, and surface of the circle. Measurement of plots, of walls, of carpentry, plastering, with sketch.* Intuitive knowledge of cubic centimetre, cubic decimetre, and of cubic metre. Evaluation and measurement of volumes (cubes or parallelepipeds), of which the dimensions are indicated in centimetres, decimetres, or metres. *Measures of volume and their relation to measures of capacity, volume of the cube and of the parallelepiped*; their dimensions being given in whole numbers or decimals. Complete review of the metric system. Single estimate; net-cost; household accounts.

1st Class.

1*st Class.*—Exercises upon percentage, etc. Problems upon reduction to unity into compound operations. Rules of interes and commercial discount. Simple rules of partnership, mixture, and alligation. Calculation having relation to measures of time. Elementary problems having relation to density. *Volume of the prism. Volume and surface of the cylinder, pyramid, and cone. Cubing of a heap of manure, of hay, of gravel, of a log of wood. Elementary surveying exercises in the field, and knowledge of the cadastral scale.* Accounts relating to agriculture. Net cost. Inventory. Commercial book-keeping. Keeping of books by single entry. Current accounts for boys (indirect method).

Geography.

7*th Class.*—The School and the Home.—The school, the master, and the pupils. The home, the family. Domestic occupations. The garden, yard, barn, stable. The workshop or the shed. The orchard and the fruit trees. The domestic animals.

6*th Class.*—1st, *Birthplace.* Buildings, streets, public places, fountains, monuments, orientation. Relief of the ground. Streams of water. Roads, or ways of communication. Cultivation. Animals. *The Inhabitants.*—Customs, occupations, industry, external relations. 2nd, *The Sky.*—Very simple observations on the course of the sun, of the moon, and of several stars; the day and night; the seasons and months; the rain, snow, winds.

5*th Class.*—1st, Extension of local geography to the description of the streams, rivers, lakes, mountains, countries, etc., which may be seen in the neighbourhood of the birthplace or its surroundings. 2nd, Physical character of Switzerland; general description. The Cantons and their principal places.

4*th Class.*—Summary study of the Cantons, from the physical and political point of view.

3*rd Class.*—1st, Europe; 2nd, The ancient Cantons.

2*nd Class.*—1st, General view of the entire earth. 2nd, America and Africa. 3rd, The Cantons, Freiburg, Soleure, Basel, Schaffhouse, and Appenzell.

1*st Class.*—1st, Asia and Oceania. 2nd, The Cantons of Vaud, Aargau, Thurgau, St. Gall, Grisons, Tessin, Geneva, Valais, and Neuchâtel.

National History and Civic Instruction.

4*th*, 6*th*, 5*th Classes.*—No special instruction.

7*th Class.*—The Cavemen. The lake-dwellers. The Helvetians. Helvetia under the Romans. The barbarians. The Franks and Charlemagne. The Kingdom of Burgundy and Queen Bertha. The truce of God. The Zähringen. Peter of Savoy.

3*rd Class.*—Rudolph of Hapsburg. Origin of the Forest Cantons. Pact of 1291. The Forest Cantons and Albert of Austria. The legends of Tell. Battle of Morgarten. Manners and customs of the 13th century. Entrance of Lucerne, Zurich, Glaris, Zug, and Bern into the Confederation. Priests' Charter, War of Sempach. Battle of Næfels. Covenant of Sempach. Organisation of the Confederation of the eight ancient Cantons. Manners and customs of the 14th century. Conquest of Aargau.

2*nd Class.*—Civil war of Zurich. Wars of Burgundy. Diet and Covenant of Stanz. Entrance of Freiburg and Soleure into the Confederation. Hans Waldmann. Manners and customs of the 15th century. War of Swabia. Entrance of Basel, Schaffhouse, and Appenzell into the Confederation. The Confederation of the thirteen Cantons. The Reformation in German Switzerland. War of Kappel. Wengi. The Reformation in Romaunsh Switzerland. Conquest of Vaud by the Bernese. The separation of the two Appenzells.

1*st Class.*—Plot of Lausanne. Escalade of Geneva. Civilisation in the 16th century. Some words upon the Thirty Years' War. Treaty of Westphalia. Wars of the peasants. War of Willmergen. Major Davel. Henzi. Manners and customs of the 17th and 18th century. General ideas on the communal and cantonal authorities.

Object Lessons and Elements of Natural Science.

7*th Class.*—*The school.*—School-room, slate, blackboard, stove. *The home.*—Parents, room, table, bed, kitchen, knife, basket. *Domestic animals.*—Horse or cow. *Plants.*—Rose, carrot, cherry-tree, walnut-tree. *Human body.*—The members.

6*th Class.*—*The school.*—The school building, book, desk, table. *The home.*—Occupations of various members of the family; cellar, cask, cupboard, hammer, axe. *Animals.*—Goat, dog, or cat. *Plants.*—Tulip or lily, geranium, cabbage, bean, peach-tree or apple-tree. *Human body.*—Principal parts; sense organs, mouth or eyes.

5*th Class.*—*The meadow.*—Dandelion, finch. *The public walk.*—The chestnut, plane-tree, linden (lime-tree), sparrow. *Buildings.*—Stones—Soft stone, limestone, granite. *Forest.*—The oak, anemone, strawberry plant, belladonna, fox, woodpecker, owl, ant.

4*th Class.*—*The field.*—Wheat, potato, hare, chafer, bee. *Buildings.*—Sand, lime, slate, tile. *Mountain.*—Forest, fir, pasturage, rhododendron, gentian, chamois, eagle. *Waters.*—The waters of the mountains, glacier, torrent, stream; trout, crayfish; river, salmon; lake, pike; sea, herring, whale. *Marsh.*—Marsh reed, willow or poplar, stork, frog, dragon fly.

3*rd Class.*—*Buildings.*—Common metals; wood and stone work—carpenter and joiner, stonemason. *Heat.*—Thermometer, dilatation of bodies. *Water.*—Composition and different states of water—condensation, mists, fogs, etc.; steam engine.

2*nd Class.*—*Air.*—Properties, composition; influence of heat upon air, dilatation, circulation, winds; atmospheric pressure, barometer, pumps, balloons. *Ironwork.*—Blacksmith, locksmith, etc. *Physics.*—Compass, magnets; storm, electricity, sound; density of bodies (swimming); levers. *Heating and lighting.*—Different woods for burning; coal and peat; combustion, candle, kerosene, gas, electric light.

1*st Class.*—*Telegraph* and telephone—I. *Special industries* in the locality. II. *The human body.*—Ideas in anatomy, physiology, hygiene. III. *Foods.*—Milk, bread, fruit, vegetables, eggs and meat, spices. IV. *Drinks.*—Alcoholic drinks, non-alcoholic. V. *Clothes.*—Flax and hemp, cotton, wool, silk, leather.

Drawing.

7*th Class.*—Children 7 to 8, six lessons a week of twenty minutes each. Models shewn the pupils and drawn by the mistress on the blackboard. 1st Semester.—Pupils draw on slate; the trial so made as not to weary the hand. Elementary exercises leading the pupils gradually to the drawing of simple objects seen in the classes, in the town, or in nature.[1] 2nd Semester.—Collective drawing with pencil and with the hand absolutely free—that is to say, without either rule or slip of paper. Study and methodical drawing of straight lines, viz., horizontal, vertical, oblique; division of these lines into 2, 4, 8 equal parts. Various applications of the drawing of simple objects that have been previously analysed in so far as is suitable to the age of the pupils. Elementary study by means of folding of the following geometrical figures:—Square, rectangle, isosceles triangle, symmetrical trapezium, axes, and diagonals. Methodical drawing of these lines. Application of the studied lines and surfaces to several very elementary exercises in decoration. The most simple decorative elements; points, lines, crosses, small circles, right angles; manner of grouping them (repetition and alteration). Drawing, in elevation only, of simple objects affording applications of the acquired notions. Exercises of dictated drawing and of drawing from memory, using the slate only. Exercises in estimation by taking as a basis of comparison sticks of 10, 20, 30, 40, and 50 centimeteres. These exercises should occupy only several minutes.

6*th Class.*—Revision and completion of the ideas studied during the 2nd Semester of the 1st year. Division of lines into 2, 4, 8, 16 equal parts. Studies by means of folding, square, and right-angle; rectangle of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$; various positions of rectangle, lozenge (rhombus), isosceles and right-angled triangle, the square and its use, symmetrical trapezium and right-angled trapezium. Drawing, in elevation only, of simple objects affording appications of the ideas studied. Elementary decorative *motifs.* Exercises upon the slate, of dictated drawing, and of drawing from memory. Exercises of evaluating, in decimetres, exact lengths equal to or less than 1 metre. *5th Class.*

[1] These exercises are so combined as to develope the power of taking in at a glance. They ought to help to secure control of the hand and to prepare for the execution of writing.

5th Class.—Drawings larger than those which have been executed in the lower class. Models from nature, and constructive drawing on the blackboard. Review, with the extension of the ideas studied in the lower class. Verticals and plummet lines. Horizontals and the level of still water. Parallel lines, lines perpendicular to each other. Study of angles by means of some object (*e.g.*, bent rule, more or less opened book, etc.) Right-angle; square; acute and obtuse angles. Revision and completion, by means of folding and cutting out, of the study of the simplest geometrical rectilinear figures, square, square angle, relation of surface for rectangles of various proportions ½, ¼, ¾, ⅓, ⅔. Development of the cube and of the parallelepiped; construction from paper or thin cardboard. Lozenge inscribed in a rectangle, ratio of their surface. Isosceles triangle, traced in a square or in a rectangle, right-angle triangle, half of a square, or half of rectangle. Parallelogram traced by means of a rectangle. Trapeziums traced in a square and in a rectangle. Divisions of lines into 2, 4, 8, 16—3, 6, 12 equal parts. Application of these geometrical ideas to drawing in elevation of various objects; locksmith designs, mosaic, parquetry, joinery, and simple decoration. Shields of simple form; conventional hachures denoting blue, red, and green. Design from memory upon the slate or in an album. Exercises in evaluation by the help of sticks of which the lengths are 5, 10, 15 . . . 85, 95, 100 centimetres.

4th Class.—Models from nature and constructive designs on the blackboard. Study and drawing of arcs, and of circumferences. Pointed and semicircular arch. Locksmithing and decorative designs. Division of circumference of circle into 4, 8—3, 6, 12—5, 7 equal parts. Inscription of regular polygons. Stellar polygons, and roses (*rosaces*) derived from flowers. Divison of lines into 5, 10—3, 9 equal parts. Application:—Decorative borders composed of these new elements. Armorial shield:—Typical elementary forms, varied forms approaching the modillion—conventional hachures indicating blue (azure), red (gules), green (vert), black (sable), gold (or), and silver (argent). Federal shield (arms). Vaudoise shield. *Dictated drawing.*—Lines of construction, frequently dedicated by a pupil. Drawing from memory in an album kept specially for these exercises. Exercises of evaluating lengths of from 1 centimetre to 2 metres. These lengths ought to be drawn by straight lines traced on the blackboard, by a cord, by the size of an object, or, better still, by a rule presented successively to all the pupils of the class. *Manual work*:—Folding, cutting-out, and pasting in accord with the drawing lesson.

3rd Class.—Models, constructive designs on the blackboard. Study and freehand drawing of regular curves other than the circle, elliptic curves. The egg, oval and ovolo. Variation of the proportions which these two curves may exhibit. Application:—Drawing of simple vases, and decorative designs in which the ellipse or the oval enters as the dominant form. Curves borrowed from the vegetable kingdom. Study and drawing of leaves often used in ornamentation; flowers drawn in elevation and in vase forms, which may be derived from these studies; for example, the tulip, teacup; the bell-flower; bell, chimney for lamp or gas-flame; the lily, bind-weed, wineglass, or other models which industry can furnish. Similar studies made with fruits. Decoration of the vases. Spirals and volutes drawn freehand. Applications of these lines to ironwork (boys), to embroidery (girls). Models in relief, and first ideas upon the effects of light, vertical and horizontal shadows. Drawing from memory upon a special leaf and on reduced scale. Exercises in evaluation, upon lines or objects seen in the class. *Manual work*:—*Modelling* of objects from Nature. Measuring. Solution of a problem, which ought to be accompanied by a sketch shewing the surface or surfaces constituting the object of calculation.

Freehand Drawing.

2nd Class.—Models:—Models in relief of large dimensions, and natural models. Constructive design on the blackboard. Drawings as large as possible. Ancient arms, leaves, flowers, and flower-buds treated ornamentally, and their use in decoration. Borders, roses, ornamental designs in bas-relief. Drawings of vases belonging to various epochs. Decorative exercises applied to these forms. First notions of the perspective of observation. Prism with square base; with rectangular base; cylinder. Drawing of various objects approximating to these geometrical forms. Frequent exercises in drawing from memory.

2nd Class—continued (*Boys*).—Geometrical drawing with pencil, graduated rule and square. Notes and side-sketches in a copy-book ruled in squares, with lines 5 millimetres apart. Making a fair copy in pencil, to a determinate scale, upon the leaves of 25 by 34 centimetres. Roman letters employed in geometrical drawing; small letters, large, and medium. Exercise in small letters, alphabet, and various letters. Utilising the squaring of the sketch-book. Titles in large Roman letters of medium breadth; distance to be observed between the letters and between the words. Conventional lines employed in industrial drawing. Framing and titles. Perpendiculars and parallels drawn by means of the rule and square. Framing and titles. Rectilinear figures drawn to the scale of 1/10 and 1/100 (0·1, 0·01). Properties and construction of triangles and quadrilaterals. Development of geometrical solids bounded by plane surfaces. The square and right-angle; grating in forged iron affording application in these two figures; sketch of the object, and fair copy to scale of 3/10. Title in large and small Roman letters. Number the sketches. Same exercise with large mosaic models. Sketches of building-plots and fair copy to a scale of 1 : 100. First notions upon communal plans and boundaries: Simple sketches having relation to working in iron, wood-work, and dressed stones. Manner of disposing the various sides to be indicated. In the fair copy from these sketches, the master will insist very strictly upon the exactitude of the measurements and the operations, upon the calculation of the scale of reduction, and good placing in the drawing; upon the order of symmetry to be observed in the arrangement and titles; finally, upon the manner of placing the letters, of attaching them, and of writing the figures. Mounting in regard to the programmes of drawing and geometry. Volumes.

1st Class (*Boys*).—Large sketches drawn freehand. Models:—Models in relief of large dimensions, geometrical solids, and various objects. Designs from the vegetable kingdom. Ornaments and their application. Vases belonging to various periods in the history of art. Rational application of mouldings. Attempts at decoration. More complete study of light effects, utilising moreover the collections of models of Viollet-le-Duc. Ideas of perspective. Geometrical drawing and perspective drawing. General principles resulting from observation of seen objects, whether geometrical or perspective. Principles as to verticals, their direction constant. Apparent lengths of verticals of objects seen in perspective. Principles as to horizontals; lengths and directions of horizontals in models seen from the front; lengths and apparent directions of horizontals seen in perspective. Plan from front (front elevation tableau). Plan and line of horizon. Its use in the determination of the slopes of parallel. Horizontal lines seen in perspective. Distance point. Decrease of distance upon the line of the horizon. The square and cube. Cube cut by planes parallel or perpendicular to its base. Prisms. Circle inscribed in a square. Cylinder. Horizontal circles having their centre upon one and the same vertical. Pyramids and cones. Perspective sections of several solids by planes parallel or perpendicular to their base. Drawing in perspective, objects approaching in form to geometrical solids. Geometrical drawing with the aid of a 50 centimetre graduated rule and square and compass. Review of notions studied during the preceding year. Drawing perpendiculars and parallels by means of compass. Division of straight lines and of angles into equal parts. Scales of reduction. Regular polygons constructed by means of compass. Typographical polygons. Division of the arch into equal parts. Construction by means of the compass of the oval and of the ellipse (false). Curves called the basket-handle (*anse de panier*). Agreement of straight lines and curves, spirals, mouldings. Elementary ideas upon projection. Necessity of drawing from projection. Horizontal plane, vertical plane, of front and ground line. Horizontal projection or plane. Vertical projection or elevation. Numerous exercises upon the projection of points, of lines, of surfaces, planes, and the principal geometrical solids, prism, cylinders, pyramids, and cones. Section sketches (inked over) of common, simple objects, of locksmiths' work, of joinery, of carpentry, and of stone structures. Profiles and sections. General idea of conventional tints. Drawing pen. Manual work—joinery.

1st Class (Girls).—Freehand drawing. Models in relief of large dimensions. Motifs and various objects. Motifs borrowed from the vegetable kingdom. Leaves ornamentally designed. Vases belonging to various periods of history and art. General study of mouldings, furniture, wainscots, feet of vases, of tables, of lamps, etc. General principles of decoration. Geometrical elements. Elements drawn from the vegetable kingdom (leaves, flowers, flower-buds, fruits, etc.). Elements drawn from the animal kingdom (butter-flies, dragon-flies, bees, lady-birds, birds). Decorative borders formed from these elements. Application of these elementary notions to the decoration of various vases. Lessons upon colours and tints. Decoration style on style. Opposition of colour and harmonisation. Indication of the proper means for reproducing the designs upon material, and fixing them. Study of light-effects by using the principal models of the collection of Viollet-le-Duc. Notions of perspective of observation. Drawing of various objects from Nature. Groups of objects. Geometrical drawing. Elements of geometrical drawing by means of the graduated rule and square, application to drawing in section. Reduction of patterns.

WRITING.

7th Class.—Holding the pen. Models of medium writing. Running hand (for copies) on ruled paper with 3 millimetre lines. Small letters and numbers. Blackboard models.

6th Class.—Small writing from 2 to 3 millimetres. Models with capitals. Numbers. Medium writing, 5 millimetres, without capitals. Blackboard models.

5th Class.—Fine writing. Medium writing, (5 millimetres), with capitals. Special exercises upon small letters, with tail flourishes and irregular. Numbers. Blackboard models.

4th Class.—Fine writing. Medium writing (5 millimetres), with capitals. Special exercises upon the different classes of small letters. Numbers. Blackboard models.

3rd Class.—Fine writing. Medium writing (5 millimetres). Special exercises upon capitals. Numbers. Blackboard models.

2nd Class.—Fine writing. Medium writing (5 millimetres). Large writing of 10 millimetres. Capitals. Numbers. Blackboard models.

1st Class.—Same programme as for second class. English writing. Round writing (non-obligatory). Individual models or writing on blackboard.

SINGING.

7th Class.—Rounds, and very simple songs learned by ear.

6th Class.—Vowel exercises upon the simplest intervals after learning the songs. Exercises upon the notes—do, re, mi, fa, sol. The entire gamut.

5th Class.—Easy songs for two voices. Solfeggio—exercises upon the intervals occurring in the studied songs. Half-note, half-rest; quarter-note, quarter-rest. 2/4 and 4/4 time. Sol (G) Clef. Repetition. Key of Do (C major).

4th Class.—Sharps. Key of Sol (G major). $\frac{1}{4}$ note, $\frac{1}{4}$ rest. $\frac{3}{4}$ time. Point after the half-note. Songs for two voices.

3rd Class.—Flat and natural: Key of Fa (F major). 3/8 and 6/8 time. The dot after a quarter and the eighth note. Songs for two and three voices (two or three part songs).

2nd Class.—Songs for two and three voices. Exercises in the keys of the songs studied. Keys of re and si flat (D and B flat). 2/2 and 4/2 time. Whole note, whole rest. Special study of the value of notes and of rests. Liaison (slur or tie). Double dot.

1st Class.—Keys of la and mi flat (A and E flat major). Trio. Ordinary major keys not yet studied. Minor keys commonly employed. 9/8 and 12/8 time. Fa (F or bass) Clef. Songs for three voices.

GYMNASTICS.

7th Class.—Formation in a rank and in a circle. Forming and breaking the rank. Formation in several ranks. Marking time and forward marching. Study of marching steps; break and change of step. Marching with singing. Hopping and jumping. Simple exercises of the arms, of the head, and of the bodily extremities. Study of the running-step in position and in restricted groups. Rules of the position of "attention" and "standing at ease." Numbering. Flanking. Alignment. Simple methods of taking distances. Various games.

6th Class.—Forming and breaking ranks, with various formations. Study of wheeling. Joining hands (chains). Formation of the column of twos, and simple exercises for the couples. Change step. Alternating the different steps and marches learnt. Individual wheeling a quarter of a turn. Backward marching. Running march. Very simple exercises together. Hopping and jumping. *Planche.* Suspension exercises, with feet resting on the ground. Various games.

5th Class (*Boys*).—Forming and breaking the line. Rules of the positions of "beware" (*garde à vous*) and of rest (stand at ease). Alignment. Marching in column. Individual wheeling, half turn. Study of the gymnastic step. Short, quick run. Exercises of the arms, legs, and trunk. Simple exercises with poles and small dumb-bells. Preparatory exercises for jumping. Jumping. Repeat the preparatory exercises for suspensions, and commence the free suspension. Elementary exercises with apparatus. Various games in the gymnastic hall and in open air. (*Girls*)—Formation exercises and marching. Formation in a rank. Breaking and reforming the line. Taking normal position. Forming the column of twos. Study of half turns, in position. Repeating the marching in step, on the track, breaking step, changing step. Exercises in twos in the circle formation and counter-marching. Study of the galop, change-hop, and gymnastic steps; alternate these different steps with the regular marching. Exercises with gymnastic apparatus—parallel bars (lateral supports), ladders (hanging extended), poles. Preliminary exercises—simple movements of the arms, legs, head, and trunk. Simple exercises with sticks. Various games in the gymnastic hall and in open air.

4th Class (*Boys*).—Repetition of the exercises of order and marching in the preceding year (insist on obtaining very great precision). Gymnastic step for two or three minutes. Exercises of the arms, legs, and trunk. Combined exercises. Little series of exercises. Exercises preparatory for the jump. Jumping. Various games in the gymnastic hall or in open air. Gymnastic apparatus—apparatus for climbing, vaulting-pole, parallel bars and rack. (*Girls*)—Formation exercises and marching. Repeat the exercises of the previous year. Opening and closing the ranks and files. Study of the hop step and schottische step. Alternate the regular march with the step learnt. Wheeling of couples. Exercises of couples on the track and on the circle. Execution of easy rounds. Marching in square. Preliminary exercises—Swinging and circling the arms. Combination of these exercises with those of preceding year. Raising, moving, and bending the legs. Turning, bending the body and head. Easy movements with the stick. Exercises with the gymnastic apparatus. Various games in the gymnastic hall and in open air.

3rd Class (*Boys*).—Repetition of the formation exercises and of marching of the preceding year. Breaking up in groups and forming into line. Gymnastic step, three to four minutes at most. Alternating the gymnastic with the regular step. Exercises of the arms, legs, and trunk; combined exercises, and series of exercises. Exercises with the iron bar. Long jumping, high jumping, with feet together, and commencing with moderate jumps in depth, and in using the vaulting-pole. Various games in the gymnastic-hall and in open air. Apparatus: Continuation of the programme for the preceding year; apparatus for climbing, for vaulting, the parallel bars, the rack. (*Girls*)—Formation exercises and marching. Cross-marching. Schottische step, and study of the *pas fléchi*, of the change double-step, the change-hop, and schottische. Alternate the regular step with the step learnt. Pass from the flank line to the column by 2, 3, 4. Change of place of couples, by wheeling during the march. Serpentine in circular formation. Individual circular marches in circular formation, and forming the chain. Execution of rounds. Preliminary exercises: Simple combinations of arm movements, of the legs, head, and trunk, learnt during the preceding year. Combined movements with the stick. Exercises with the gymnastic apparatus. Various games in the gymnastic-hall and open air.

2nd Class (*Boys*).—Passing from the two-rank formation to that of one rank, and *vice versa*, in line from front. Marching abreast and obliquely. Movement of the arms, of the legs, and trunk; combined exercises; series of exercises. Jumping. Exercises with the *planche d'assaut*. Various games in the gymnastic-hall and in open air. Apparatus: Apparatus for climbing, the vaulting-pole, parallel bars, rack rings, etc. (*Girls*)—Formation exercises and marching. Formation of arches. Studies of the polka and waltz-step, of the sliding and waltz-turn, of the *pas bercé* and the pirouette. Alternate the regular march with the different steps. Turning the hand and arm. Opening and closing the couples by different steps. Twirling in fours. Execution of rounds, with singing. Preliminary exercises: Combined movements with poles. Exercises with gymnastic apparatus. Various games in the gymnastic hall, or in the open.

1st Class (*Boys*).—Repetition of the exercises of order and of marching for the preceding year. Combined exercises with the iron bar, and series of exercises a little more difficult than in the preceding year. Graduated swimming exercises in the hall, afterwards in the swimming-bath. Various games in the gymnastic-hall and in the open. Gymnastic apparatus: Jumping, *planche d'assaut*, climbing apparatus, vaulting-pole, parallels, rack, and rings, etc. (*Girls*)—Formation exercises and marching. Formation of arches. Forming the chain. Countermarching, with singing. Double and inverse countermarches. Combination of the *bercé* march, with leg movement. Mazurka step. Schottische and waltz step. Study of the *pas croisé sauté*, of the double-step, of the *pirouette roisé*. Execute the different steps, dancing. Marching *en croix* to the pirouette-step. Rounds, with singing.

NEEDLEWORK

NEEDLEWORK.

7th Class.—*Knitting*—A strip of 35–40 stitches, divided into six. 1. Knitting a garter. 2. Purling. 3. One needle plain and one purl. 4. Ribbed stocking. 5. One needle plain, one purl with seam. 6. Repetition of (5,), including decreasing. The mistress commences the strips, for which écru thread is employed. Each part of the strip should have a length of 8–10 centimetres. Sewing—Stitch in front, and seam on open canvas. Sewing a strip with tucks and borders. For the first exercises on strips use red or blue cotton. The pupils themselves prepare the strips, making the tucks, tacking and commencing the seams, themselves starting the sewing. The exercises on canvas are so made as to keep it flat.

6 Class.—*Knitting*—Two legs of stockings with the strips at the heel. The mistress may commence the stockings. Sewing—Repetition of the seam. Study of back-stitching, of the cross-stitch, and side-stitching on canvas. Medium and narrow hem. For the exercises of the second year, utilise the same samples. Making-up. Work-bag (90 x 45). Make the pocket in the following manner:—Hem all the sides, then join them by top-sewing.

5 Class.—*Knitting*—A pair of stockings. Simple small-chain commenced by the pupil. Sewing—Sewing. Broad hem. Back-stitching on canvas. English top-sewing. Running and felling. Making-up—Pillow-slip.

4th Class.—*Knitting*—A pair of stockings entirely made by the pupil (small double chain). Sewing—Run and fell a seam on the straight and on the cross. Repetition of exercises of the preceding year. String-stitch with red cotton for marking the chemise. Study of cross-stitch. Making-up—Alphabet. Chemise according to the size of the pupil. Finish the neck and shoulders by a hem and trim; make false hem for tape and fastening.

3rd Class.—*Knitting*—A pair of stockings, ribbed if desired. Sewing—Gathering Setting. Button-hole. String-stitch with white cotton. Cutting-out—Pattern of a little bodice with shoulder straps; and of a girl's chemise. Mending—Mending the strip with plain stitch.

2nd Class.—*Knitting*—Socks. Re-knitting the heel. Sewing—Repetition of the exercises of the preceding year. Loop. Herringboning (optional). Cutting-out—Girls' drawers. Chemise for the pupil. Making-up—Chemise from commencement by pupil. Mending—Piece of flannel. Piece of print. Piece of cloth (two corners). Mending holes in the knitting with plain stitch and seam. Mending éxercises applied to the repair of used garments.

1st Class.—*Sewing*—Repetition of the exercises of preceding years. Cutting-out—Knickers. Chemise for child of 2–5 years. Bib. Making-up—Woman's chemise. Various shapes of drawers. Mending—Piece of material (four corners), cloth, piece to darn. Mending holes with stitch and seam. Application of mending exercises to garments.

DOMESTIC ECONOMY.

Apartments.—Selection and maintenance of the apartments. Care of the furniture. Kitchen utensils and vessels. The meal. Provisions of the household. Care to give to the sick—The room: ventilation, heating, clothes, and beds. Foods, drinks, potions, etc. Minor pharmacy. First-aid in case of accidents.

GERMAN PROGRAMME.

1st Year.—Oral and written exercises upon the things in school. Grammar—Articles and adjectives. Substantives in the different cases. Prepositions. Verbs *haben* and *sein*, and some other verbs, as *lesen, schreiben, zeichnen*, etc., on the present of the indicative. Easy songs and poems.

2nd Year.—Oral and written exercises—Man, clothes, family, weather, the house according to *Deutsche Stunden* of H. Schacht. Grammar—Prepositions. Declension of substantives and adjectives. Regular verbs. Reading of easy pieces. Some poems and songs.

3rd Year.—Oral and written exercises. The house (continuation). The domestic animals (according to Schacht). Study of several tables of Hölzel. Grammar—Declension and degrees of comparison of adjectives. Regular and irregular verbs in the principal tenses and moods. Little descriptions and letters. Reading poetry and songs.

9. *Secondary Education in the Canton of Vaud.*—The secondary public instruction of the canton of Vaud comprises:—

(1) The secondary schools.
(2) The girls' superior schools.
(3) The communal colleges.
(4) The cantonal school of agricultnre.
(5) The cantonal industrial and commercial schools.
(6) The cantonal college.
(7) The classic gymnasium.
(8) The normal schools.

The programme of studies in (1) are those of the cantonal industrial school, and includes for young women needlework and domestic economy. Pupils must be at least 12 years of age; and the communes may send meritorious pupils of the higher division of the secondary schools, free of all expense, to these schools.

The aim of (2) is to give young women a sound and thorough education, and to prepare them, by means of special studies, for their future vocation in the family, or for the various possible callings in industry, commerce, and teaching. The programme of studies is as follows:—

1. French language and literature.
2. German.
3. English.
4. Arithmetic, accountancy, elements of mathematics.
5. Geography.
6. History.
7. Elements of physical and natural science.
8. Writing.
9. Drawing.
10. Music.
11. Needlework.
12. Domestic economy.
13. Gymnastics.
14. Religion (optional).

The programme of the communal colleges (3) is identical with that of the cantonal colleges or the cantonal industrial school.

The programme of (4) is:—

1. Agriculture—soils, cultivation.
2. Rural and Alpine economy.
3. Viticulture.
4. Forestry.
5. Kitchen gardening.
6. Arboriculture.
7. Zootechnics.
8. Agricultural Zoology.
9. Bee culture.
10. Fish culture.
11. Milk industry.
12. Elementary mechanics, agricultural machines, and Technology.
13. Geometry and survey.
14. Technical drawing.
15. Rural building.
16. Drainage and irrigation.
17. Agricultural accountancy.
18. Agricultural geology.
19. Agriculture, meteorology, and elements of physics
20. Agricultural chemistry.
21. Agricultural botany.
22. Rural legislation.
23. Civic instruction.
24. Manual work.
25. Gymnastics.

The above instruction is given by university professors, secondary masters, and special masters during two winter *semesters* (half-years), and a diploma is conferred on those who pass the final examinations and fulfil their attendance on the course.

The

The cantonal industrial and commercial schools comprise really the following schools, viz. :—

(*a*) The industrial school.
(*b*) The professional school.
(*c*) The school of commerce.
(*d*) The mathematical gymnasium.

The subjects of the programmes of these several schools are :—

	Industrial.	*Professional.*	*Commercial.*	*Mathematical Gymnasium.*
1.	French language.	French language.	French language.	French literature and language.
2.	German language.	German language.	German language.	German literature and language.
3.	Arithmetic.	General history (commerce and industry).	English language.	History.
4.	Geometry and algebra.	Mathematics.	Italian language.	Mathematics, topography, astronomy.
5.	Accountancy.	Mechanics.	Spanish language.	Industrial drawing.
6.	Geography and cosmography.	Industrial accountancy.	Caligraphy.	Artistic drawing.
7.	History.	Artistic drawing and modelling.	Drawing.	Physics.
8.	Writing.	Industrial drawing.	Accountancy.	Chemistry.
9.	Artistic and industrial drawing.	Physics.	Commercial arithmetic.	Natural science.
10.	Physics and chemistry.	Chemistry.	Commercial geography.	Mechanics.
11.	Natural science.	Natural science.	General history (commerce and industry).	
12.	Elements of mechanics.	Manual work on wood, stone, metal.	Physics.	....
13.	Manual work.	.....	Chemistry.	.....
14.	Singing.	.....	Civil law.	.....
15.	Gymnastics.	.....	Commercial legislation.	.....
16.	Religion (optional).	.....	Political economy.	.....
17.	....	....	Knowledge of merchandise.	.....
18.	.....	.....	Practical exercises.	.....

The length of each course is three years. The entrance age is 12 for the industrial course and 15 for each of the others. Regular attendance and a successful pass ensures the issue of a diploma in each case; this diploma is known in the case of the mathematical gymnasium as the *Bachelier ès-sciences mathématiques*.

In the cantonal college, which prepares pupils for the higher classical studies, the entrance age is 10 years, and the course lasts six years. The programme of studies is as follows :—

1. French.
2. Latin.
3. Greek.
4. German.
5. History.
6. Geography.
7. Arithmetic, accountancy, geometry, algebra.
8. Writing.
9. Civic instruction.
10. Natural science.
11. Singing.
12. Drawing.
13. Gymnastics.
14. Religion (optional).

10. *Outline of some of the subjects in the preceding scheme.*—Since a mere list of subjects does not *per se* indicate the standard of the teaching, some more detailed explanation is necessary, shewing more definitely how these subjects are taught. It will suffice to take several subjects, and give a more explicit statement of the teaching for them alone. Natural history, physics and chemistry, and mathematics will perhaps serve the purpose. (Translated from the official programmes).

NATURAL HISTORY.

Age 12 to 13.—*Elementary notions* : Preliminary considerations. Kingdoms. Distinction between gross matter and living beings. *Study of the human body*—Digestion, circulation, respiration, secretion, assimilation, alimentation. The nervous system. Sense organs. Locomotion. *Classification of the animal kingdom.* Mammifera—their characters and divisions. Alimentation—domestic species, cattle ; savage species ; game ; the dog. The animals serviceable to man. Industry—the ruminants, leather, tanning. Wools. Various products. Amphibia. Cetacea. The fur animals. Various species.

Age 13 to 14.—*Zoology* : Elementary course. Recapitulation of the preceding course. *Birds.* Character and classifications. Alimentation. Domestic species—the poultry-yard. Savage species. Industry. Eggs and feathers. Song. Aviaries—various kinds. *Reptiles*—tortoise, lizard, serpent. *Batrachians—fish*, character and classification ; fresh-water fish ; salt-water fish. Articulata and annellata. Useful insects. Injurious insects. Arachnida. Myriapoda. Crustacea. Annelidæ. *Molluscs*—alimentary species, industrial species, various species. *Zoophytes.*

Age 14 to 15.—*Botany, Mineralogy, and Geology* : Elementary course. Botany. Vegetable physiology. Functions of nutrition. Root, stem, leaves. Reproductive functions—flower, fruit, seed, germination, artificial reproduction of vegetables. Classification. Herborisations (field botany). *Alimentary plants*—Cereals, tubers, and roots. Fodder. Vegetables. The kitchen-garden. Fruits. Orchard. Exotic alimentary plants, *Industrial plants.*—Textile plants. Oil-bearing plants. Tinctorial plants. Timbers for construction. Firewood. *Medicinal plants.*—Ornamental plants. *Mineralogy*—Preliminary ideas. Minerals. Combustibles. Common metals. Precious metals. Materials of construction. Precious stones. Various minerals. *Geology.—Interaal heat of the earth.*—The earth, its form, composition of its crust. Characters of the rock-fossils. Classification of strata. Terrestrial heat proper. Earthquakes. Volcanoes. Thermal sources. Artesian wells. *Origin and revolution of the globe.*—Fundamental ideas regarding the classification of the surface. Races that have vanished. Relative age of some of the mountains of Europe. Various deposits. Modifications produced by wind and water. *Résumé.*

CHEMICAL AND PHYSICAL SCIENCE.

Age 13 to 14.—*Physics and chemistry.*—Preliminary ideas. The course must be so directed as to introduce the description of simple important elements, phænomena, and operations. States of matter. Various gases; their weight. Atmospheric pressure. Fusion. Solution. Crystallisation. Boiling and distillation. Chemical modifications of matter. Chemical solution. Solvent action of some acids upon metals, upon chalk, etc. Various applications, engraving, cleaning, etc. Simple and compound bodies. Combustion in air, and in oxygen. Slow oxidation. Water. Atmospheric air. Historical conceptions as to the discoveries which constituted the starting-point of chemistry. (Lavoisier, etc.)

Age 14 to 15.—*Physics.*—Constitution of bodies. Universal attraction. Gravity. Fall of bodies. (Experimental.) Weight of bodies. Weighing. Specific weight (flask method). General properties of solids. *Liquids.*—Principle of Pascal. Elements of hydrostatics. Principle of Archimedes. Areometers. Communicating vessels. *Properties of Gases.*—Law of Mariotte. Atmospheric pressure. Barometers and their use. Pneumatic machine and compression pump. Aspiration pump. Syphon. Aerostats. *Heat.*—Dilatation. Thermometers. Changes in the state of bodies. Ebullition. Thermal conductivity. Radiation of heat in friction and in impact. Production of cold. Electricity.—Tensional electricity and ordinary electric machine. Electrophorus. Leyden jar. Atmospheric electricity. Galvanic pile. Simple cell with one liquid. Principal effects of an electric current. Telegraphy. Needle and compass. *Acoustics.*—Production of sound. Its velocity. Echoes. The gamut. *Optics.*—Luminous bodies, transparent, opaque, etc. Propagation of light; its velocity. Reflexion of light by plane mirrors. Simple cases of spherical mirrors. Refraction; its definition, and several examples. Decomposition of light. Solar spectrum.

Age 14 to 15.—*Chemistry.*—Compound and simple bodies. (The series of elements arranged according to their atomicity). Metals and metalloids. Rules and nomenclature concerning acids, oxides, and salts (according to the unitary and atomic theory). Hydrogen. Chlorine, and hyrochloric acid. Iodine and bromine. Oxygen and sulphur. Combustion. Respiration. Sulphuretted hydrogen. Sulphuric acid. Nitrogen. Atmospheric air. Ammonia. Nitric acid. Ordinary and amorphous phosphorus. Properties and use of phosphorus. Carbon, carbon monoxide, carbonic acid. General composition of organic matters. Their combustion. Silicon. Study of metals and of their principal oxides, salts, and alloys.

MATHEMATICS.

Special for Classic Pupils.

Age 14 to 15.—*Algebra.*—Algebraic calculation applied to expressions, whole or fractional. Solution of equations of the first degree, of one or more unknowns. Problems.

Age 15 to 16.—Calculation of roots of the second degree; various exercises; problems; discussion. Progressions and logarithms. Compound interest and annuities.

Age 14 to 15.—*Geometry.*—Plane geometry, as far as proportional lines inclusive. Areas of rectilineal figures. Proportions or equal ratios.

Age 15 to 16.—Revision of the proceeding. End of plane geometry. Geometry of three dimensions, omitting supplementary trihedra, and spherical triangles.

Special for Pupils of the Industrial Schools.

Age 3 to 15.—*Algebra*, and geometry the same as for classic pupils.

Age 4 to 15.—*Mechanics:* Elementary course, comprising the study of forces, of work, of the centre of gravity, of simple machines, and the description of prime movers.

In regard to languages, it may be mentioned that in the year 15 to 16 the studies are as follows:—

Latin.—Systematic study of subordinate propositions. The analysis and scansion of the lyric measures. Exercises in prosody. Interpretation, or analytic and philologic reading of such authors as Sallust, Cicero (the orations and philosophic discourses), Pliny (the panegyric of Trajan), Virgil, Horace (several odes, epistles, or satires). Fluent reading. Exercises. Translations. Recitation. Mythology and Roman antiquities, as far as is necessary for thoroughly understanding the authors.

Greek Grammar.—Revision of the most difficult parts. Complete syntax. Interpretation of such authors as Xenophon, Herodotus, Homer, Hesiod, Theocritus. Fluent reading of a very easy author. Exercises. Translations.

German Reading.—Recitation. Conversational exercises. Syntax and analysis of the compound sentence. Interpretation of selected pieces from easy authors, in prose and verse. Translation of French into German. Exercises. Translations. Compositions on easy subjects.

The studies in Latin commence at the age of 9 years; those in Greek at 12; and those in German at 11. Although the whole course is not shewn, sufficient has been given to indicate its character. It is obvious in reviewing the above that the opportunity of receiving a good secondary education is given in Switzerland as it is not here. This will be more strongly felt when it is at the same time remembered that the instruction is given by teachers who have passed through such an education themselves, and have then qualified themselves as specialists. It is also to be borne in mind in a consideration of the character of this education, that the scientific equipment of the schools is adequate for thoroughly teaching the various subjects. The schools are provided with very fine physical and chemical laboratories, and also with fine natural history museums.

11. *Conclusion.*—Bearing in mind that the teachers of Swiss schools are more highly trained than they are in this State, and comparing the preceding programmes with the work done in the public and private schools of New South Wales, it is evident that the educational opportunities are much greater for children in Switzerland, than they are for children here.

CHAPTER VI.

CHAPTER VI.

Primary Education in Germany and other Countries of Europe.

[G. H. KNIBBS.]

1. *Introduction.*—In examining the educational system of a country with a view to ascertaining how far its features are applicable elsewhere, the scheme of social organisation must be taken into account. Switzerland and America are thoroughly democratic; their lowest to their highest forms of education are, at least theoretically, for the people as a whole; in some states the education is free, up to and inclusive of the University; their military organisations are also on democratic lines; personal freedom and personal opportunity are, at least in the latter country, very great. Swiss children, and those of the United States, are assumed, in so far as an educational system can assume it, to have the equal regard of the State.

In a purely democratic educational system, the initial stages of education must either be absolutely identical or officially regarded as equally efficient in qualifying for *all* forms of higher education. Specialisation in given directions is postponed as long as possible, and freedom to select a career kept open, till primary education is closed.

The German educational system does not fulfil this democratic condition: it demands a somewhat early decision as to career, at least as regards those careers which are supposed to require a specially classical or a specially scientific education; and it demands also an early decision as to whether one intends to be an artisan, or to follow a professional calling.

On this account the elementary education of Germany presents distinct features, which ought to be viewed in the light of these facts.

The education provided in the ordinary *Volksschulen* (Folkschools, or popular primary schools), is supposed to qualify for ordinary or unskilled labour, etc. To be equipped for skilled labour, one must go on to the *Fortbildungsschulen* (continuation schools) of various kinds—that is, after leaving the Volksschule. For the higher callings, the educational equipment is through preparatory schools (Vorschulen), the progymnasiums, etc., following on afterwards to the Realschulen or Gymnasien.

This conception of an educational system is adapted to a community where the movement is mainly in horizontal planes, as it were, of the social strata; where the artisan class in general remain artisans—*i.e.*, it is suitable to an old established community not essentially democratic in its tendency, and is not so well adapted to a country where the movement is freely vertical as in America.

Thus in its detail the German system is not organised appropriately for democratic communities, where the popular primary school ought to be really preparatory for *all* higher forms of education. Nevertheless it is an excellent system, as will later appear, and with some modification it can be adapted to a democratic community.

In dealing with a State system, it must first be definitely settled whether it is to be democratic or not. If the system is to aim at giving *every child* in the community an opportunity of rising to whatever position his talents will allow, then the American and Swiss ideals must govern us, and perhaps to some extent the French. It is still a problem as to how early it is desirable to allow specialisation in a State system, and only people who are ignorant of the complexity of the problem will be positive in regard to it. It may be said, however, that the tendency and features of change in all modern education are in the direction of giving all classes of the community equal opportunities of achieving through education what is possible with their character and natural endowment. This tendency is recognised by some of the ablest educationists of Germany as a distinct advance.

Another feature of modern significance in German education is the adaptation to the rapidly changing circumstances of the modern world. Science is playing a part in modern industrial and commercial life of daily increasing significance, and it has become evident that the classical basis for all higher education can no longer be maintained in its original form. The reform movement in Germany has affirmed this, in the recent pronouncement[1] as regards the equality of privileges of the three forms of secondary education.

To appreciate properly the German school, it must be remembered that the teachers commence their work at 18 or 19, after a good special education qualifying them for that office, in which training in teaching constitutes an important element. This secondary education is given by men of still higher education—almost without exception men of University training,—whose period of education usually extends till they are 30 years of age, and who are specialists in the branches they teach.

2. *The development of German elementary education.*—Popular education in Germany practically commenced with Luther's exhortations in regard to the education of children (1524), and the work of Melanchthon in editing school-books, and actively undertaking the promotion of the cause of education, labours that won for him the title "Præceptor Germaniæ." It is nearly 200 years ago (1713) since Frederick

[1] By the Royal decree of 26th November, 1900: "With regard to the question of privileges, the principle to be observed that the Gymnasium, the Realgymnasium, and the Oberrealschule, shall be deemed equal in respect of general intellectual culture. . . . . ; *consequently steps are to be taken to extend the privilege of institutions with a non-classical curriculum.* This is the best means of raising the repute, and increasing attendance at these institutions, and of bringing about a wider spread of modern and practical subjects. . . . . "—(Signed) WILHELM R.

Frederick William I of Prussia immediately upon ascending the throne proclaimed "evangelical-reformed" regulations concerning inspection, the gymnasia, and schools, etc.; and in 1717 he directed that, where schools existed, *all* children should attend. At the close of the seven years' war (1763), Frederick the Great directed that children should be sent to school at 5 and attend till adequately educated (13–14), but this law was not made even fairly efficient until about 1794, when Frederick William II determined the responsibility of providing schools by a general statute (Allgemeines Landrecht). Frederick William III (1797–1840), after his humiliation by Napoleon I, made strenuous efforts at improving popular education, sending Germans to Pestalozzi's school in Switzerland and introducing teachers from other countries. Before 1820, town and country schools had been placed under the control of directing boards (Schuldeputationen, Schulvorstände) and education was made a department of state (Ministerium der Geistlichen, Unterrichts,—und Medizinal-Angelegenheiten in Prussia; Ministerium des Kultus und öffentlichen Unterrichts in Saxony.)

In 1825 the obligation of school attendance was more strongly enforced, the duties of school administrations and provincial school boards defined (Schulregierungen und Provinzialschulkollegien). In 1850 regular teachers were made civil servants, and elementary education was attempted to be made free, this being consummated in 1888.

In 1872 the state, under the school supervision law (Schulaufsichtgesetz), asserted the right to the supervision of all schools. This general supervision under a department of highly-educated leaders of broad culture and sympathies, is undoubtedly in the public interest.

The system of administration is decentralised in each province by the creation of administrations (Regierungen), these being divided in sections (Abteilungen), the personnel of the sections consisting of several—three or four—councillors (Schulräte). These are civil servants, paid by the Government, and are subordinate to the provincial school board (Provinzialschulkollegium), the members of which, also known as Schulräte, generally number four or five. There are about three administrative centres to a province, and about sixteen districts (Schulkreise) under each administrative centre. This ensures thorough attention to the wants of each district.

3. *Character of German elementary education.*—The German elementary school is good, not so much because of the range of its curriculum as because its teachers are properly educated and trained, and they are not allowed to teach before passing through a special preparing and training school. They therefore teach well, as is generally admitted. It ought to be added that the theory and practice of teaching has been ably studied in Germany for many years past.

The following is an expression of opinion from Russia as to the character of the German elementary teacher, and German education:—

"The German teacher is a man of short stature but of great mental calibre. . . . . He is preparing the most startling surprises. . . . . The English had hardly expected to cope so soon with an equal competition in industry, commerce, etc. . . . . but their eyes were suddenly opened to the fact that the Germans . . . . . were surpassing them in many ways. . . . . We must give the most earnest attention to the effect of German school education."[1]

Belgium opinion is equally flattering according to the following testimony:—

Baron de Haulleville, of Belgium, in an article on the Germans in Brussels, writes:—"The elementary schools of Germany, are on the whole, the best in Europe. Children there learn to fear God and respect authority. . . . . Combine the marvellous system of technical education, with this education in the elementary schools and with disciplinary training, and you have the secret of the present power of Germany, political and economic, with its future inevitable consequences."

Mr. E. M. Field, one of His Majesty's Inspectors of Schools, *London*, England, says:—

"The great strength of the latter (*i.e.*, the German teacher) seems to me to lie in his power of exposition and his appreciation of his own language and literature—a direction in which the average English teacher is perhaps least strong. It is impossible not to be struck on the one hand with his facility in expression, his ability to expound a piece of literature in all its lights, to discourse on a passage of history or a point in geography or science; and, on the other hand, with the care he takes to inculcate respect for the mother-tongue upon his pupils.

"He has often a very heavy burden of work—more than he can possibly do well; but even when the state of his exercise books and other indications shew that he does not adequately perform his whole task, he is nevertheless able to hold his class attentive as soon as he begins an oral lesson. The eager faces and engrossed expression of the children in the best schools impress themselves on the observer's memory.

"In good schools he is another illustration of the truth that *the personality of the teacher is what matters most.*"[2]

And speaking of the aim of the elementary school Mr. Field says also:—

"The expansion of head and heart is the common aim, and interest the common instrument, of all intellectual work.

"It follows that a limited curriculum is sufficient. It is wrong to set high value upon the accumulation of knowledge *at the expense of ethical and intellectual thoroughness.* Much detail in geography and history, a large amount of reading matter, a free range of subjects, are not in themselves important. Teachers capable of thorough ethical and intellectual treatment of their work are the first necessity, men who know how to free themselves from all that is petty, and yet see that every detail needs care; then a choice of work that can really be done, and which forms a harmonious whole."[3]

4. *Curriculum in the elementary schools of Dresden.*—In order to acquire an adequate conception of the teaching in the elementary schools in Saxony it is necessary to review one of the official programmes. For that purpose we take that of the evangelical, that is the Lutheran, schools of the city of Dresden. (Evangelischen Bezirksschulen der Stadt, Dresden, 1900.) The following is the time-table of these schools, the ages being as noted. The

[1] НОВОЕ ВРЕМЯ (Novoe Vremya), 29th January, 1898.
[2] Special Reports on Educational Subjects, vol. 9, p. 303.
[3] *Ibid.*, p. 315.

THE time-table for the Bezirksschulen (District Elementary Schools) of Dresden is as follows:—

	Boys.								Girls.							
Scholars' Age	6-7.	7-8.	8-9.	9-10.	10-11.	11-12.	12-13.	13-14.	6-7.	7-8.	8-9.	9-10.	10-11.	11-12.	12-13.	13-14.
Class	VIII.	VII.	VI.	V.	IV.	III.	II	I.	VIII.	VII.	VI.	V.	IV.	III.	II.	I.
Subject—																
Biblical History	$2\frac{2}{3}$	$2\frac{2}{3}$	3	2	2	2	2	2	$2\frac{2}{3}$	$2\frac{2}{3}$	3	2	2	2	2	2
Instruction in Catechism			...	1	2	2	2	2			...	2	2	2	2	2
Reading	5	5	4	3	2	2	2	2	5	5	4	3	2	2	2	2
Orthography	$2\frac{2}{3}$	2	1	1	1	1	1	1	$2\frac{2}{3}$	2	1	1	1	1	1	1
Mother Tongue			1	1	1	1	1	1			1	1	1	1	1	1
Composition	...	...	1	1	2	2	2	2	...	...	1	1	2	2	2	2
Arithmetic	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3
Geometry	...	...	...	...	...	1	2	2	...	...	...	...	...	...	..	...
Natural History	...	...	...	2	2	2	1	1	...	...	...	1	2	2	1	1
Physics	...	...	...	...	..	..	2	2	...	...	...	...	...	...	2	2
Geography	...	...	2	2	2	2	2	2	...	...	2	2	2	2	2	2
History	...	...	...	...	2	2	2	2	...	...	...	...	1	2	2	2
Writing	?	3	3	3	3	2	1	...	?	3	3	3	3	2	1	...
Drawing	...	...	...	...	2	2	2	4	...	...	...	...	1	1	2	2
Singing	?	?	1	2	1	1	2	1	?	?	1	1	1	1	1	2
Gymnastics	...	...	...	2	2	2	2	2	...	...	...	...	2	2	2	2
Needlework	...	...	...	...	...	...	...	...	...	2	4	4	4	4	4	4
	18[1]	18[1]	20	24	28	28	30	30	18[1]	20[1]	24	24	30	30	30	30

In exhibiting the details of the curriculum, considerable use has been made of the official programme, which is the joint work of the Royal District Inspector of Schools (Der königliche Bezirksschulinspektor) and the directors of the schools (Die Direktoren der Bezirksschulen)[2]. It may be said that in Sections 5 to 24 *the Programme of the Evangelical Schools* (*Bezirksschulen*) *of Dresden* is practically outlined in detail.

5. *Religion.*—Some idea of the outline of the programme of religious teaching, both in respect of biblical history and the catechism, is given in Chapter XV, Section 6, to which reference may be made. The instruction very thoroughly embraces both elements.

The object of the religious instruction is explicitly stated to be as follows:—

(1) The religious instruction in the Folk-school shall educate the children in the true fear of God through the imparting of the main outlines of sacred history and the doctrine of salvation (Heilslehre), etc.

(2) The instruction shall embrace the biblical history of the Old and New Testament, and the explanation of the smaller Lutheran Catechism.

The details need not be given. The time devoted, as shown in the programme hereinafter. The biblical history covers a wide area. The following programme of the 8th, 7th, and 6th classes will shew the treatment. A verse of Scripture or of a hymn is learnt and repeated with each story. The first few words only of the verse are given.

8th Class. (4 lessons of 40 minutes each, per week):—1. The Creation. (But our God is in the heavens.) 2. Abraham and Lot. (Blessed are the meek.) 3. Joseph. (Be devout and upright.) 4. Jacob in Egypt. (Thou shalt rise in the presence of a grey head.) 5. The birth of Moses. (Call upon me in trouble.) 6. Moses in the land of Midian. (Commit thy way unto the Lord.) 7. The Exodus from Egypt. (Hymn 464, 1 and 2. Wake up my heart.) 8. The birth of Jesus. (Let us love Him.) 9. The Wise Men from the East. (Hymn 464, 8.) 10. Jesus in the Temple. (Hymn 464, 9.) 11. The marriage at Cana. (Cast all your care upon Him.) 12. The feeding of the 5,000. (All eyes wait upon Thee.) 13. The Widow of Nain's son. (Come unto me all ye that labour and are heavy laden). 14. The Good Samaritan. (Blessed are the merciful.) 15. Christ blessing the Children. (Let little children come unto me.)[3]

7th Class. (4 lessons of 40 minutes each, per week):—1. The Creation.[4] 2. The Fall. 3. Abraham's journey to Egypt. 4. Abraham and Lot.[4] 5. Joseph.[4] 6. Birth of Moses.[4] 7. Moses in the Land of Midian.[4] 8. Moses before Pharoah. 9. The Exodus from Egypt.[4] 10. The Giving of the Law. 11. Ruth. 12. Hannah and Samuel. 13. The birth of Jesus.[4] 14. The Wise Men from the East.[4] 15. The flight to Egypt. 16. Jesus in the Temple.[4] 17. The Baptism of Jesus. 18. The Marriage of Cana.[4] 19. The feeding of the 5,000.[4] 20. The Widow of Nain's Son.[4] 21. The Storm upon the Sea of Galilee. 22. The Good Samaritan.[4] 23. Jesus blesses the Children.[4] 24. The death of Jesus on the Cross. The Resurrection of Jesus.

6th Class. (3 hour lessons weekly):—1. The Creation of the World.[5] 2. The Fall.[5] 3. Noah. 4. Abraham's journey to Egypt.[5] 5. Isaac's marriage. 6. Jacob and Esau. 7. Moses' birth and flight.[5] 8. Moses at Horeb. 9. The Exodus from Egypt.[5] 10. The giving of the Law.[5] 11. The Golden Calf. 12. Moses' death. Joshua. 13. Ruth.[5] 14. Hannah and Samuel.[5] 15. Saul becomes King. 16. David and Goliath. 17. David becomes King. 18. Birth of John the Baptist. 19. The birth of Jesus.[6] 20. The Wise Men from the East.[6] 21. The Baptism of Jesus.[5] 22. The Centurion of Capernaum. 23. Bethesda. 24. Peter fishing. 25. The storm on the Sea of Galilee.[5] 26. The ten lepers. 27. The Prodigal Son. 28. The Rich Man and Lazarus. 29. The unfaithful Steward. 30. Jesus' entry into Jerusalem. 31 Jesus in Gethsemane. 32. Jesus before Annas. 33. Jesus before Pilate. 34. Jesus' death and burial.[5] 35. Jesus' Resurrection.[5] 36. Jesus' ascension to Heaven.

Reviewing the above, it will be seen that many of the lessons refer to *both* the previous ones, and others to the one of the preceding class. This system is followed throughout. It is known as "Wiederholung" (recapitulation); but it is a recapitulation with development, and thus is well calculated to ensure thorough acquirement of the material of instruction. In

[1] The lessons in Classes VII and VIII last generally from 30–40 minutes only, not one hour as the other lessons.
[2] Wilhelm Brummer, Dresden, 1900.
[3] The passage in brackets is from the German (Luther's) Bible; the English translation is not followed.
[4] It will be noticed that these items are included in the preceding programme.
[5] These items are included in the preceding programme.
[6] These items are included in *both* the preceding programmes.

In the *5th Class* there are two hours of biblical history, and one hour of catechism per week. The Ten Commandments are treated, special stress being laid upon what is commanded, while what is forbidden is but briefly referred to, since it is held that if one has learnt to love the good, the evil can easily be avoided.

In the *4th Class*, the relation of the Old Testament history to the New Testament history—"history of redemption" (Heilsgeschichte)—is pointed out, and short geographical sketches of Palestine at the time of Christ are given.

To the catechism two hours are now given per week, as well as two hours to biblical history.

The *3rd Class* is much the same. In the *2nd Class* a short introduction concerning the origin, value, character, translation, and division of Holy Scripture is given.

In the *1st Class* the teaching refers to modern "atheism" (Gottesleugnung), materialism, etc.; to "the superstitions of the present time, spiritism" (von Aberglauben der Gegenwart, Spiritismus); to the sacred observance of an oath; the maintenance of the Sabbath; the relations of masters, servants, authorities; to our duties to the sick; to purity in word and deed; to property; to truthfulness in public matters; to contentment and gratitude; and to the extension of Christianity, etc., etc.

Such a scheme of religious teaching presupposes that all participants are Protestant (the programme is, as said, from the Lutheran evangelical schools), and could not be adopted in mixed schools; at least, in so far as the catechism is concerned.

Although what has preceded is not in any way exhaustive, it will give a fair picture of the religious element in the teaching of the Lutheran schools.

6. *German, i.e.*, the mother-tongue.—The aim here is twofold, viz.:—

(a) To accustom the children to an accurate use of the spoken and written language.
(b) To achieve this end by attention to speaking (observation, repetition, elocution), to reading (literature), and to writing (orthography, grammar, composition, etc.).

The instruction is classified as

A. (i) Intuitional instruction.
A. (ii) Recitation.
A. (iii) Exercises in speaking (elocution).
B. Reading; and
C. Writing.

The object of the intuitional instruction is to make the perceptions of the children clear—to regulate and extend them, so that their power of expressing themselves shall be well-developed, to the end that they may learn to speak thoughtfully and to think accurately. In treating each subject, endeavour is made to ascertain the range of the children's perceptions, touching but briefly on matters that are unessential, or are already known, but making the pupils grasp new matter through clear, short sentences. The importance of leading them to make direct observations and to freely express their own thoughts is strongly accentuated. The *dispositions* of the children should be developed, it is held, by referring their attention to the beauties and adaptations of Nature and natural objects, and by the employment of suitable anecdotes, fables, stories, verses, etc., with a view to impressing the matter on the perception and memory.

In the *8th Class*, in which there are 4 lessons of 40 minutes each, the preliminary exercises are:—

(a) Calling the Christian and surname; place of residence; holding up the right and left hands; indicating various directions, such as above, below, before, behind; pointing out and giving the names of various things about the room; and so on.
(b) Conversations restricted to the most important phænomena of the particular season of the year. Stress is *not* laid upon the *quantity* of the instruction given, but only upon the *thoroughness* of the treatment from the standpoint of instruction in the language. While it is left absolutely to the teacher to replace it by any other he may think fit, the following programme is officially recommended:—

Spring: 1. The daisy. 2. The tulip. 3. The cherry. 4. The bird-nest. 5. The lamb.
Summer: 6. The bee. 7. The butterfly. 8. The whortleberry. 9. The meadow. 10. The fish. 11. The garden. 12. The field.
Autumn: 13. The apple. 14. The forest. 15. The hare. 16. The village. 17. The horse. 18. The Cow.
Winter: 19. The dwelling-house. 20. The house dog. 21. The cat. 22. The clock. 23. Water. 24. The human body.

In connection with these lessons, simple things are to be drawn by the children, or parts of more difficult ones are to be sketched.

In the *7th Class* the lessons are of the same duration. Noteworthy actual physical bodies, their living forms, their significance for us, are to constitute the special material for consideration; and, in order to develope the faculty of comparison, attention is to be drawn to their points of similarity and difference. The sentences used must be continually developed, as regards richness of content and definitiveness. Thus, for example, the exercises in the mother-tongue are required to illustrate the mandatory and questioning forms, and should include two prominent ideas, etc.

The instruction is made illustrative of the season of the year, as before; thus, the following is the programme:—

Spring: 1. The Spring. 2. The apple-tree. 3. The violet. 4. The cockchafer. 5. Daisy and larch. 6. The sheep. 7. The cuckoo. 8. Garden and field. 9. Meadow and forest.
Summer: 10. Summer. 11. The cock. 12. Bee and butterfly. 13. Horse and cow. 14. Dog and cat. 15. The storm. 16. Water. 17. Rye. 18. Miller and baker.
Autumn: 19. The Autumn. 20. Fruit. 21. The stork. 22. Hunter and fisher. 23. Stonemason and carpenter. 24. Joiner and smith. 25. Hill and valley. 26. Moon and stars. 27. The seasons.
Winter: 28. Winter. 29. Christmas-time. 30. Snow and ice. 31. Birds in winter. 32. The dwelling-house. 33. The family. 34. The human body. 35. Food and clothing. 36. The clock.

It will be observed that, as in the case of biblical history, there is *repetition of a number of the* subjects. This also was indicated as a characteristic feature in the programmes of Switzerland in regard to the object-lessons (leçons des choses). These object-lessons, treated so as to be lessons in the mother-tongue, are a feature in European teaching (see the Swiss programmes). They are by no means identically drafted in different schools, as will appear from the following programme from the Prussian schools, quoted by Mr. Field, before referred to.

EASTER TO HARVEST.

First Year.	*Second Year.*
1. The Schoolroom and its Furniture.	1. Same subject.
2. Materials used in the school.	2. Spring.
3. The Dwelling-house.	3. Marsh Marigold.
4. The Sitting-room.	4. The Blind Nettle.
5. The Kitchen.	5. The Cuckoo.
6. Cellar and Rooms.	6. Cockchafer.
7. The Cat.	7. Boy and Bird's Nest.
8. The Mouse.	8. House-building.
9. Farm Buildings.	9. Wayfarer and Lark.
10. The Stork.	10. The Summer.
11. The Farmyard.	11. The Harvest.

HARVEST TO MICHAELMAS.

First Year.	*Second Year.*
12. Pug and Spitz.	12. The Corn Flower
13. The Garden.	13. Gardening.
14. The Arbour.	14. The Butterfly.
15. Fruit Trees.	15. The Swallow.
16. Flowers.	16. Birds and Owl.
17. Vegetables.	17. The Frog.
18. The Village.	18. Fishes.
19. The Peasant.	19. Bees.

MICHAELMAS TO CHRISTMAS.

First Year.	*Second Year.*
20. Mare and Foal.	20. Harvest.
21. The Goat.	21. The Fruit Harvest.
22. The Cow.	22. Shepherd and Flock.
23. The Sheep.	23. Dog and Goat.
24. Chickens.	24. Dog and Children.
25. Doves.	25. The Potato Harvest.
26. Ducks and Geese.	26. Vineyard.
27. The Swan.	27. The Peasant and the Tilling of the Land.
28. Church and Tower.	28. Fox and Duck.
29. Rivers, Bridges, and Ships.	29. The Donkey.
30. The Mill.	30. Winter.
31. Water and Fishing.	31. The Fir Tree and Christmas.

CHRISTMAS TO EASTER.

First Year.	*Second Year.*
32. The Raven.	32. The Boat.
33. The Forest.	33. Hare and Sportsman.
34. The Wild Animals of the Forest.	34. The Woodpecker.
35. Forest Trees.	35. The Wood-cutter, and the Uses of Wood.
36. The Town.	36. The Squirrel.
37. The Yearly Market.	37. Snow and Ice.
38. Various Artizans.	38. Sliding and Skating.
39. The Bear.	39. The Snow Man.
40. The Elephant.	40. Horse and Sparrow.
41. The Lion.	41. Child and Ox.
42. Threshing.	42. The Railway.

The theory of such lessons is that they serve a triple purpose, viz.:—

(i) They awaken the perceptions of children to their surroundings.
(ii) They develope ideas, and the faculty of observation, and they arouse interest.
(iii) They reinforce and train the power of expression in language, so that the children can give an account of their thoughts and ideas. They further maintain the unity of education—*i.e.*, reading—and the learning of the mother-tongue is not dissociated from other instruction. This will more fully appear as the programme is more thoroughly studied, and as the later parts come under notice.

In order to appreciate the interest and value of such lessons, one has to bear in mind the thorough education of the teacher during his professional training, and that his literary ability is generally equal to an excellent presentation of the subject matter of his lessons.

7. *Recitation.*—In the middle and upper classes the recitation of selected pieces of prose and poetry serve to impress the literary material on the minds of the children. The treatment is as follows:—

(a) The selected pieces are first read, and are then so thoroughly analysed that, without special effort or waste of time, the children understand and learn them.
(b) In classes VI–IV special attention is paid to the marks of punctuation, but in classes III–I stress is laid upon impressive and thoughtful reading.

(c)

(c) Every care is taken to ensure good enunciation of vowels and consonants, and particularly of the mutes (p, b, t, d). Accurate discrimination between accented and unaccented (long and short) syllables has to be attended to, the common defects of speaking and the so-called school-reading tone (Schulleseton) being avoided.

(d) Every piece learnt is repeated at least once by the whole class, so that the children may become accustomed to uniformity in speaking, and that errors may be readily observed.

(e) Such class has to learn yearly four pieces of poetry, and two of prose.

8. *Speaking.*—Exercises in speaking are a feature worthy of note, but for these there are not set times. The whole object of these exercises is to accustom the children to the oral expression of their own thoughts and experiences. While it is held to be sufficient in the lower class for the pupil to simply answer, in the upper classes it is regarded as desirable for him to give connected and original replies, expressing his own views and experience upon matters treated of and learnt. Exercises in oral redaction of a short piece read is recommended, or the pith of a sentence is required to be expressed in terse and definite language.

9. *Reading.*—(B) Conversation, after reading concerning any subject, is required to be brief, and attention to mere details is deemed unnecessary; the logical relationships and fundamental ideas are regarded as *most important.*

In the case of the middle and upper classes, the following treatment of the reading of the lessons is recommended :—

(*a*) After some preliminary questions, the piece selected is to be read aloud, and then the reading is repeated, once or several times, the childrens' attention being drawn to difficult word-forms.

(*b*) At the beginning of the next lesson the teacher is to endeavour to test the industry of the children at their own homes, by their ability to spell or write the more difficult words, and to answer questions as to the form and content of the words.

(*c*) The lessons are read a sentence at a time, faults in reading being carefully noted and corrected.

(*d*) After a short explanation, the character of which is comprehensive rather than descriptive, the class reads together. In doing this, special attention is paid to commencing altogether, to good expression, to a sharp distinction being made between unaccented and accented, short and long syllables, to the marks of punctuation.

In the *3rd Class*, selections giving some ideas of the life and labours of the greatest German poets are read.

In the *8th Class*, there are ten half-hour lessons per week, and similarly in the *7th Class*. It may be noted that the children in this latter are asked to point out the nouns, verbs, and adjectives in the reading lessons. They are also taught the Latin alphabet and accustomed to its use.

In the *6th Class*, four hours weekly are given to the reading lessons. The principal clauses are sought out, and recast in the interrogative mandatory forms, and form of request. They are also, where possible, cast in the past, present, and future tenses, and anecdotes are retold in the first, second or third person of the singular or plural. The comparison of the adjectives in the lessons are also undertaken.

In the *5th Class*, only three hours weekly are devoted to the reading lessons, special attention being paid to reading simultaneously. The analysis of the sentence is more developed, and the "parts of speech" and inflexions of the words. The exercises in varying any account in respect of tenses, persons, and method of statement are much more developed.

In the *4th Class*, the reading lesson is again reduced one hour (two hours), and it aims at more perfect elocution, which is very good in German schools. In grammar, the number and case of substantives, the persons and tenses of the verbs, and the prepositions are studied.

In the *3rd*, *2nd*, and *1st Classes*, the lessons are two hours per week. Analysis is more developed, the kinds of clauses being fully described, in the *3rd Class*. In the two highest classes it is endeavoured to overcome all mechanical difficulty in regard to good expression, and the children are exercised in reading aloud in a fluent and expressive manner, but *without the introduction of an artificial style*, or a style unnatural to children. The logical review of the reading and grammar is still more advanced. In the final year regard is had to what is called "Realstoffe" or "Realien," the reading selections furnishing the required material.

10. *Writing.*—Children are taught to write in both the German and the Latin script forms. The general aim of the writing lessons is to educate the children in the proper use of the written language. It is required that the lessons shall acquaint the children with the German vocabulary and grammar, bring to their consciousness the rules governing the use of the language, and develope in this way a literary appreciation thereof (das Sprachgefühl zu entwickeln). The rules are put in the briefest possible form and restricted to essentials, and may be given explicitly, or implicitly (*i.e.*, by way of examples). The written forms of letters, etc., are made with extreme care on the blackboard, and writing from dictations is carefully corrected. From the outset, great attention is paid to the education of the children in the power of expression; and they are required to write out their own thoughts upon subjects taken from the range of things which come under their direct observation.

The writing lesson is thus divided, as it were, into three sections, viz :—

(1) Grammar, in the wider sense (Sprachlehre).
(2) Writing, in the ordinary sense.
(3) Composition.

These lessons start, with the exception of the last, even in the *8th Class*. Words are divided into syllables, and these into letters. The nouns and articles are written out. Single words and little phrases are dictated or written upon the blackboard. This class has not yet exercises in composition, but the children learn to write the large and small letters of the German alphabet.

The treatment may be illustrated by following these three divisions through the several classes from the 7th upward.

11. *Grammar.*—In this subject the development is as follows:—

7th Class.—The simple sentence and its parts; singular and plural of the substantive. The three genders. The definite article. The composition of a sentence. Its substantive, adjective, and verb. Word-formation (Wortbildung).[1] The diminutive affixes. Vowel modification.

6th Class.—The four forms of a simple sentence, viz., the declaratory, interrogatory, volitional and mandatory.[1] The subject. The personal pronouns in the singular and plural. The predicate. The verb in the present and past tenses, and its future. The auxiliaries. The development of the passive forms of verbs. The adjective and its comparison. Compound word-building, compound substantives. Prefixes, affixes, and stems of words. Vowel-modification.

5th Class.—The extended simple sentence. The extensions. The substantive, its singular and plural in the four cases. Possessive and demonstrative pronouns. Some of the prepositions. Word-building. Recapitulation and extension of the work in the previous class. Word-families.

4th Class.—Recapitulation and extension of preceding work. Declination and conjugation. Transitive and intransitive verbs. The adverb. The preposition, with examples. Word-building and families of words.

3rd Class.—The compound sentence. Conjunctions. Cases governed by various verbs. The propositions. Subordinate clauses, etc.

2nd Class.—Analysis is much more developed in this class. The combining and extension of clauses. The conjunctions. The subordinate clause. Adverbial clauses (place, time, manner). The verb. Direct and indirect statement.

1st Class.—In the first class the more difficult elements and the intricacies of the German language are dealt with, and the grammar and analysis, etc., completed.

One hour a week is devoted to the study of grammar from the Seventh Class to the First.

12. *Writing.*—An hour a week in all the classes from the Seventh to the First is given to the subject of writing. This includes dictation, involving an appreciation of the difference between words of the same sound (*e.g.* das und dass, etc.) A large number of foreign words are introduced, and the material so selected that the matter shall throughout be of high educational value.

13. *Composition.*—Composition is taught almost from the beginning in the Seventh Class; the children commence with little sentences from the reading books, and exercises founded thereupon. In the Sixth Class, short stories from the reading-books are required to be reproduced in the simplest possible form. In the Fifth Class, besides other work, an essay has to be produced every second week. Up to this point one hour a week is given to this work; in the Fourth Class, two hours a week are given to composition, instruction being given in regard to the forms of letter-writing. The children are required to express sentences in various ways and in such a manner as to bring out as far as possible their own ideas.

In the Third Class, narratives are required to be cast in various forms; for example, that of direct relation, of description, of comparison, and in the form of an ordinary letter.

In the Second Class, descriptions, narratives, letters, comparative studies, and sketches from the larger reading-lessons are required.

In the First Class the compositions relate mainly to business in the case of the girls; in the case of the boys they relate to matters concerning the continuation schools. In the upper classes, essays are written in regard to the following:—

Descriptive.—Animals, plants, minerals, artificial bodies, buildings and localities. Occurrences, occupations, natural events, character.

Comparative.—Animals, plants, minerals, occurrences, people. Manners and customs.

Typical letters are also written on the following lines:—

Letters.—Family news, requests, congratulations, letters of thanks, invitations, inquiries, appointments, letters of apology, letters of advice, reminders, offers, recommendations, notifications.

Business letters, etc.—Accounts, receipts, bonds, disclaimers, testimonials, returns to the administrative authorities, advertisements, leases, etc., etc.

It will be recognised that this preceding instruction in the mother-tongue is well developed, and is not only educative, but has also the merit of being thoroughly practical, and eminently useful.

14. *Computation, or arithmetic.*—According to the official programme, the aim of the arithmetical instruction in the folk-schools is to sharpen the understanding of the children in regard to dealing with the most important problems concerning numerical magnitudes and their relationships, so that they may become expert in deducing correct conclusions and accurately dealing with such arithmetical questions as present themselves in daily life. Great weight is assigned to the power to form an independent, but well-founded judgment on arithmetical matters touching business or commerce, and to be able to solve such questions speedily and with the confidence of certain accuracy.

In every class, the endeavour is to qualify the children to solve all kinds of arithmetical calculations by reference to first principles and by comprehensive and many-sided practice. Mental and written work are developed together, and it is required that no calculation should be written out, unless too difficult to be done mentally or unless the mental solution would involve too great a loss of time. Great stress is laid upon the necessity for the solution being independent, and resolved by the pupil himself from first principles. It is not sufficient, according to the German view, to teach arbitrary rules. From the beginning the work is rational, not empirical.

It is required that, as a rule, computation on the blackboard should be done by the children themselves. Frequent repetition of the arithmetical work from the beginning up to the last point attained is regarded as of great service, and it is customary to spend the first fifteen minutes of every lesson-hour in recapitulation of this kind, covering both the mental and written work.

Exercises

[1] These exercises are specially necessary in the German language.

Exercises connected with arithmetical instruction are intended rather as *home-work* than as appropriate for the lesson-hour. The written work, in connection with various operations in arithmetic, is done in the form indicated in the arithmetic book for folk-schools (Rechenbuche für Volksschulen). The work in the several classes is approximately as follows:—

8th Class.—Arithmetic commences in this class with 8 lessons of 30 minutes each per week. The numbers from 1 to 10 under are used in the four operations. The abacus and also the blackboard are used. Quickness is obtained by swiftly moving the numbers forward and backward on the abacus. Instead of treating the four elementary operations in succession, they are treated as far as possible simultaneously; thus, division and subtraction are taught together, and multiplication is taught with division. For example:—

$6-4 = 2$, consequently $4 + 2 = 6$; or
$6-3 = 3$, consequently $3 \times 2 = 6$; and so on.

The numeral figures are learnt at the same time as the corresponding numbers (of objects) are shewn to the children and named, so that they at once connect the three things in memory, viz., the concrete numbers, the word defining it, and the numeral used to describe it.

7th Class.—In this class, in which there are 6 lessons of 40 minutes each per week, the four operations of arithmetic are again treated, but with a series of numbers now extended from 1 to 100. The multiplier and divisor, however, are restricted so as never to exceed five. Series of exercises are employed involving the four operations in any order; but the children are not taught first addition, and exercised therein; then subtraction, multiplication, and division in succession. This is regarded, and rightly so, as bad methodology.

6th Class.—A small multiplication table is used in this class. In the second half-year the series of numbers are extended to 1,000, with written work (addition and subtraction) up to that limit. Oral, *i.e.*, mental calculation, is restricted to numbers beneath 100. Questions on money and on linear, superficial and volumetric measures are introduced.

5th Class.—In this class the lessons are 4 hours weekly. Multiplication and division are extended to include the series of numbers of from 1 to 1,000, and in the second half-year from 1 to 100,000. Although the four operations are undertaken, multipliers and divisors are limited to three figures. Tedious sums of many figures are not in high repute, as they do not necessarily extend in any way the thinking power. For mental calculation the limit is 300. Exercises in numeration and in notation up to four digits are a minor feature of the work.

4th Class.—Coinage, measures of length, surface, volume, and weight, of number and time, are now treated. In order that the children's ideas shall be concrete and realistic, measures and weights are to be shown by models, and are to be practically applied—that is to say, they have actual exercises in measuring (Messübungen). Mere recitation of measures do not create any real idea as to what is meant by, say, a gramme or a kilogramme, a centimetre or metre. The children in this class learn 1, 2, and 3 place decimals, and their idea of numeration and notation extended to the infinite series of numbers. The four operations are treated with special reference to decimals.

3rd Class.—The same time, viz., 4 hours weekly, are given to arithmetic. The four operations now embrace decimal numbers and ordinary fractions, the most difficult of the problems being steadily developed.

Up to this point the course is uniform for both boys and girls; but in the two highest classes (2nd and 1st) only 3 hours are given to the girls, instead of 4 hours as for the boys.

2nd Class.—Fractions are now more fully dealt with; simple calculations of prices, the examples being taken from ordinary commercial life, are introduced, and abbreviated forms of calculations explained. In the second half-year questions on the rules of interest and questions on interest and discount are given. These are both oral and written, and cases are considered where the capital, the interest, and the time are the *quæsita*. In the girls' classes the work is much the same, and calls for no special comment.

1st Class.—The principal problems for this class are the calculation of percentages and applications to questions of interest, discount, and alligation. Commercial reckoning, the making up of current accounts, etc., in the easiest and simplest cases, the solution of questions of exchange of German money for those of other countries (francs, dollars, and pounds sterling); questions of percentage, rebates, and recapitulation of the whole of the work.

For girls, the calculation of percentages may be restricted to questions on interest, rebates, and accounts.

15. *Geometry* (Formenlehre).—The instruction in geometry—the theory of form—is intended to awaken and educate the geometric consciousness (Formensinn), to sharpen the understanding of the scholars in respect of the simple laws and rules of geometry, and to equip them so that they will be able to represent and calculate the numerous cases in practical life in which question of spatial magnitudes occur. The aim, therefore, is largely practical, but is educational also.

The instruction commences by *direct observation*, and the principles are deduced from observation, measurement, and comparison. The practical application of acquired principles to the surroundings and range of experience of the pupil is deemed to be primarily more important than abstract geometrical demonstration, which it is held should be introduced only in the easiest cases, especially at first. Geometry in this way is made of greater interest and of greater utility. The pupils are expected to acquire individually some dexterity in the use of the ruler, compass, and drawing-pen, and in all classes industriously to accustom themselves to their use in the construction of geometrical figures and forms. The instruction in geometry does not commence until the third class is reached, where the programme is as outlined hereunder:—

3rd Class (one hour per week).—Development of fundamental geometrical conceptions: Solid, surface, line, point, and so on. *Lines*:—Straight, curved, perpendicular, horizontal, oblique, divergent, convergent, parallel; their measurement and division; measures of length.

Angles:—

Angles:—Vertex, sides, right-angle, acute, obtuse. Division into degrees and the measurement of an angle. Adjacent, vertical, and opposite angles. Inner and outer alternate angles. The drawing of simple linear figures.

2nd Class.—(Two hours weekly). The triangle. Divisions according to sides and angles. Easy exercises in construction. The quadrilateral. Various kinds of quadrilaterals. Calculations of quadrilaterals and triangles. Their areas. The regular polygons and their computation. The circle and its circumference. Diameter and radius. Circular sector and segment. Concentric and excentric circles. Easy exercises in construction, involving the theory of triangles, quadrilaterals, polygons, and circles. The drawing of linear figures, circles, and typical surfaces.

1st Class.—(Two hours weekly, together with one hour for geometrical drawing—three hours in all.) The congruence of triangles. The right-angled triangle. The theorem of Pythagoras. Application of the same. Square root. The similarity of triangles. Geometrical proportion. Reduced scales.

The *Circle:*—Calculation of the circumference and the area of a circle. The ellipse and oval. The cube. Surface and volume. Weight.

The prism, pyramid, cylinder, cone, and sphere. Simple magnitudes and calculations of contents; the examples to be drawn as far as possible from the affairs of daily life. Calculations of stone-work, of columns, of logs of wood, and so on. The simple geometrical bodies are to be drawn upon cartridge paper, and models formed in that way.

Geometrical drawing. Symmetrical figures. Typical surfaces with straight lines, and with curved and mixed lines. The recapitulation of one and the same motive is to be restricted as much as possible to the one page in the drawing-book.

16. *Geography.*—The teaching in geography is very thorough, and in this subject two hours a week are devoted from the seventh class to the first. The German conception of the proper scheme of teaching is outlined in Chapter XXIV, sections 8 and 9. It is much the same throughout Germany, and a reference to the chapter referred to, in which the detailed programmes are outlined, will sufficiently illustrate it. Perhaps it will here suffice to give a mere indication of its main features.

Geography commences throughout Europe with what is known in Germany as "Heimatskunde," that is, geography and general information regarding one's own locality. Its first step is to bring home to the minds of the children such geographical and morphological facts as the features of the district will allow to be illustrated. The aim of this is to awaken the attention of the children to the real facts, that their initial conceptions may be justly formed.

Pictures are used to make good local limitations, so that while the morphology of the subject is realistically grasped it is also extended beyond local limitations.

The children then learn all about the relative positions of the various places in the locality that are interesting in virtue of their natural beauty, or because of their history, or their association with industry or commerce.

The boundaries of the child's knowledge are extended from its own town and district to the narrower fatherland, *i.e.*, one's own kingdom or province, and from that to the greater fatherland, the German Empire. From the empire the outlook is extended to the whole world, stress being laid upon the relationships of its various parts to the industry and commerce and the colonising of the German people. The subject is treated on broad lines, natural and general history, physical, industrial, political, and mathematical geography being all fused together in the teaching. Finally, the view is carried to our place in the solar system—that is to say, the geography concludes with cosmography. A feature of the teaching is the organising of excursions (see the chapter on geography).

Geography, as taught in German schools, is realistic, and is interesting; it is humanistic in its tendency in virtue of its relation to history; it is scientific through being connected with the natural sciences, *i.e.*, with physics, meteorology, geology, etc.; it is designed on the one hand to make the child intelligent as regards his own surroundings and his own country, and to liberalise him by giving him realistic ideas of the world generally by a normal process of extending his conceptions.

Properly taught, geography is not only very educative, it is also of deep interest, and German schools are splendidly equipped for its teaching.

17. *History.*—In the teaching of history in the folk-school, the principal occurrences in the development of the human race, and especially of the German people, are pourtrayed in a series of bold sketches. These are so designed that the children will not merely look upon the past as a question of mere history; but their moral nature and will are to be aroused. Examples of patriotism, of faith, of philanthropy, courage, and self-abnegation are to be adduced so that their spirits will be aroused, and the whole treatment aims at confirming them in the belief in "the working of Almighty God throughout human history" (das Wirken des allmächtigen Gottes in der Geschichte).

There are in reality two courses of two years each,—the first restricting itself mainly to the historical progress of particular events; the second aiming at revealing their significance in the history of civilisation and their consequences.

Ancient history and the history of foreign lands are treated but briefly, excepting where it specially concerns the history of the "Fatherland."

In regard to the scheme of teaching, it may be said that individual historical sketches are carefully prepared, and in the upper course especially their connection and interdependence is attended to. Regard is had to the fact that in our surroundings and in our speech there remain traces of earlier social organisations and of events the significance of which can be understood only by reference to their origin and development. (For example, chivalry, knights' manors, nobility, etc.).

The matter of instruction is treated in a free but connected manner, and is illustrated by pictures, readings, references to geography, and so on, so as to intensify its reality and interest.

The instruction commences in the 4th Class, and occupies in each class two hours weekly, with the exception of the 4th Class itself, in which the girls have but one hour weekly. The programme is developed pretty much as exhibited hereunder.

4th Class.—The historical instruction in this class is confined to German history, and has special regard to Saxon history up to the commencement of the Reformation. The detailed development is as follows:—

(1) The most important of the German myths.
(2) The old German people in house and family.
(3) Hermann, the Deliverer of Germany.
(4) The conversion of the German people to Christianity.
(5) Charlemagne, 800. The administration of the Kingdom. War. Saxony.
(6) Henry I. City-building. The Mark of Meissen, 928. The War with Hungary, 993.
(7) Konrad of Wettin, 1123. Otto the Rich. Henry the Illustrious.
(8) Knights, monks, and citizens in the Middle Ages.
(9) Inventions and discoveries in the Middle Ages. Gunpowder. The art of printing. America, 1492.
(10) Huss, 1415. The War of the Hussites. Frederick the Valiant.
(11) Frederick the Mild. Division of Saxony, 1485.
(12) Luther and the Reformation, 1483–1517.

3rd Class.—In this class pictures are drawn of German and Saxon history up to the most recent times:—

(1) Charles V; his power and wars. The Reichstag (Diet) at Augsburg, 1513. Luther's death, 1546. Schmalkald.
(2) Kurfürst Moritz and Father August.
(3) The Thirty Years' War, 1618. John George I and Gustavus Adolphus.
(4) The Northern War. Charles XII and Augustus the Strong, 1706.
(5) Frederick II of Prussia. The Seven Years' War, 1756.
(6) The French Revolution, 1789.
(7) Napoleon I. Battle of Jena, 1806. The invasion of Russia.
(8) The German War for freedom. Battles of Dresden and Leipzig, 1813. Theodore Körner.
(9) The War of 1866.
(10) The War of 1870. The Emperor William, Crown Prince Albert, King John.

2nd Class.—After short reference to the civilised peoples of the Old World, sketches from German and Saxon history up to the time of the Reformation are developed on the lines previously indicated. The synopsis hereunder will give a sufficient indication:—

(1) The old civilised nations. Chinese, Indians, Egyptians, Babylonians, Jews, Greeks, and Romans, in brief review (about 20–25 hours.) Sketches of civilisation.
(2) Spread of Christianity. Migrations of people. The Papacy, 375.
(3) Islam and its spread, 622.
(4) The Merovingians, and the Carlovingians. Charles Martel. Pippin the Short, 752.
(5) Charlemagne and his house, 768, 814. Wittekind.
(6) Ludwig the German and his house, 843.
(7) Henry I and Otto the Great, 955. The Mark of Meissen, 965.
(8) Henry IV and Gregory VII. Henry of Eilenburg, 1089.
(9) The Crusades, 1095. Godfrey of Bouillon. Conrad of Wettin.
(10) Frederick Barbarossa. Henry the Lion, 1176.
(11) Rudolph of Hapsburg and his successor. The liberation of Switzerland, 1308. The Right of Might and the Holy Vehm. Frederick (der Gebissene).
(12) The inventions and discoveries of the Middle Ages. Gutenberg. Schwarz. Vasco da Gama. Columbus. City-building of these times.
(13) Wyclif and Huss, 1415. War of the Hussites. Sigismund.
(14) Maxmillian I and his house. Post. Public peace. The Supreme Court, 1495.
(15) Luther at the Reichstag (Diet) of Augsburg, 1513.

1st Class.—In this class sketches of German history, from the time of the Reformation to the most recent times, are given. These include references to foreign countries, and of the progress of civilisation. The development is approximately as follows:—

(1) The extension and struggle of the Reformation in Germany, 1540–47–52. In Switzerland, Zwingli and Calvin. In France, in Sweden (Gustav Wasa). In England, Henry VIII, Elizabeth.
(2) The Thirty Years' War and its consequences. Sketch of Germany before and after the war.
(3) Louis XIV of France; his palace. The predatory war. The great Kurfürst. Strasburg, 1681. The Spanish War of Succession.
(4) Peter the Great of Russia. His work of Reform. The Northern War. Charles XII. Augustus the Strong.
(5) Frederick II of Prussia in War and Peace.
(6) The North American War of Independence. Washington and Franklin.
(7) The French Revolution. Louis XVI, 1792. Napoleon in Egypt and Italy.
(8) Germany's deepest humiliation, 1806–12. Queen Louisa.
(9) Germany's restoration, 1813, 1815, 1831. Inclusion of Saxony, 1848, 1864, and 1870.
(10) Review of the European States at the present time.

Brief as is the above outline, it is sufficient to shew that the teaching of history is vastly better developed in Germany than it is with us; in fact, it is not too much to say that the teaching of history is in our case quite inadequate. The solidarity of a people depends very largely upon national feeling, and, at least until peace is better assured, national and universal history ought to be seriously taught. In this connection it may be said that the comprehensiveness of the German scheme of historical teaching is worthy

worthy of remark. It is clearly designed to reinforce feelings of patriotism as well as to develope mental breadth. Conversation with any ordinarily intelligent German, or indeed any European, will satisfy one that the historic sense is more finely developed in the people of Europe, than with us, and their feelings of patriotism, if not stronger, are more intelligent than in countries where history is relatively neglected

18. *Natural history.*—The teaching of natural history in the German elementary school has for its object the communication of a knowledge and understanding of nature, in all its beauty and adaptability. This is effected through a consideration of the most important natural bodies of the three kingdoms, and by intelligent observation of organic life. In order that the teaching may be thoroughly efficient, special stress is laid upon the following matters, viz.:—

(*a*) Every child must learn to cultivate the habit of observing for himself the natural things and natural events and occurrences surrounding him.
(*b*) Simple forms and characteristic elements must be brought to the mind of the child at first by direct perception, and later by reflexion in regard thereto.
(*c*) Special attention must be paid to the development of organic bodies. Appropriate plants and animals arranged according to their position in development, ought to be observed in the school-room itself; on the contrary the making of collections of plant coleoptera, lepidoptera, etc., by the children themselves on behalf of the school should not be encouraged. The point here is that it is possible to waste time in this way, and even fail to recognise far weightier facts in zoology, etc.
(*d*) The material selection is required to tend towards the practical rather than to the purely scientific point of view. The main outlines of the whole system are to be taught in the higher classes.

The work commences in the 5th class. The development of the subject is as follows:—

5th Class.—(Boys two hours, and girls one hour per week). The consideration and observation of natural bodies in their immediate neighbourhood is the leading idea of this work.

(1) The meadow—(*a*) Buttercup, primrose, dandelion, (Löwenzahn); (*b*) Sheep, stork, frog; (*c*) Loam and clay.
(2) The corn-field—(*a*) Rye, wheat, flax; (*b*) Horse, house-pigeon, mouse; (*c*) Chalk.
(3) Orchard—(*a*) Cherry-tree, apple-tree, raspberry; (*b*) Sparrow, cockchafer, hedge-hog; (*c*) Quartz, sand.
(4) The flower and kitcher-garden—(*a*) Beans, elderberry, cistus; (*b*) Tree-frog, housefly, garden spider.
(5) The harvest-field—(*a*) Oats, pea, corn-cockle; (*b*) Cattle, hare, lark.
(6) The lake—(*a*) Willow, alder; (*b*) Duck, carp, lizard.
(7) The margin of the forest—(*a*) The strawberry, broom, thorn-apple; (*b*) Fox, hawk, ringed snake.
(8) The forest—(*a*) Pines, firs; (*b*) Stag, woodpecker.

4th Class.—In this class the work of the previous one is extended, and careful comparisons are made between similar plants and similar animals.

(1) The cornfield—(*a*) Rape, potatoes, clover; (*b*) Mole, owl, crow.
(2) The meadow—(*a*) Bluebell. Lychnis. (Corn-cockle?). Chrysanthemum; (*b*) Goat, swallow, midge.
(3) Flower-garden—(*a*) Rose, lily, carnation; (*b*) Toad, snail, earth-worm.
(4) The fruit-garden—(*a*) Gooseberry, pear-tree, plum-tree; (*b*) Chaffinch, the bee.
(5) The vegetable garden—(*a*) Carrot, cucumber, bean; (*b*) Rabbit, ant.
(6) The harvest field—(*a*) Barley, corn-flower, poppy; (*b*) Dog, quail, grasshopper.
(7) The farm—(*a*) Walnut, poplar, lime-tree (Linden); (*b*) Hen, peacock, polecat, rat, bat; (*c*) Iron.
(8) The lake—(*a*) Cotton-grass; (*b*) Otter, goose, crayfish, shell-fish; (*c*) Peat.
(9) The margin of the forest—(*a*) Larch, oak, beech; (*b*) Robin, viper, stag-beetle.
(10) In the forest—(*a*) Heath. Yellow boletus (fungus). Whortleberry; (*b*) Pine-marten, squirrel, snake.

3rd Class.—In this class the most important families of the plant and animal kingdoms are considered till the Christmas vacation. In the last quarter the most important minerals are referred to. Besides this a brief recapitulation of the work done in Classes V and IV is made. The programe discusses the following:—

(*a*) Summer stock, tea-plant, violet, vine, coffee, olive, tobacco, cinnamon, birch, hop, maize, rice, sugar-cane, cane, cocoanut, date-palm, toadstool, etc. (30 hours.)
(*b*) Chimpanzee, badger, cat, beaver, elephant, camel, whale, humming-bird, ostrich, chamæleon, crocodile, boa-constrictor. Shark, herring, shell-fish, eel, bed-bug, fox, silkworm. Tænia, tape-worm, oyster, trichina spiralis, coral. (34 hours.)
(*c*) Peat, brown coal, coal, asphalt, petroleum, amber, gold, silver, lead, iron, copper, nickel, chalk, gypsum, common salt, saltpetre, some of the precious stones.

The exchange of any other objects belonging to the same family as those in above indicated list is not only permitted but strongly recommended, especially should the existing collections admit of this being done with advantage. The principal families and orders of plants and animals are those to which it is most important to refer. The fundamental principle to be always applied, is that the *number* of objects is of less importance than thorough treatment; for the "how" of natural science is of far greater moment than the "why." (denn das "Wie" der naturwissenschaftlichen Betrachtung ist viel wichtiger als das "Was.")

2nd Class.—Special attention is paid in this class to the structure of the several organs of the human body, one of the objects of the instruction being to give some idea of the rules of life and laws of hygiene.

(1) The skeleton—the muscles and tendons; care of the same. Deformities. Gymnastics.
(2) The digestive organs. Care of the teeth. Eating and drinking. Food and its value. Diet.

(3) The breathing organs and the circulation of the blood. The significance of fresh air. The treatment of the drowned. Artificial breathing. Method of preventing loss of blood.
(4) The brain and nervous system. Care of the same; sleep, the motory and sensory organs.
(5) Human skin and its structure. Care of the skin; washing and bathing; care of the hair; and so on.
(6) The eyes and their care. Sight; shortsightedness; farsightedness; foreign bodies in the eyes.
(7) The ear and its care. Diseases of the ear. The phænomena of hearing.
(8) The nose and tongue.
(9) Dwellings and clothing.
(10) Prophylaxis and care of the sick; of unfortunate and helpless human beings; special directions to girls in regard to the care of little children.

This teaching is intensely practical and aims at giving the children an intelligent idea of the nature of illness and of the necessity for a proper care of the vital organs and body generally. That the value of their bodily organs is very high is impressed upon them, and the value of "the blessings of health, temperance, chastity, and industry," is to be brought home to them in such a manner, as it is hoped to induce them to take proper care of themselves and not thoughtlessly injure their bodies which, they are instructed, are to be considered the "Temple of God" (Tempel Gottes).

1*st Class.*—The aim in the highest class is to quickly sketch in bold outline the principal facts in the three kingdoms of nature. The instruction is divided into four sections, viz., botany, zoology, geology, and hygiene; twelve hours being devoted to each of the first two, eight hours to the third, and ten hours to the fourth. The lessons in botany deal with generalities concerning the life, with the nutrition, and reproduction of plant-life and with generalities concerning the roots, stem, circulation, and other important parts of the plant. The illustrations are restricted to the most important cultivated plants, local or foreign.

Zoology.—In this section, the generalities of the life and development of animal-forms are treated. Special regard is paid to the principal representatives of the various orders, and attention is directed to the most important facts of the so-called lower animal world, for man.

Geology.—The various geological formations of the earth are briefly indicated: the primary, the sedimentary, and the tertiary formation, etc.

Hygiene.—In this subject the matter treated in the second class is recapitulated, orientating it specially as regards hygiene.

19. *Natural Science.*—In this subject the children are made acquainted with the active forces of nature concerned in definite phænomena, with the various combinations of the elements to form natural bodies, and with their most important changes that are ordinarily brought about.

In the development of this subject, it is regarded as of the first importance that the children should accurately observe for themselves, so that their conclusions regarding the activities of nature should be based upon direct knowledge.

In the selection of the matter of instruction daily phænomena are to be preferred so that through a knowledge of the natural laws operating therein, adverse results, errors, and superstitions may be avoided. All physical experiments made are required to be in as simple a form as possible, and so arranged that either the children shall be able to repeat them, or at least accurately describe them, and discover the principle in the action of other things. (For example, atmosphere pressure, the suction-pump, difference between suction-pump and force-pump, fire-engine, etc.).

These lessons commence in the second class, and two hours weekly are devoted to them both in this and in the first class.

2*nd Class.*—The most important sections of natural science are considered in the physical phænomena daily presenting themselves. The matter is as follows:—

(1) Equilibrium and motion of bodies. General properties of bodies. Mass and weight. The lever; balance, pulley, free fall. The inclined plane. The lever. The hydrostatic balance. The spring and brook. Swimming. The suction-pump. The fire-engine. Cohesion. Adhesion.
(2) Heat. Sources, action, and propagation of heat. The three forms of matter. The thermometer. The heating apparatus.[1] Melting, cooking, roasting. Steam power. Evaporation.
(3) Sound. Its nature, propagation, echo.
(4) Light. Source, propagation, reflection, plane mirrors.
(5) Magnetism. Action of magnets. Magnetic needles.
(6) Electricity. Excitation of electricity. Conduction. Action. The storm. Lightning conductor. Voltaic electricity. The telegraph.
(7) Some chemical elements. Oxygen. Combustion. Decomposition. Rust. The process of heating. Carbon. Illuminating gas. Carbonic acid. Common salt.
(8) Organic bodies and their importance. Albumen. Horn. Fat, oil, soap.

1*st Class.*—In this class the study of physics commenced in the second class is simply extended. A development of the programme in detail is somewhat as follows:—

(1) Centrifugal and centripetal force. The pendulum and clock. Specific weight. The acceleration of gravity. The screw. Compound pulley. Lactometer. Air-pump, barometer.
(2) Heat; the steam-engine. Celsius and Fahrenheit.
(3) Sound. The human voice. Musical instruments.
(4) Light; refraction. The lens. Telescope and microscope. Concave mirrors. The prism. The rainbow. Photography.
(5) Magnetism. Magnet, pole, magnetic inclination.
(6) Electricity. Galvanic elements. The dynamo. Electric light. Telephone.
(7) Chemical combinations. The explosive nitrogen compounds, gunpowder. Sulphur, phosphorus, sulphuric acid. Oxidation. Organic substances, and their value. Starch flower. Bread-baking. Sugar. Gum. Alcohol. Vinegar. Petroleum and its dangers. Food poisons. 20.

[1] This is elaborate in European schools, and the explanation of its action and function is of interest.

20. *Writing.*—(Schönschreiben, *i.e.*, caligraphy). Lessons in writing, according to the official programme, aims at enabling the children to acquire a clear, well-formed, and flowing style of hand-writing for German and Latin forms. The lessons begin in the 7th class, the children having in the lowest (8th) learnt the elementary forms of the script letters.

Commencing by writing on the black-board great care is taken to secure the freest possible movement of the hands. It may be mentioned here that such lessons are in some places begun even in the kindergarten.

The slope, etc., of the writing is identical for the Latin and German forms, and is inclined 55 degrees to the horizontal. The importance of good posture in regard to freedom in writing, and *as regards health* is commented upon. Since writing tends, according to the German view, to injure the eyes—and this is only too true, especially with sloping writing—it is customary to allow the children to stand for a few minutes at least once during the writing lesson, *and look at distant objects.* This is to correct the temporary induced myopia. Negligent writers are made to copy head lines.

In the 7th to the 4th Classes three hours per week are devoted to writing, in the 3rd Class two hours, and in the 2nd Class one hour.

21. *Drawing.*—The teaching of drawing in the Dresden Folkschool is not merely to train the eye and hand to execute simple, accurate, and pleasing forms, it is also to educate the pupil in such a manner as to give him readiness in those kinds of drawing likely to be useful in practical life.

On this account the children in every class are exercised in drawing natural objects, making plans or sketches, of art products, machines, and so on.

The drawing is of two kinds, freehand and geometrical.

To promote the self activity of the children, it is customary when drawing on the black-board, especially with symmetrical figures, to execute only a small part of the design, leaving the children to develope the remainder.

In all classes drawing from dictation, and also from memory is practised.

The application of colours, shading, hatching, etc., are not undertaken in the two 1st classes, but only in the 2nd and 1st. There, however, this class of work is very carefully executed as regards both elements. Throughout, the use of circle, ruler, measuring scale, or tracing is forbidden in the freehand instruction.

The detailed development is as follows :—

4th Class.—(Boys, two hours ; girls, one hour per week). Straight line in various directions, division of straight lines ; combination of them to form geometrical figures, viz., the square, rectangle, equilateral triangle, regular hexagon, octagon, and so on. For boys, ornamentation.

3rd Class.—The time occupied is the same as in the preceding class, but the work is somewhat different for the two sexes. Girls—Ornamental drawing, using straight lines, with special regard to application to patterns, stars, and any straight-lined border designs. The circle. Boys—The circle and its subdivisions, the ellipse, oval, etc.

2nd Class.—Both sexes have two hours drawing in this class. The exercises are as hereunder :—

Girls.—The ellipse, oval, spiral, the harmonic curve, and their applications in ornamentation of surfaces, special regard being paid to utility in design and patterns, etc. The most important elements of colour theory are also taught, for example—Mixing, shading, and application of colour.

Boys.—The elements of the theory of colours, further development of curved lines, including spirals, and reversed curves, and their combinations in surface ornamentation.

1st Class.—In this class the hours per week are two for girls and four for boys, and the detailed programme about as hereunder :—

Girls.—Extension of design of ornamental forms, and colouring the same. Exercise for the development of style in the design of patterns, and in sketching.

Boys.—Drawing of forms with straight and curved lines. The theory of lights and shadows. The principal laws of perspective. Copying models, mouldings, etc. Drawing of easy plaster models. Exercises for the development of style, and in the sketching easy objects. Linear drawing in connection with geometry.

It will be seen that this subject is practically orientated.

22. *Singing.*—The object of the singing lessons is stated to be the systematic training of the ear and voice to rightly appreciate and render hymns and other folk-songs (geistlicher und weltlicher Volkslieder), and to ennoble the disposition by creating a taste for fine singing. Considerable weight is attached to the morally educative value of the singing lesson.

The children are thoroughly instructed as to the importance of cultivating the voice, throughout its whole range, by exercises designed to properly effect this ; as to the importance of a right position of the body, of good attack, of care as to the position of the vocal organs, of regular breathing, of not overstraining the voice either by attempting to sing notes that are too high, or by singing too loudly, or for too long.

The verses of all songs or of hymns are read beforehand with emphasis to elucidate the meaning and give the spirit of the verse, and are explained. The children then repeat them, and at least the first verse of a song or hymn is learnt. All songs, etc., memorised are sung without the book. To ensure accurate and good execution, special exercises in tone production, enunciation, and in singing intervals, etc., are undertaken, and the series of exercises are gone through very thoroughly and industriously repeated.

The learning of the notes on the stave commences in the 5th class, and is developed from class to class. All chorals and hymns are sung in unison. From the 3rd class to the 1st folk-songs are two-part as a rule, but all the children learn the melody. Three-part singing is reserved for the choir singing lessons.

In order to develope confidence and independence, the children are to be accustomed to starting and singing through any songs that have been practised, the help of accompanying instruments (piano, violin, etc.), being dispensed with.

A feature of the singing in the German schools is the large number of hymns that are sung. The details that may be noted in regard to each class are as follow:—

8th. Class.—In this, the bottom class, no special times are appropriated for the singing lessons, but songs are sung in any intervals or at the close of the school. About five are learnt.

7th Class.—About two hymns, a series of exercises, and about four folk-songs are learnt.

6th Class.—(One hour per week). About four hymns, the exercises, and about seven songs are learnt.

5th Class.—(Boys, two hours; girls, one hour per week). Reading the stave; tone and expression exercises; six hymns and about eight songs are learnt.

4th Class.—(One hour per week). Reading the stave; tone, expression, and execution exercises; six hymns and about nine songs.

3rd Class.—(One hour class singing and one hour choir singing per week). Reading practice; exercises for tone, expression, and execution; seven hymns and ten songs; recapitulation of songs previously learnt.

2nd Class.—(Boys, two hours; girls, one hour, and one hour choir singing per week). Reading exercises, etc., as the previous class; six hymns, eight songs, and recapitulation.

1st Class.—(Boys, one hour, girls, two hours, and one hour choir singing). Tone, execution, and expression exercises; six hymns, ten songs, and recapitulation.

For the choir singing the better singers of the three upper classes are selected.

23. *Gymnastics.*—(Turnen). The declared aim of the gymnastic exercises, according to the official programme, is "to promote and develope the health of the children, by regular bodily exercises; by strict discipline to accustom the children to order, good behaviour, obedience, and self-control, and in this way to lead them to a glad recognition of their youthful energy and activity."

That, on the whole, such gymnastic exercises are excellent is undeniable; but gymnastic may be mere athleticism, or it may be physical culture; the difference will be elsewhere adverted to, viz., in Chapter XVII.

The physical exercises in the Dresden programme are not limited to the set lessons in gymnastics, but are attended to through the whole period of their school life. All teachers are required to give the most careful attention to the bodily carriage of the children during sitting, standing, walking, and playing, and similarly in regard to bathing, swimming, skating, and during excursions.

All gymnastic lessons are to be strenuous, that is to say, are to involve considerable exertion, but not so much as to be exhaustive and tedious. Parenthetically, it may be remarked that the testimony of experts is that the exercises have been pushed too far, and measurements of fatigue, by means of the Ergograph and Aesthesiometer have shewn that the gymnastic lessons are often seriously fatiguing.

All exercises in gymnastics are to be designed to *develope force of will* (*see* Chapter on Education of the Will, XVI). In regard to details, it may be said, that it is not required that every group of exercises should be gone through, provided that regularity of development is observed. *All dangerous exercises* of a purely gymnastic and professional character (gefahrbringende Bravourstücke) *are strictly interdicted.*

There are three kinds of exercises in the gymnastics, viz., the "formation exercises" (Ordnungsübungen), free exercises (Freiübungen), and those with apparatus (Gerätübungen). In the upper classes they may be combined, provided there is no overburdening. The Gerätübungen are mainly for the higher classes.

The gymnastics for the girls are designed rather with regard to grace of movement, than with regard to training in mere strength. Nevertheless, the development of muscular strength is by no means wholly disregarded.

Exercises in dancing movements, etc. (Die Uebungsformen des Hüpfens) are to be specially encouraged, and attention paid to the development of good carriage and graceful movement (Schönheit der Bewegungen), everything, however, being carefully avoided that might in any way wound the natural sense of modesty (alles streng zu meiden, was das natürliche Schamgefühl irgendwie verletzen könnte).

As far as possible the instruction in gymnastic is to be carried on with the freewill of the pupil.

The commands are given sharply, but are not thundered out. It is properly regarded as important that in the gymnastics care should be taken to keep the hall (Turnhalle) as free as possible from dust. In the easy exercises folk-songs are often sung, and are recommended.

Games may be exchanged for the regular exercises from time to time.

The regular exercises commence in the 5th Class, and from that to the 1st two hours a week are devoted to the gymnastic lessons.

The following will give some idea of the exercises of the youngest class. It is, of course, not always possible to find an English expression to define exercises or games of another nation.

5th Class.—(*a*) Formation exercises, formation and adjustment of ranks, opening and closing ranks, etc.

(*b*). Free exercises, standing, standing on the toes (Zehenstand), quarter-turn, bending exercises; arm exercises in walking, standing, running, half-turn, movement of feet and knee, springing in place, marking time, etc., step exercises, marching exercises.

(*c*) Exercises with apparatus; regular free spring, without co-ordination; standing in a sloping position, and hanging on bars, ladders, rings, racks, climbing on bars, etc.

(*d*) Games, paces, "Jacob, where are you?" "Cat and mouse," "The black man," ball-throwing.

In order to get an adequate idea of Continental Gymnastic it is necessary to remember that it is well taught in splendidly-equipped halls, provided with excellent apparatus. These are generally floored with wood and waxed. Occasionally elastic flooring has been used, but with indifferent success. Elastic floors are not as free from dust as might be wished. In some gymnastic halls the formation exercises are assisted by figures marked upon the floor. The teachers, at least, in the larger schools are specialists.

The exercises differ slightly in different parts of Germany, and, as before said, there is considerable variation among opinions as to how far it should be pushed. In Switzerland there is a tendency to accredit open-air exercises and games rather than exercises in gymnastic halls. Nevertheless, the most recently-built schools in Switzerland are provided with splendidly-equipped halls.

The German exercises undoubtedly meet many of the demands of a good physical culture gymnastic but probably lay over much stress on muscular development, and they are severe.

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The disciplinary value of the exercises is no doubt high; that can be seen in a moment. The children seemed everywhere to like their exercises, but took them very seriously. The exercises for girls embrace quite as much dancing as in Switzerland. For example, in the 1st class the girls learn the "cross-step," the waltz, schottische, and galop steps, etc. It may be remarked that football (*Fussball*) has been introduced, and is mentioned in the official programme, but opinions are much divided as to its merits.

24. *Needlework.*—Needlework is for girls only. Being part of the regularly organised instruction, it is required that it be taken by all pupils in a class together. Quick workers are to take more care, slow to work more rapidly, so that progress can be comparable.

It may be noted that care is taken as to the position of the body, and in order not to make the temporary myopia permanent the children are required to look up from their work from time to time at distant objects.

The work is excellently done. Two hours per week are given to it in the 7th class, and four hours in every other class up to the 1st. The programme of work calls for no special comment.

25. *General remarks regarding the German Schools.*—Sections 4 to 24 give a fair idea of the course of instruction in elementary German schools. There are, as regards details, differences in the various provinces, and there are differences in method of teaching. Such differences may be readily explained. Let, for example, the subject of reading be taken as illustrative. There are two methods adopted for the teaching of this subject, or, in some cases, a combination of both. These are known as the "Writing-reading" (Schreiblese) method, or the "Normal-word" (Normalwörter) method, called also the "Analytic-synthetic" (Analytischsynthetisch) method.

In the writing-reading method, vowels and diphthongs are first learnt, words being selected in which the vowel is the prominent initial sound. For example, the first and second words in a dictionary are "Aak," a kind of boat used on the Rhine, and "Aal," an eel. Either, preferably the second word, would give the "a" vowel. Similarly, "Esel," an ass, is taken to exhibit the "e" vowel. The first appropriate word under the letter "i" is "Igel," a hedgehog; under "o," "Ofen," an oven; under "u," "Ufer," a bank, or "Uhr," a clock, etc. Then the diphthongs are illustrated in the same way; shorter sounds of the vowels are identically treated, always by selecting an illustrative word which is the name of a common object shewn by a picture. The attention is concentrated in the *initial* sound. It is claimed that this method gives quick results—*i.e.*, the children learn to read very quickly, and do not spell in order to read.

The normal-word method depends upon the selection of a series of words denoting common things, developing from the first. To take an example illustrating the diphthongs and sibilants, the word "Ei," an egg (sounded like our I, not as one sometimes hears the latter, Iece), say, is pronounced by the teacher. The meaning of the word is known to all the children. The letters "ei" (not "Ei") are written on the board (or put on the frame) as the verbal symbol. Next, "eis," *i.e.*, ice (also pronounced like our "ice"), is pronounced, stress being laid on the "s," and is set on the frame, so that the children learn that the final "s" is a hissing sound. In this way the whole range of sounds is developed. It is not necessary to go into details.

It may be said that in all methods stress is laid on the *sounds*, rather than on the letters.

Not only are there differences in the teaching of different subjects; there are also differences in the programmes, and differences in the hours of attendance.

In Prussia there are whole-day schools generally, but not invariably. In Saxony the schools are half-day schools (Halbtagsschulen). Many of the directors in Saxony believe that this is unsatisfactory, but it is strongly advocated by the teachers. There is some reason for their contention, for their official pay is not large, and directors who believe in the whole-day school believe also in larger emoluments for teachers.

It ought to be mentioned that in school the children are really occupied. There is no such work as "lesson preparation"; that is all done at home, and in this connection it should be said that the home work is cheerfully done. In all-day schools, however, with the longer hours of German schools, it is very questionable whether home work should be permitted, and the testimony of physicians who have investigated the question of overwork (Die Ueberbürdungsfrage) is somewhat startling, especially in the higher schools.[2] In some schools in Germany work commences at 7 o'clock in the summer (8 in the winter), and children shewed by Aesthesiometer measurements that they were clearly suffering from fatigue—that is, the normal skin-sensitiveness had not been attained, shewing the presence of the fatigue-poison.

Griesbach went so far as to advocate a long interval in the mid-day, or the complete abolition of the afternoon school. Children's activities, however, need direction. A plan is adopted in many Prussian schools, viz., of devoting the morning hours to the "wissenschaftliche Arbeit," *i.e.*, the scientific and severer work, and the afternoon to the lighter exercises—singing, manual work, drill, etc.

Put generally, it may be said that it is becoming recognised that the curriculum needs adjusting carefully, taking full account of the fatigue developed by various subjects; and further, that the personality of the teacher, and his method of teaching, are even more responsible for fatigue than the matter of the instruction itself.[3]

In connection with the German system, it may be remarked that although the kindergarten is not officially connected with the elementary school, not only do kindergartens abound in Germany, but "Anschauungsunterricht" has become a feature in the school-systems; that is to say, the Froebelian principle is largely applied, and with very satisfactory results, so that children very often having commenced their education in the kindergarten, continue with the kindergarten influence in force, not only in their thought, but also in the elementary school. Manual

[1] Simply because "l" is liquid, and, by contrast, the "aa" is more distinct in Aal than in Aak, and the eel is better known as an object.

[2] Griesbach, who has discussed the question of hygienic school reform, says:—"Dass kein Schulknaben und selbst kein Erwachsener, ohne Gefahr für seine Gesundheit, Tag ein, Tag aus geistig so lange zu arbeiten im Stande ist, wie es der heutige höhere Unterricht bei strenger Durchführung erheischt." (No schoolboy, and, for the matter of that, no adult, can, day in and day out, work mentally for so long as is required by the severe tasks of the higher education of to-day, without danger to his health.) Energetik und Hygiene des Nervensystems in der Schule, München, 1895.

[3] *See* Wagner. Unterricht und Ermüdung. Berlin.

Manual instruction is commencing to influence the German system, and so also is the tendency to practically orientate the educative instruction, care being taken, however, to maintain the educative function. This may be illustrated by reference to the instruction in gardening given in some elementary schools.

26. *The Teaching of Fruit-culture in German Elementary Schools.*—As far back as 1880, the Prussian Government invited school-teachers to co-operate with other authorities to promote fruit-culture. Practical instruction in this subject was deemed to have a high educative and moral as well as practical value. What was claimed first may be set out as hereunder. The instruction is believed to—

(*a*) Bring about greater love of Nature, by more direct contact with its various forms.
(*b*) Create sense of order and neatness.
(*c*) Habituate to physical activity.
(*d*) Awaken respect for the results of human effort.
(*e*) Teach respect for the property of others, etc.

Instruction is given as to—

(i) The kinds of trees that are suitable for the locality.
(ii) Planting, grafting, budding, formation of standards and espaliers, etc.
(iii) Training of cordons, shaping trees, pruning, etc.
(iv) Treatment of soil, manuring, etc.
(v) Injurious insects, etc.; clearing trees, etc.
(vi) Fruit, its gathering and storing, etc.

Special instruction is given to teachers of elementary schools, to enable them to deal with the above. The teaching is both theoretical and practical, not only for the boys, but for the student-teachers also, and it has been found from experience that the effect of such schools is excellent. Boys take a real interest in their work, and in the development of the trees planted by themselves.(1)

In this connection, also, it may be mentioned that the matter is not neglected by the French in their schools. Reference will be made to the matter later.

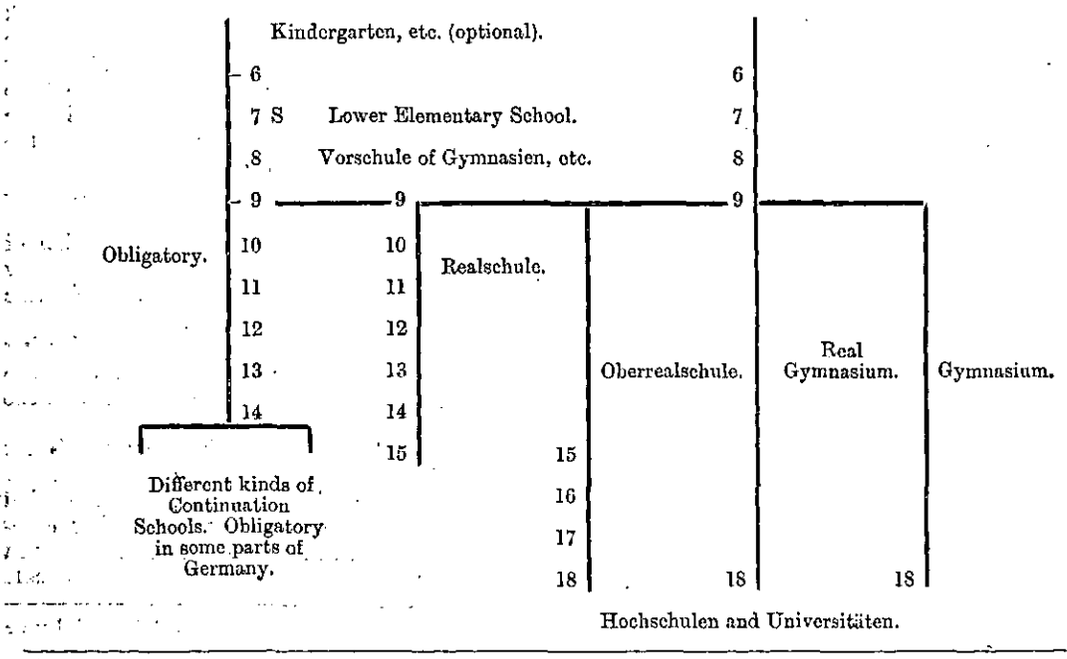
27. *The School System of Germany.*—Children in Germany generally must attend school from the age of 6 to 14, and failure to attend is rare, and is punished by fine, with an alternative of imprisonment. The following are some of the classes of schools:—

Infant Schools.—Kleinkinderschulen (Infant schools); Kindergärten (Kindergartens).
Elementary Schools.—Elementarschulen (Elementary schools); Volksschulen (Folkschools); Primarschulen (Primary schools).
Middle and Secondary Schools.—Mittelschulen (Middle schools); Höhere Mädchenschulen, Höhere Töchterschulen (Higher girls' schools); Realschulen, Höhere Bürgerschulen (Modern, *i.e.*, not classic schools); Oberrealschulen (Upper modern schools); Realgymnasian (Science and classic schools); Gymnasien (classical schools).
Superior Schools.—Hochschulen (High schools); Technische-Hochschulen (Technical high schools or Professional Universities); Universitäten (Universities).

Besides these, there are large numbers of trade and professional schools, as for example:—

Handwerkerschulen (trade schools). Steinmetzschulen (stonemason schools). Fortbildungsschulen (continuation schools). Gewerbeschulen, Industrieschulen (arts and crafts schools). Handelsschulen (commercial schools), etc.

In order to understand the German system it is necessary to compare the curricula of the various forms of education for the same age. The general scheme is somewhat as follows:—



(1) There is a curious interest developed in plant-life by this early training, which has been dwelt upon by psychologists. See an interesting paper by J. O. Quintz, Ph.D., on Dendropsychoses. *American Journal of Psychology*, IX, pp. 449–506.

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The following is the programme in some of the Vorschulen of the Gymnasien, etc. :—

School	Lyceum, Strasburg.			Gymnasien Coblentz.			K. Friedrich's Gymnasien, Frankfort.			Friedrichs-Werdersches Gymnasien, Berlin.			Folkschool, Dresden.		
Class	IX.	VIII.	VII.	III.	II.	I.	III.	II.	I.	III.	II.	I.	VIII.	VII.	VI.
Subject—															
Religion	2	2	2	2 in all.			2	2	2	2	2	2	$2\frac{2}{3}$	$2\frac{2}{3}$	3
German and History	13	9	9	5	2	6	11	7	9	6	7	8	$7\frac{2}{3}$	7	7
					4										
History and Geography	...	...	...	...	...	1	...	...	...	...	...	...	...	...	2
Arithmetic	5	5	5	5	6	5	5	5	5	8	5	6	4	4	4
Writing	...	4	4	$2\frac{1}{2}$	$3\frac{1}{2}$		....	4		10	4	4	?	3	3
Singing	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	...	1		...	1		...	1	1	?	?	1
Gymnastics	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$		...	2		...	2		...	...	2
Needlework	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2 Girls only.

These comparisons must be very liberally understood, because subjects are not divided in any hard-and-fast way. History, for example, in one place might be included under German (*i.e.*, mother-tongue) in the Vorschule of one place and under Geography in another.

The above takes one from 6–9 years of age; then the corresponding classes will be from 9–14. The following will exhibit the difference :—

School	Folk School, Dresden.					Prussian Obberrealschule and Realschule.					Prussian Real Gymnasium.					Prussian Gymnasium.				
Class	V.	IV.	III.	II.	I.	VI.	V.	IV.	III.	III.	VI.	V.	IV.	III.	III.	VI.	V.	IV.	III.	III.
Subject—																				
Religion	4	4	4	4	4	3	2	2	2	2	3	2	2	2	2	3	2	2	2	2
German	6	6	6	6	6	5	4	5	$\frac{3}{5}$	$\frac{3}{4}$	3	2	3	3	3	4	3	3	2	2
Historical Sketches						1	1				1	1								
Latin	...	...	...	...	...	...	...	...	...	...	8	8	7	4	4	8	8	7	7	7
Greek	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	6	6
French	...	...	...	...	...	6	6	6	$\frac{6}{5}$	$\frac{6}{4}$	...	...	5	5	5	...	...	4	3	3
English	...	...	...	...	...	...	...	...	5	4	...	...	...	3	3	...	...	..	2	2
History	...	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Geography	2	2	2	2	2															
Arithmetic	4	4	4	6	6	$\frac{4}{6}$	$\frac{4}{5}$	$\frac{5}{6}$	$\frac{5}{5}$	5	4	4	4	5	5	4	4	4	3	3
Mathematics																				
Natural History	2	2	2	1	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	0
Physics	...	...	...	2	2	...	...	...	...	$\frac{2}{3}$	...	...	...	...	...	...	...	...	...	2
Writing	3	3	3	1	...	2	2	2	...	...	2	2	...	...	...	2	2	...	...	...
Drawing	...	2	2	3	4	...	2	2	2	2	...	2	2	2	2	...	2	2	2	2

It will be seen from these programmes that the distinction between the Folkschool, the Realschool, and the Reform and Classical gymnasia, for the age of compulsory school attendance, may practically be summed up as follows :—

(*a*) The Classical Gymnasium emphasises Greek and Latin, and attaches less importance to modern languages.

(*b*) The Realgymnasium omits Greek and emphasises Latin; it gives, however, a prominent place to modern languages.

(*c*) The Oberrealschule abandons the ancient languages altogether, and gives prominence to (1)French, (2)English.

(*d*) The Realschule is somewhat inferior to the Oberrealschule, but its scheme is much the same.

(*e*) The Folk-school confines itself to the vernacular, neglecting all other languages, ancient or modern.

There is another difference not apparent in the curriculum, viz., that the qualification of the teachers is higher in the Oberrealschule, the Realgymnasium, and the Gymnasium than it is in those of the Realschule, and the teachers of the Realschulen are more highly educated than the teachers in the Folk-school. All the teachers, however, are well and realistically educated, and it is this thoroughness of education that makes so great a difference.

Education by well-informed teachers is totally different from education by teachers who have never had a reasonable opportunity of properly learning the subjects they are supposed to teach, or who teach without a wide outlook and considerable knowledge.

It is here that the strength of the German system lies. Such education tends to continual improvement, while any system which employs untrained teachers (*i.e.*, pupil-teachers) tends to stagnation.

As each successive generation of teachers comes under the educational hands of its instructors, it is brought into touch with the accumulated knowledge in the higher forms of education in which of course the progress is most marked, are continually influencing the lower.

(1) The only difference in the Oberrealschule is that in mathematics the hours per week are 5-5-6-5-5, instead of 4-4-5-6-5, and a little less French is taught. (2) Greek does not commence till Class III.

28. *Some modern tendencies in German Education.*—It will be observed that manual training is not a conspicuous feature in German popular education; nevertheless, as before said, it is beginning to be realised that there is some educative as well as practical value in such a subject. In some places it is forming an element in the curriculum; as at Leipzig, for example.

A strong tendency is manifesting itself to maintain educational control of the youth beyond the age of 14, and in parts of Germany attendance at evening continuation schools is obligatory on the ex-pupils of the folk-schools. The moral effect of this is probably good.

Intuitive teaching is a characteristic feature of the method of instruction, and the accessories for teaching (Lehrmittel) are excellent. The realistic character of this teaching is conspicuous, and teachers have a real, and not merely literary, knowledge of physical science. Hence their teaching does not embrace inconclusive and minor facts of small importance, but illustrates the broad features and significance of the subject.

It may be remarked further that teaching method is most thoroughly discussed, and the whole scheme of education is being rapidly improved. Recently built schools are on better lines hygienically, they are better seated, more convenient, and altogether better equipped than earlier ones. Some idea of the value of the school buildings may be had when it is mentioned that the Frankfort Municipal Middle School for girls cost about £20,000, and has only about 500 scholars. An elementary school for 900 children cost £23,000. An elementary school in Cologne for 1,600 children cost, building alone, £25,000. The Goethe Gymnasium in Frankfort cost £28,000 (for building alone).

Throughout Germany, as throughout Switzerland, and indeed the greater part of Europe, and the same is true of many places in the United States, the educational equipment creates the feeling that these peoples *believe in education* much more earnestly than we do.

29. *The System of Primary Education in Holland.*—Infant schools exist in Holland, but are not recognised in the State System. These are known as "guardian schools" (Bewaarscholen, or what is known in Belgium as écoles gardiennes). At Amsterdam there are classes, however, for children of not less than 5 years in the free public schools. In the rural districts children generally go to school at 5 and in town at 6 years of age.

Unless children are educated at home, or at another class of school, attendance at the Primary Schools (Lagere Scholen[1]) becomes obligatory at the age of 7, and must continue for six years, provided that the available school is within 4 kilometres (2½ miles) of the house. The instruction embraces:—

(*a*) Reading.	(*g*) Of Natural History (Kennis der Natuur).	3,096
(*b*) Writing.	(*h*) Singing.	
(*c*) Arithmetic.	(*i*) First Exercises in Drawing.	
(*d*) Elements of Dutch.	(*j*) Free and Formation Exercises in Gymnastics.	
(*e*) Of Dutch History.	(*k*) Useful Manual Work for Girls.	
(*f*) Of Geography.		

In the lower schools other instruction can also be given, viz.:—

(*l*) The Elements of French ...	1,049	(*q*) Of Drawing	544
(*m*) Of German	592	(*r*) The Elements of Agriculture }	17
(*n*) Of English	451	(*r*) Of Horticulture ... }	
(*o*) Of General History ...	479	(*s*) Of Gymnastics	479
(*p*) Of Mathematics (Wiskunde)	431	(*t*) Fancywork for Girls... ...	300

The upper figures give the total number of public schools: the lower, the number teaching the optional subjects. The practical orientation of the course is obvious. Owing to the condition of the population, children of 10 years of age or over may obtain leave for six weeks annually, in addition to vacations, in order to assist their parents in cattle tending, agriculture, etc., provided, however, that they have attended regularly for the preceding six months. Regular attendance implies that they have not been absent more than about once a month without reasonable excuse.

Among the features of instruction which were striking, was the excellent teaching of the mother tongue. The phonetic method is used, and the enunciation is very perfect, so that the pupil's ear is well trained.

Not only is intuitive teaching a feature of Dutch education, but in addition, Nature-study (Kennis der Natuur) is made as *direct* as possible.

Objects in the vegetable, animal, and mineral kingdoms contribute elements for consideration, and excursions are made.

The principles of direct study of facts and objects, as found in some of the Dutch schools, may be set out as follows:—

(*a*) The objects, etc., are first seen, interest being suitably awakened.

(*b*) The perceptions are subsequently recalled, and intensified by conversation, drawing, or modelling (in paper or clay, etc.).

In order to make the knowledge extensive as well as intensive, the following procedure is observed:—

(*c*) Objects are first selected among immediate surroundings, and later from an ever-enlarging region.

(*d*) The *material* of the object is examined.

(*e*) And the *mode* of manufacture, etc., described.

(*f*) The process of development throughout is to pass from the simple to the complex, so that the children will have clear ideas of the whole matter. What

[1] Lower instruction legally includes home and school education. Lager onderwijs is huis- en school- onderwijs. Titel I, Art. I. "Wet tot regeling van het lager onderwijs." 24th June, 1901. *Ibid.* Titel I, Art. 2.

What may be called technological lessons are given, botanical, zoological, and mineralogical facts being impressed on the mind of the pupil through them. These lead him to think and to know something of raw materials, and in this connection geography is taught, as bringing under review the localities where the raw materials, etc., are obtained. Then the humanistic side is introduced—the part that man plays in their transformation being illustrated. Thus the development is—

(*g*) Raw material.
(*h*) Its geographical distribution.
(*i*) Its preparation.
(*j*) Industries directly connected therewith, and so on.

It will be seen from this that the principles of modern pædagogy are applied in Dutch-teaching.

Features of special interest seen were the development in the direction of manual training for boys, and domestic economy for girls. The equipment for teaching household duties seen by the Commissioners at the Hague and Amsterdam were excellent.

Incidentally it may be here mentioned that Holland is a country which has, it is sometimes supposed, teachers analogous to the pupil-teachers of this State. By Article 8 of the law of 1889 persons of either sex, aged 15–19, can be admitted by the head-masters of either public or private schools after the giving of three days' notice to the District School Inspector. These are known as "Kweekelingen," *i.e.*, pupils. Children at school are known as "Leerlingen," *i.e.*, children being taught.

After three months' satisfactory work, they receive an attestation of satisfactory progress, and continue their offices, or, failing to receive this, are dismissed.

These students learn the practical work of teaching, *but are not assigned to any actual class in the school; when teaching they must be under the supervision of a certificated teacher, and are expressly forbidden to teach except under such supervision.*

Government grants are given to the head-teachers for every pupil-teacher trained by him. Courses in the theory and practice of teaching are given by such head-teachers outside their ordinary teaching hours; this includes pædagogy. Besides this, there are State normal schools for the training of teachers (Rijkskweekscholen ter opleiding van onderwijzers), the course lasting four years. The question of the qualifying of teachers is, however, not here dealt with.

Holland has excellent continuation and technical schools for its youth on leaving the folk or public school; these, however, will be referred to elsewhere.

To understand the education in Holland up to the age of 14, reference must also be made to the initial stages of higher education.

In the communal and State higher burgher schools (Gemeente en Rijks hoogere burgerscholen), entrance may take place as early as 12 years of age. There are two classes of these for youths, one with a five years and one with a three years' course, and also one for girls.

Entrance into the Gymnasium may also take place at the same age, viz., 12.

The programmes for the first three years are as follow:

School / Class	Higher Burgher School, 3 years' Course (Boys).			Higher Burgher School, 5 years' Course (Boys).			Higher Burgher School, 5 years' Course Girls).			Gymnasium (Entrance by Examination).		
	I.	II.	III.	I.	II.	III.	I.	II.	III.			
Subject—												
Mathematics	7	6	6	7	6	6	4	3	3	4	3	3
Physics and Chemistry	...	2	5	...	...	2	...	...	2	...	...	...
Botany and Zoology	2	2	...	...	...	...	...	...	...	...	...	...
Natural History	...	...	...	1	1	2	2	2	1	2	2	...
Economy	...	...	1	...	...	...	...	...	...	...	...	...
Book-keeping	...	...	1	...	...	...	...	...	...	...	...	...
Geography	2	2	2	3	2	2	2	2	2	3	2	1
History	3	3	2	3	3	3	2	2	3	4	3	3
Dutch	4	3	3	4	3	2	4	3	3	3	2	2
French	4	3	3	4	3	3	4	4	3	4	2	2
English	...	4	3	...	4	4	...	4	3	...	...	3
German	4	3	3	4	4	3	4	3	4	...	2	2
Writing	1	...	...	1	1	...	1	...	...	...	...	...
Drawing	3	2	3	3	3	3	3	3	3	...	...	...
Gymnastic	2	2	1	2	2	2	2	2	1	...	...	...
Manual work	...	...	...	...	...	...	2	2	2	...	...	...
Greek	...	...	...	...	...	...	...	...	...	...	6	6
Latin	...	...	...	...	...	...	...	...	...	8	6	6
Totals	32	32	33	32	32	32	30	30	30	28	28	28

This will give some idea of the education afforded by Holland for children up to the age of 15 years.

30. *Primary Schools of Denmark.*—The history of the Danish folkschool has been written by Joakim Larsen[2]. Education was made obligatory in this country as far back as 1739, by King Christian VI, a school attendance of seven years being now required.

Children usually attend from 6 or 7 up to 14 years of age, primary education being provided by several classes of schools, viz., the folkschool or communal school (folkskole, communeskole), which is elementary; the middle-class school (borgerdydskole), folk high school (folkehøjskole), the "real" and classical schools (realskole, Latinskole), etc. The

[1] This is practically a method of Mr. J. Lighthart, quoted in another form by Mr. J. C. Medd. Spec. Reports, Board of Education, Vol. 8, Supp. p. 11, London, 1902.

[2] Bidrag til den Danske Folkeskoles Historie, 1784–1818, of Joakim Larsen, Copenhagen, 1893. Same title 1818–1898. Copenhagen, 1899.

The following programmes will give some idea of the general character of the curricula, one being taken from an elementary school and the other from the higher class school with a preparatory division.

PROGRAMME OF FREDERIKHAVN'S COMMUNAL SCHOOL.[1]

Class	Boys and Girls.		Boys.					Girls.				
	I.	II.	III.	IV.	V.	VI.	VII.	III.	IV.	V.	VI.	VII.
Subjects—												
Danish	9	9	8	7	7	7	6	8	7	7	7	6
Religion	½	½	3	3	3	3	3	3	3	3	3	3
Writing	2	2	3	3	3	2	1	3	3	3	2	1
Arithmetic	3	3	4	4	4	4	4	4	4	4	4	4
History	...	1	2	2	2	2	2	2	2	2	2	2
Geography	...	1	2	2	2	2	2	2	2	2	2	2
Singing	½	1	1	1	1	1	1	1	1	1	1	1
Zoology, Botany	...	...	1	1	1	1	2	1	1	1	1	2
Physics	...	...	...	...	...	1	2	...	...	...	1	1
Hygiene	...	...	...	...	...	...	...	...	...	...	...	1
Intuitive Instruction	½	...	...	...	...	...	...	...	...	...	...	...
Total	19	19	24	23	23	23	23	24	23	23	23	23
Drawing	...	...	...	1	1	1	1	...	1	1	1	1
Sloyd	...	...	...	4	4	4	4	...	...	...	...	...
Manual work for girls	...	(2)	...	...	...	...	...	4	4	4	4	4
Gymnastics or regulated games[2]	...	2	2	2	2	2	2	2	2	2	2	2
Totals	20	21 boys 23 girls	26	26	30	30	30	30	30	30	30	30

It will be noticed that girls get lessons in hygiene (Anskuelsesundervisning).

Although Frederikshavn is only a village of about 5,000 inhabitants in the extreme north of Denmark, its schools are well equipped, especially for the teaching of Sloyd. It may be mentioned in regard to the Sloyd exercises that the boys use either hand with the knife, chisel, and saw, that is to say, they are all ambidextrous. About 20 per cent. of the boys undertake school gardening on a little plot at the school.

The manual work for girls is sewing work, etc.

The numbers in the classes in this school were between thirty-five and forty.

Children use the school shower-bath once a fortnight at least. The installation is similar to that of Swiss and German schools.

Beneath the school rooms there is provision for games, etc., when the place is covered with snow.

The communal school in Fredericia,[3] a town of 10,000 inhabitants, has a fairly large gymnasium. It is easy to recognise, even in these relatively out of the way places, the influence of modern progress in education.

Since so many of the more well-to-do send their children to the better class of schools it is necessary to indicate the type of education provided in them. Instead of taking one of each grade it will be sufficent to shew what is done in the preparatory division of an establishment that embraces the several grades. Thus the programme of a Latin and Real school will present a fuller idea of the educational facilities provided.

PROGRAMME OF ØSTERBROS LATIN AND REAL SCHOOL.[4]

Class	Preparatory School.						Latin School.				Real School.				University Classes.	
	I.	II.	III.	IV.	V.	VI.	I.	II.	III.	IV.	I.	II.	III.	IV.	V.	VI.
Subjects—																
Danish and Old Norse	8	8	7	6	5	4	2	2	2	2	3	3	3	3	4	4
German	...	...	...	4	5	4	3	3	3	2	3	3	3	3	...	...
French	...	...	...	...	...	5	3	3	3	3	3	3	3	3	3	3
English	...	...	...	...	...	...	...	2	1	3	4	2	3	3	2	2
Latin	..	...	...	...	...	...	5	6	7	7	...	...	...	...	0 (7)	0 (7)
Greek	...	...	...	...	...	...	...	...	0 (4)	0 (4)	...	...	...	...	0 (5)	0 (6)
Religion	...	2	2	2	2	2	2	2	1	...	2	2	1	...	1	1
Geography	...	2	2	2	2	2	2	2	2	2	2	2	2	2	...	...
Natural History	...	...	2	2	2	2	2	2	2	2	2	2	2	2	...	...
History	...	...	2	2	2	2	2	2	2	0 (2)	2	2	2	4	4	4
Ancient History	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1 (0)	1 (0)
Arithmetic	6	5	4	4	4	4	2	1	...	...	2	2	2	2	...	...
Mathematics	...	...	...	...	...	...	3	4	4	4	3	4	4	4	7 (0)	(7) 0
Geometrical Drawing	...	...	...	...	...	...	...	...	...	4	...	...	...	...	2 (0)	2 (0)
Science	...	...	...	...	...	...	...	...	2 (0)	2 (0)	...	...	2	2	4 (3)	6 (3)
Writing	5	4	3	3	2	2	1	...	...	...	1	1	...	...	...	...
Gymnastic	2	2	2	2	3	3	4	4	4	4	4	4	4	4	4	4
Sloyd and Drawing	2	2	2	2	2	2	2	2	...	...	2	2	...	...	...	...
Singing	...	...	1	1	1	1	1	...	...	...	...	1	...	...	...	...
Intuitive Instruction	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	24	26	28	30	30	33	34	36	33 (35)	30 (32)	34	33	31	32	32 (33)	34 (34)

It will be observed in the Classes III to VI that there are figures in brackets. These denote the classic side, the ordinary figures the modern side. All

[1] From the Undervisningsplan for Frederikshavns Kommuneskole, 1902, p. 5. It may be mentioned that ½ denotes four half-hour lessons and similarly with other quantities so written.

[2] Ordnede lege. Ball games (boldspil), and for the stronger boys football (fodbold), and cricket (kricket) are recommended.

[3] Fredericia Kjøbstads Communeskole.

[4] From the Meddelelser om østerbros Latin- og Realskole i Skolcaaret, 1901-2. Copenhagen, 1902, p. 5.

All recently built schools seen by the Commissioners in Denmark are well built and well equipped, particularly so for Sloyd and domestic economy, cooking, etc. Gymnastics are taught by competent teachers, and with regard to the requirements of scientific physical culture. The characteristic feature, perhaps, of Danish education, as of Norwegian and Swedish, is that little weight is attached to the dead languages in the education of the people.

Among special schools noticed was a Fisherman's Navigation School (Fiskeskipperskole) at Frederikshavn.[1] These exist elsewhere, and will be referred to later.

Denmark has both free schools (Friskoler) and schools charging fees (Betalingsskoler). Some of the latter are excellent, notwithstanding that the fee is very small. For example, in Copenhagen there are no less than ten Communal schools charging only 1 krone a month, say 1s. 2d., and twenty free schools. Both types were visited by the Commissioners. The principle adopted is that those who are willing to pay fees are entitled to a corresponding advantage in the character of the school building and its equipment. The curricula in the two, though not absolutely identical, are substantially so. In a total of about 200 hours these are the only differences, viz.:—

	Free School.	Paying School.
History	13 hours per week.	14 hours per week.
Geography	10 ,,	11 ,,
Natural History	7 ,,	10 ,,
Science	4 ,,	5 ,,
	34 hours.	40 hours; total difference, 6 hours per week.
Grand total	200 ,,	206 ,,

The average number of pupils to a class is about twenty-eight or twenty-nine, and in Copenhagen the total number of pupils paying is 12,927 against 24,753 non-paying in 1901.

31. *Primary Education in Norway.*—The primary schools of Norway are intended to cover the period of 7 to 14 years of age. The obligation of education exists—that is to say, unless children of from 8 to 15 in the country, or 7 to 15 in the town, are receiving adequate instruction, they can be required to attend the primary school. The divisions in the ordinary town school are lower, 7–10; middle, 10–12; higher, 12–14; these being divided again, of course, into yearly classes.

The programme of lessons is about as follows in Kristiania:—[2]

	Boys.							Girls.						
	1st Division.			2nd Division.		3rd Division.		1st Division.			2nd Division.		3rd Division.	
Class	I.	II.	III.	IV.	V.	VI.	VII.	I.	II.	III.	IV.	V.	VI.	VII.
Subjects—														
Religion	3	3	3	4	4	4	3	3	3	3	3	3	4	3
Dano-Norwegian	12	10	8	5	5	5	5	11	8	7	5	4	4	5
Arithmetic and Geometry	5	4	4	4	3	3	3	4	4	3	3	3	3	3
Writing	4	4	3	2	1	1	1	4	3	2	2	1	1	1
Drawing	...	...	...	2	2	2	2	...	...	...	...	2	2	2
Geography	...	3	2	1	1	1	1	...	2	2	1	1	1	1
History	...	...	2	2	1	1	2	...	...	2	2	1	1	2
General Science	...	...	...	1	2	2	2	...	...	...	1	2	2	2
Singing	...	...	1	1	1	1	1	...	...	1	1	1	1	1
Gymnastics	...	...	1	2	2	2	2	...	...	...	2	2	1	0
Manual work	...	...	...	...	2	2	2	2	4	4	4	4	4	4
Totals	24	24	24	24	24	24	24	24	24	24	24	24	24	24

(NOTE.—In the first three classes the lessons in religion are half-hour lessons, and the gymnastic lessons in the third class for boys are also half-hour lessons.)

In the small schools in the country the division of the time-table is, of course, different; this, however, need not be given. Children passing through these schools may qualify for trades, etc., through continuation (Fortsættelseskoler) and artisan schools (Arbeidsskoler).

There are several forms of higher schools in Norway as Middle-class schools (Borgerskoler), Real schools (Realskoler), Middle schools (Middelskoler), Folk-high schools (Folkehøjskoler), Grammar schools (Lærdeskoler), the Real and Classical Gymnasia (Realgymnasier, Latingymnasier), etc.

The

[1] From the Beretning om Frederikshavns Fiskeskipperskole, 1900. It appears that the programme is much the same in principle as the French one given hereinafter in this chapter.

[2] See the Beretning om det Kjøbenhavnske borger- og almueskolevæsens tilstand for aaret 1901. Copenhagen 1902, pp. 4–5.

[3] See Skoleplan for Kristiana Folkeskoler. 1900, p 38.

The normal age of entrance into a middle school is 9 years; the minimum age for the Real and Latin gymnasia is 14, and the normal age 15. It will be sufficient, therefore, to indicate the programme of a middle school, and of a gymnasium with its preparatory and middle school.

MIDDLE SCHOOL.

Class	I.	II.	III.	(E) IV (L)	(E) V (L)	(E) VI (L)
Subjects—						
Religion	3	3	3	2	2	2
Norwegian	8[1]	5	5	4	3	3
German	...[1]	6	5	4	4 3	4 3
English	...	...	...	5 ...	5 ...	5 ...
Latin	...	...	...	... 7	... 7	... 7
French	...	...	...	...	2[2]	2[2]
History	3	3	4	3	3	3
Geography	4	2	2	2	2	2
Science	...	2	2	2	3	2
Mathematics	4	4	5	6	5	6
Drawing	...[3]	2	2	2 ...	1 ...	1 ...
Writing	4[3]	3	2	...	...	...
Totals	26	30	30	30	30	30

[1] In the second half of the year this can be made—Norwegian, 7; German, 1.

[2] French is optional; if not taken, Norwegian, Drawing, and Physics can be extended.

[3] Instead of this, can be substituted—Drawing, 1; Writing, 3.

In the classes I, II, and III the instruction is the same for all, but in the IV, V, and VI either the English (E) or the Latin course (L) must be elected. The programme shews the parts identical in each.

The following is the programme of the Kristiania Kathedral School for 1902.[1] This will shew how the better class of school provides for the second stage of primary education, as well as for secondary education.

PROGRAMME—KRISTIANIA CATHEDRAL SCHOOL.[2]

	Preparatory.	Middle School.				Gymnasium.				
Class	V.	I.	II.	III.	IV.	I.	II.		III.	
							R.	C.	R.	C.
Subjects—										
Religion	3	2	2	2	1	1	1	1	1	2
Norwegian and Old Norse	6	5	4	3½	3½	4	5	6 (5)	4	4
German	...	6	5	5	5	3	3	3	2	2
French	...	...	...	...	...	4	2	4 (5)	2	2
English	...	...	5	5	5	4	2	7 (2)	4	4
Latin	...	...	...	...	...	...	...	(7)	...	9
Greek	...	...	...	...	...	...	...	...	...	1
History	2	3	2	3	3	3	3	5 (3)	3	3
Geography	2	2	2	2	2	1	1	1	2	...
Arithmetic and Mathematics	5	5	5	5	5	4	6	2	6	3
Natural History	2	3	2	2	3	4	5	1	4	...
Writing	3	2	1	½	½	...	...	...	...	...
Drawing	2	2	2	2	2	2	2	..	2	...
Singing	1	1	1	1	...	...	1	1	1	1
Gymnastics	2	3	3	3	4	6	5	5	3	3
Manual work	2	2	2	2	2	...	...	...	...	...
Totals	30	36	36	36	36	36	36	36	34	34

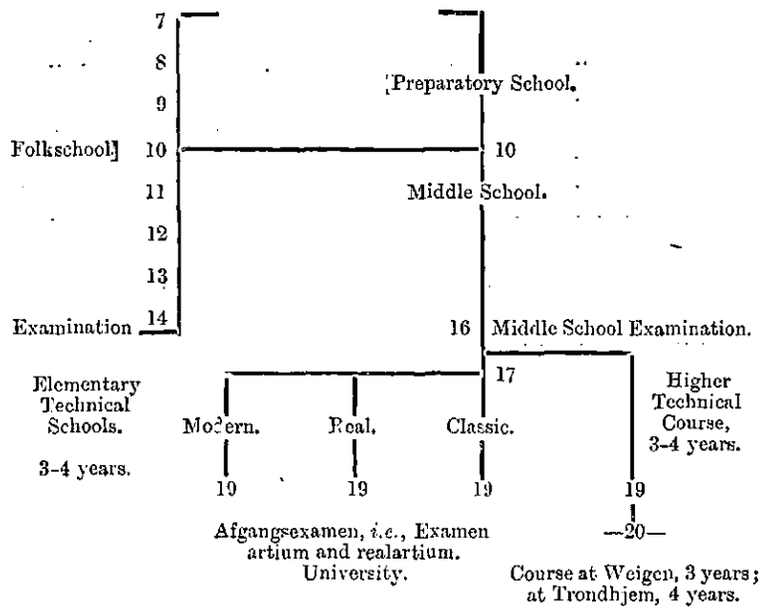
The figures bracketed indicate certain options which need not be discussed in detail. In the two divisions in classes II and III of the Gymnasium, R denotes the "Real" side and C the Classic side.

32.

[1] Recently forwarded to the Commissioners by Mr. Klaus Hoel (Burcauchef i Kirkedepartmentet), of the Church and School Department in Kristiania. The Commissioners take this opportunity of expressing their thanks both for his kindness in forwarding, and for the great kindness shewn during their visit to Kristiania.

[2] Kristiania Kathedralskole.—Aarsberetning for Skoleaaret, 1901-2, p. 12. (This school is housed in a very fine building.)

32. *Scheme of Educational Co-ordination in Norway.*—The diagram hereunder represents the scheme of co-ordination in the various grades of education in the Norwegian system.



The Afgangsexamen is like the Arbiturientenexamen in the German system. The significance of co-ordination in education is dealt with in Chapter LIV herein.

33. *Special Features noticed in Norway.*—In regard to the school buildings and their equipment in Norway it may be said that some of the arrangements seen were very ingenious. Among the schools visited by the Commissioners was the Lakkegadensskole: this has thirty-nine class-rooms for 1,200 pupils; it has accommodation for fifty classes and 1,800 pupils. In this school the sexes are separated, but in most elementary schools they are together. The rector of the school spends six hours a week in teaching, the rest of his time is occupied administratively. This feature is very general throughout Europe, and has great advantages. The school benches are Dr. Schenk's type (*see* Chapter XLVIII). Some features of the equipment are well worthy of notice. Maps and diagrams are hung on gracefully-shaped brackets, carrying a series of spring rollers, conveniently arranged one above the other, so that a series of maps can be quickly lowered or raised. All time-pieces throughout the school are electrically connected with a control clock, so that every electric signal rings at the same moment. The cupboards are cheaply constructed, are of very neat appearance, and have an ingenious system of closing. The equipment for the teaching of physics, chemistry, botany, zoology, etc., is excellent.

The school has its shower-bath rooms, etc., and the pupils use them at least once every fourteen days (unless parents object).

Another feature, and one of great interest, is the school-kitchen for feeding the indigent children, adjoining this school. On a long dining-table passes an endless band of canvas, faced like "American cloth." By turning a drum at either end, all the plates, etc., lying thereon can be moved along the table in either direction. The cooking is done in twelve large boiling-pans, each of 800 litres capacity. These, in groups of four, surround three pillars carrying chains for raising the large lids. Five different kinds of food are made, and can be kept hot in the pans for twelve hours. The food is prepared almost wholly mechanically, electric motors being used. About 7,000–8,000 children are fed per day at a cost of about 11 øre each, say 1½d. Pupils of the school are fed gratis, and the poor can obtain a meal for 15 øre, say 2d. The ticket (Bespisningsbillet) for January, 1902–3, is a little blue ticket, with the days of the month marked round it.

The building, apparatus, and management seem perfect. This gratifying care for the poor, manifesting itself through the whole of Europe, is a fact which must tell morally. The poor, however, are not "ne'er-do-wells," who will *not* work, and the generosity is not abused.

Norway is evidently keeping in touch with all modern development educationally. The tendency, expressing the view, rapidly spreading over the whole of Europe, is to hold that, however valuable the study of the ancient classics may be, it is undesirable to make that study compulsory by closing higher education against all who do not care to devote themselves thereto.

34. *Primary Education in Sweden.*—It was by the ecclesiastical law of 1686 that education in Sweden was first organised; its aim being to give all children a sound education on a religious basis. Compulsory attendance was enforced by the Primary Instruction Act of 1842. In organisation the primary school of Sweden is communal, but is subsidised by the State, which lays down a normal plan in the code. This plan is followed in the development of the programme of the schools.

Children must attend at the completion of the seventh year and the obligation ceases at the end of the fourteenth year, provided they have reached the required standard. Primary education is free.

Children may attend private schools, or be educated at home if the local school-board regards the parents or guardians as qualified to give the necessary instruction.

The

[1] An account of this is given in the Beretning om Kristiania folkeskolevæsen for 1901, see page 60-62. "Det nye kjøkken i Lakkegaden 79 (the new kitchen at 79 Lakke Street).

Accounts of feeding the poor in other countries are given in Foreløbig Indberetning fra den af Christiania Formandskab nedsatte Komité til Behandling af Spørgsmaalet om Folkeskolebørns Bespisning, 1895.

Also, Indstilling . . . . om folkeskolebørns bespisning. 1896.

The following programme of the folk-schools of Gothenburg will give some idea of the elementary education of Sweden :—[1]

INFANT SCHOOL (SMÅSKOLOR).

Classes.....	I.	II.	Classes.....	I.	II.
Religion.....	4	5	Singing	1	1
Mother tongue.....	12	10	Drawing.....	0	1
Writing.....	0	2	Gymnastics.....	1	1
Arithmetic.....	4½	4½			
Intuitive instruction	1	1	Totals.....	23½	25½

PROGRAMME OF FOLK-SCHOOL (FOLKSKOLOR).

Classes.....	I.		II.		III.		IV.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Subjects—								
Bible reading and Psalm reading	1	1	1	1	1	1	1	1
Biblical history.....	2	2	2	2	2	2	2	2
Catechism	2	2	3	3	3	3	3	3
Swedish (mother tongue)	9	9	7	7	7	7	7	7
Arithmetic.....	5	4	4	4	4	4	3	3
Geometry	...	...	...	...	...	...	2	...
Geography.....	2	2	2	2	2	2	2	2
History	1	1	2	2	2	2	2	2
Natural history, etc.	1	1	2	2	2	2	2	2
Caligraphy.....	2	2	2	2	2	1	1	1
Drawing.....	1	1	1	1	1	1	1	1
Singing	2	2	1	1	1	1	1	1
Gymnastics	1½	1½	1½	1½	1½	1½	1½	1½
Sloyd (boys)	...	...	4	...	6	...	6	...
Manual Work (girls)—(*i.e.*, needlework, etc.) ...	...	4	...	5	...	6	...	7
Totals	29½	32½	32½	33½	34½	33½	34½	33½

In detail these subjects are treated as follows in the most elementary schools:—

Religion.—Old and New Testament. Reading of Psalms. Lutheran catechism.

Swedish.—Reading, writing, grammar, orthography. (Extracts from Swedish classics, essays.)

Arithmetic.—Elementary, viz., the four rules, fractions, etc. (Elementary algebra, including simple equations.)

Geometry.—Lines, angles, triangles, quadrilaterals; circles, rectangular solids, etc., and their mensuration. (Three books of Euclid.)

Geography.—General conceptions. Geography of Sweden, of other countries. (Physical, political, industrial and commercial geography of Sweden. International commerce, climate, and characteristics of different countries, etc.)

History.—Mainly national history. (Universal history, including history of civilisation; place of Sweden in history; constitution of Sweden.)

Natural history, etc.—Most important natural objects. Human body; its functions, health. Celestial bodies. Chief natural phænomena. (Chemistry, physics, and hygiene.)

Drawing.—Linear and freehand.

Singing.—Psalms and songs. Exercises.

Gymnastic.—Free and formation exercises and with apparatus.

Sloyd—(boys).—Very well developed set of exercises.

Manual labour—(girls).—Needlework.

Recently domestic economy for girls has been added in many schools, and each recently built school has a very finely equipped school kitchen (Skolkök). Modern languages, German and English are occasionally taught.

To give a more complete idea of Swedish primary education, reference must be made to the earlier classes of the higher schools (allmänna läroverk). The school divides into the "real" or modern division and a Latin line when the pupils are fourteen years of age, and when they are sixteen the Latin line is subdivided into the Latin and Greek line, and the Latin only.

Entrance

[1] Taken from the Undervisningsplan för Göteborgs Folkskolor.

Entrance may take place into these schools at nine years of age. Only the first six classes will be outlined :—

	Real or non-classical Divisions.						Latin and Greek Division.					G.	L.
Class	I.	II.	III.	IV.	V.	VI.	I.	II.	III.	IV.	V.	VI.	VI.
Subjects—													
Religion	3	3	3	2	2	2	3	3	3	2	2	2	2
Swedish	5	5	6	4	3	2	5	5	6	4	3	2	2
German	6	7	6	4	3	1	6	7	6	4	3	2	1
English	...	...	...	6	6	3	...	...	...	...	...	...	3
French	...	...	...	...	3	4	...	...	...	...	3	4	4
History	2	3	3	3	3	3	2	3	3	3	3	3	3
Geography	2	2	3	1	1		2	2	3	1	1		
Mathematics	4	5	5	5	4	6	4	5	5	5	4	3	4
General Science	2	2	2	3	3	...	2	2	2	3	3	...	...
Natural History	...	...	...	...	...	1	...	...	...	...	...	...	1
Physics	...	...	...	...	...	2	...	...	...	...	...	1	1
Chemistry	...	...	...	...	...	2	...	...	...	...	...	...	...
Caligraphy	2	2	1	...	...	...	2	2	1	...	...	...	...
Drawing	1	1	1	2	2	3	1	1	1	1	1	...	2
Totals	27	30	30	30	30	(32)	27	30	30	(30)	(30)	(32)	(32)

NOTE.—The G. VI., is the Greek division ; L. VI., the Latin. The figures in brackets denote the total hours : all the subjects are not stated.

If the pupil has already attained the age of 15 he cannot be accepted in the first three classes.

The more recent higher schools are well equipped in the way of apparatus for the teaching of Science ; schools of this class were seen at Gothenburg and Stockholm.

It may be mentioned that Manual training and gymnastic are excellent features in the Swedish system.

One more illustration of the curriculum of the Swedish schools is given. The following is the latest programme, viz., for the year 1901-2, for one of the most recent schools in Sweden :—[1]

PROGRAMME IN A SCHOOL IN STOCKHOLM.

	Common Division.						Real Division.				Latin Division.			
Class	I.	II.	III.	IV.	V.	C.	VI.I	VI.II	VII.I	VII.II	VI.I	VI.II	VII.I	VII.II
Subjects—														
Religion	2	2	3	2	2	1	2	2	2	2	2	2	2	2
Mother tongue	4	5	6	4	4	4	3	2	2	2	2	2	2	2
Latin	...	...	...	...	...	...	...	...	...	...	9	9	9	8
Greek	...	...	...	...	...	...	...	...	...	...	...	(4)	(4)	(4)
German	5	6	6	4	4	5	2	2	2	2	2	2	2	2
English	...	...	...	(6)	(6)	(5)	(4)	(2) (4)	(2) (4)	2	...	2	2	1
French	...	...	...	6	6	...	4	(2) (4)	(2) (4)	3	4	2	2	2
German or English conversation	...	...	...	...	...	(2)	...	...	...	...	...	...	...	...
History	2	2	3	3	3	2	4	3	3	3	4	3	3	3
Geography	2	2	3	2	1	2								
Propædeutics, Philosophy	...	...	...	...	...	...	...	...	1	1	...	...	1	1
Mathematics	4	5	5	5	5	5	6	6	6	7	4	4	4	5
Natural History	2	2	2	2	3	3	3	2	1	1	1	1	1	1
Physics	...	...	...	...	...	...	2	3	3	3	1	2	1	2
Chemistry	...	...	...	...	...	...	2	2	2	2	...	...	...	...
Book-keeping	...	...	...	...	...	4	...	...	...	...	...	...	...	...
Caligraphy	2	2	1	...	...	1	...	...	...	...	...	...	...	...
Drawing	1	1	1	2	2	2	2	2	2	2	1	1	1	1
Singing	2	2	...	...	...	...	...	...	...	...	...	...	...	...
Totals	26	29	30	30	31	31	30	30	30	30	30	30	30	30

In the above the figures in the brackets denote certain options which need not here be considered. C, are the concluding classes (Praktiska Aflutningsklassen) in which the work is appropriately practical, and would not be taken by those who go on to the Real or Latin divisions.

The co-ordination of Education is much the same as in Norway, and calls for no special comment.

35. *The Equipment of a School in Stockholm.*—Among the schools visited in Stockholm was the Södermalms högre allmänna läroverk, Skaraborgsgatan 14. This is a higher class school, into which children enter at about 9–10 years of age, that is, after having passed through the *lower* elementary school. The classes have about 28–30 pupils ; 35 could be accommodated. There are really three departments in the school, viz., the "Real," the "Classic" (gymnasium), and the "Realgymnasium" divisions. The total number of pupils at the date of visit was 666. The fee for poor pupils is 19 kroner (say 22s.) per annum, and twice that amount for ordinary pupils

This school is splendidly built. The rooms open out on to broad corridors, and are large, well furnished, seated, and lighted. While it has only a moderate-sized museum, the material therein is admirably selected ; its mineralogical museum, for example, has only 200 specimens, but they are very well chosen. Its equipment generally, for teaching, is also very good, particularly so in the departments of physics and chemistry. The physics laboratory is provided with a gas-engine and generator for an 8-ampère electric current at 60 volts, and thus the teaching in physics may readily be made very thorough.

These well-built, really hygienic, thoroughly-equipped schools of Sweden, with teachers properly educated, are the means by which an excellent education for the rising generation is provided, and make it possible in the few years available for study to get at least an intelligent outlook upon the state of knowledge as it stands to-day. 36.

[1] Årsredogörelse för nya elementarskolan, Stockholm, 1901-2, p. 13.

36. *Other Countries of Europe.*—The sketch of the type of primary education provided in the various countries of Europe is not further extended, partly from lack of time, partly because in the rush of travel it was not possible to properly study the whole range, and attention had therefore to be confined to certain features, and partly because in discussing details, matters of moment in the systems will be referred to elsewhere in the Report. The thorough study of educational systems could of course not possibly be undertaken in the time regarded as available to the Commissioners. The folkschool laws of Austria-Hungary[1] alone are two volumes of about 640 pages each: the educational laws of Italy occupy five volumes of about 3,500 pages,[2] and similarly with other countries. All that is here possible in respect of other countries visited is to make a few running comments. Some details of their systems will, where necessary, be discussed in various special articles hereinafter.

37. *Austria.*—The Austrian system has an organisation somewhat similar to the German. Its schools are well equipped, and provided with far more and better material for teaching (Lehrmittel) than can be found with us. The "Lehrmittelsanstalten" (establishments providing teaching apparatus) visited in Vienna were excellent. Teachers are well educated and trained. In teaching, intuitive methods are used as much as possible, and the system is thorough and well co-ordinated. The higher establishments are magnificently equipped.

A single programme will suffice to illustrate the primary education, and for this purpose that of a Realschule will serve the purpose. This would correspond to the education from 10 years of age onward.

AUSTRIAN REALSCHOOL.

Class	I.	II.	III.	IV.	V.	VI.	VII.
Subjects—							
Religion	2	2	2	2	1	1	1
Mother tongue	4	3	4	3	3	3	3
French	5	4	4	3	3	3	3
English	...	...	...	...	3	3	3
Geography	3	2	2	2	3	3	3
History	...	2	2	2	...	...	...
Mathematics	3	3	3	4	5	4	5
Natural History	3	3	...	...	3	2	3
Physics	...	...	4	2	...	4	4
Chemistry	...	...	...	3	3	3	...
Geometrical Drawing	...	3	3	3	...	..	...
Elementary Progressive Geometry	...	...	...	...	3	3	3
Freehand Drawing	6	4	4	4	4	3	3
Caligraphy	1	1	...	...	...	...	...
Gymnastics	2	2	2	2	2	2	2
Totals	29	29	30	30	33	34	33

This would correspond on completion to the age of about 16, and will therefore shew what type of education is provided for the ordinary Austrian youth.

38. *Belgium.*—Belgian education is being rapidly developed. Froebelian methods are followed in the écoles gardiennes, and the system of teaching and of educating their teachers is excellent. The teaching of hygiene is specially well developed. In the rural schools, and to some extent also in the towns, the general education is practically orientated, and the trend seems to be in that direction. The employment of intuitive methods, and the making of the teaching realistic, are the cardinal features of the Belgian system. Manual work has been introduced, and special directions are given as to its combination with other parts of the programme. The main difficulty in Belgian education depends upon the fact that the country is bilingual, and French and Flemish must therefore be learnt, and in certain cases Wallon also. Its general programme is as follows, each division being of two years' duration:—

BELGIAN COMMUNAL SCHOOLS.[3]

Subjects.	Lower Division.		Middle Division.		Upper Division.	
	Boys.	Girls.	Boys.	Girls.	Boys.	Girls.
Religion and Ethics	3	3	3	3	3	3
Reading, Writing	6	6	5	5	5	5
Mother tongue	5	5	4	4	4	4
Arithmetic	4	3	4	3	3	3
Geography	1	1	1	1	1	1
History	...	...	1	1	2	1
Drawing	2	1	2	1	2	1
Hygiene	1	1	1	1	1	1
Singing	1	1	1	1	1	1
Gymnastics	1	1	1	1	1	1
Theory of Agriculture	1	...	2	...	2	...
Needlework	...	3	...	4	...	4
Totals	25	25	25	25	25	25

Details of the programme have been translated and will be found in special chapters.

39.

[1] Die Reichs und Landesgesetze mit den einschlägigen Ministerial-Verordnungen und Erlässen, erläutert durch die Entscheidungen des k. k. Verwaltungsgerichtshofes und des k. k. Reichsgerichtes Wien, 1893.

[2] "Codice pubblica istruzione," Vol. I-IV, Torino, 1901; and "Vicende legislative della pubblica istruzione in Italia, dall' anno 1859 al 1899." Torino, 1901.

[3] From the Modelreglement en Modelprogramma der lagere gemeentescholen. Bruxelles, 1897, p. 63

39. *Bohemia.*—The Bohemian schools, German, and Czech or Tschek (Ceska), were seen in Prague its capital. As in Belgium, the bilingual difficulty is also felt, and both languages have to be learnt. Recently-built schools, though under the one roof are absolutely divided, one-half being a Czech school, the other half German. Even the inspection is under different staffs, owing to a want of sympathy between the two peoples.

The school-buildings are fair. The higher institutions are very good and very well equiped. The organisation and curricula are similar to the Austrian, Bohemia being a part of the Austro-Hungarian kingdom.

40. *Italy.*—The development of education in Italy is most remarkable in its higher branches, but there has been a tendency in the North to vastly improve the popular schools. This was strikingly seen at Turin, in the organisation of their recent school-buildings. Reference is made elsewhere to features of Italian education. A recently built elementary school in Turin far surpasses any school in this State, in its plan, equipment, hygiene, etc.

41. *Finland.*—Elementary schools in Finland were seen at its present capital, Helsingfors. Some of the buildings are very fine, among which may be mentioned the primary school at Viborg, and the Finnish school for girls at Helsingfors. These are comparable to the Swiss in design, and almost in their finish, the equipment being not quite so good, however, except for manual training. Sloyd is one of the well-developed features, and the Sloyd programmes, as arranged by Finnish teachers, are of a very high character. The matter of manual work in Finland is however referred to in another chapter. As an instance of how Finland aims at educating its teachers, it may be mentioned that there are no less than ten normal schools in the country, viz., eight Finnish and two Swedish. Every three years the Department of Education convenes a congress of all its teachers, male and female.

The general programme calls for no special comment. Children attend school as a rule from about six years of age, and a leaving certificate is given to pupils satisfactorily going through their course in either the city or rural folk-schools. This certificate entitles its holder to a reduction of the three years' military service, to one year.

On the coastal district Swedish and Finnish are spoken and near the Russian frontier, Russian also.

42. *Hungary.*—Public education was really organised in 1777 by a royal decree, the "Ratio educationis." The Empress Maria-Theresa divided the schools into rural, town, and city (scolæ pagorum, oppidanæ, et urbanæ). In 1848 education was made obligatory for children from six to twelve. The organisation of to-day depends however mainly upon the law No. 38 of 1868, and in minor matters upon additional laws passed since. The following is the programme of the superior primary school :—

SUPERIOR PRIMARY SCHOOL, HUNGARY.

Classes	I.	II.	III.	IV.	V.	VI
Subjects—						
Religion and Ethics	1 2	1 2	1 2	1 2	½	½
Hungarian	5 4	5 3	4 3	3 3	3	3
Any modern language	... 2	... 2	3 3	3 3	3	3
Arithmetic and Geometry	5 3	5 3	4 3	4 3	3	3
Book-keeping	.....	.....	.....	.....	1	2
Natural history	3 2	3 2	3 2	.....	.....	.....
Physics	... 2	.....	.....	3 2	3	.....
Chemistry	.....	.....	... 2	.....	.....	.....
Hygiene	.....	.....	.....	... 2	.....	.....
Geography	2 2	2 2	2 1	2 1	.....	.....
History	.....	... 2	2 2	3 3	3	3
Civic Instruction	.....	.....	.....	.....	2	.....
Rural or Industrial economy	.....	.....	.....	.....	.....	2
Manual work (girls)	... 3	... 3	... 3	... 3	.....	.....
Domestic Economy	.....	.....	... 2	.....	.....	.....
Freehand drawing	3 2	2 3	2 2	3 2	3	3
Geometric drawing	2 ...	3 ...	2 ...	2 ...	... .	.....
Caligraphy	1 2	1 1	1 1	.....	.....	.....
Singing	½ 2	½ 1	½ 1	½ 1	½	½
Physical exercises	½ 2	½ 2	½ 1	½ 1	½	½
Totals	24 26	24 26	26 26	26 26	26	24

In the above, the first column in each class from I to IV and the columns V, VI are the hours for boys; the second in columns I to IV for girls. The totals are not correct, because the lines for all subjects are not included, and some subjects are alternative. There are also optional subjects outside the limits of the above programme—viz., Latin, French, music, industrial exercises of various kinds. The education of Hungarian teachers is referred to elsewhere.

The school buildings seen by the Commissioners in Hungary are finely built and finely equipped. The normal schools are almost palatial. In 1896, on the occasion of the 1,000th anniversary of the founding of the State of Hungary, the Parliament at Budapest authorised the establishment of 1,000 new public schools. Two hundred of these had been opened by the end of 1900; and it is expected that before 1905, the whole 1,000 will be opened. As an indication of the intense interest of the Hungarian teacher in his professional work, it may be mentioned that, in addition to the general association of teachers, which holds regular educational conferences, there are no less than 300 free associations, either national or provincial, which, grouped under the languages spoken by the teachers, are as follows :—

Hungarian, 259; Roumanian, 20; German, 7; Servian, 3; Slav, 2; etc.

It has already been mentioned that the Froebelian method has been warmly espoused in Hungary. In another part of the Report, reference will be made to the high state of intellectual culture in Hungary.

43.

43. *Agricultural Teaching in the French Primary School.*—Reference has already been made (section 26) to elementary teaching in agriculture in connection with primary schools. The question has been given very definite attention in France, where a commission was charged with outlining a programme of instruction in agriculture for the guidance of teachers in the rural schools. The official instruction, bearing date 4th January, 1897, gives pædagogic directions, clearly and authoritatively defining the rôle of the rural school in this connection. We translate freely from this.

"The teaching of the ideas of agriculture, which may be permitted in the programme of the elementary school, ought to be addressed less to the memory of the children than to their intelligence. It ought to depend upon the observation of everyday facts in agricultural life, and upon such simple experimentation as the material sources at the disposal of the school will allow, and ought also to be so designed as to elucidate the fundamental scientific notions of the most important agricultural operations. Above all things, it is necessary to instruct the children as to the 'why' of the operations, with the explanation of the accompanying phænomena, and not burden them with the detail and carrying-out of the process. Still less should one give a *résumé* of directions, or of definitions and agricultural receipts. To know the essential conditions of development in cultivated plants, to grasp the reason of the customary work in ordinary cultivation, and to understand the *rationale* of the hygienic rules which concern man and the domestic animals is what is wanted from the beginning by every agriculturist, and what can only be acquired by following the experimental method."

"A teacher is taking a false route when his agricultural instruction is based merely upon a study and repeating by the pupil of matter in a manual of agriculture. However well conceived that manual may be, it is necessary to have recourse to very simple experiments, and above all to observation."

"In fact, it is only by bringing the phænomenon to be observed under the very eyes of the children that one can really teach them to observe, and can establish in their minds the fundamental ideas upon which modern agricultural science rests, ideas that the country scholar can get only at school. It will not be necessary to teach him that which his father knows much better than the teacher and will certainly learn by practical experience."

"The end to be attained by primary agricultural teaching is, therefore, to initiate a large number of our country school children into such elementary knowledge as is indispensable in reading with profit a work on modern agriculture, or in thoroughly following an agricultural conference. *It is in this way that it is possible to create in them a love of country life and a desire not to change it for the life of the town or the factory, and to make them realise the truth that the calling of the agriculturist, the most independent of all callings, is, for practical workers, intelligent and properly-instructed, far more remunerative than many others.*"[1]

"In short, all that is demanded of the rural teacher is to give his pupils, in whatever measure their age will allow, a taste for and understanding of agricultural matters. In giving unity to his scientific and agricultural teaching, which ought to form a well co-ordinated whole, where the notions of physical and natural science, those of agriculture and hygiene, and it may be added (in the case of girls) those of domestic economy, intimately penetrate and complete one another, he will succeed in this without in any way burdening his programme."

A little reflection will shew that in the ordinary country school a well-educated teacher will have no difficulty in making his teaching on scientific subjects at once practical, interesting, and educative.

It may be added that school gardens are becoming a feature of French schools, and that the value of fertilisers is practically demonstrated by growing various plants under different conditions—that is, in soils starved as regards the type of nutriment required by the plant, and in soils in which the substances lacking are made good artificially.

44. *Elementary Maritime Education in Primary Schools.*—Among special forms of primary education may be mentioned elementary maritime education. This exists in France, Belgium, Denmark, and other places. In the first-mentioned country it was determined by a resolution of the 20th September, 1898, that object-lessons suitable to the career of the sailor and fisherman should be given in the primary schools along the coast. The details were decided by a common agreement between the Ministries of Marine and Public Instruction. As a reason for undertaking such instruction it was stated that the conditions of the fishing industry had for some years past been greatly modified, so that fishing-boats were compelled to go so far out of sight of the coast in order to obtain enough fish to make their occupation adequate, remunerative, and regular. It was, consequently, necessary to give the fisherman at least an elementary knowledge of navigation.

The professional instruction of the fisherman is, of course, of the most rudimentary character. Their general ignorance of the essential conceptions of navigation led, it was said, to consequences only too well known. Many disastrous events could have been avoided had the sailor been able to take even ordinary account of the track of his vessel, and to fix his position from time to time upon the chart. Ability to do this meant the avoidance of the frequent losses of fishing-boats caused by inexperience of the fishermen; losses that seriously affected an industry which, for the population on the littoral, meant so much.

A remarkable feature of this instruction is not only the young pupils are the recipients of such instruction, but with them are pupils of all ages.

The development of the courses is as outlined hereunder:—

(1) *Middle Course.*—

(1) The occupation of the fisherman; its various advantages; informal conversations concerning its value from a personal and from a national point of view; maritime registration.
Notions of marine hygiene—feeding, clothing, swimming, etc.
Maritime fishing—deep-sea and coast fishing; navigation; coasting and long sea journeys.
Description of a local fishing-smack; a visit to a smack and to a lifeboat.
Definition and use of various parts of the fishing-boat.
Different classes of vessels—brig, schooner, sloop.
Different parts of a harbour; nautical terms; nautical terms common in English; foreign flags. (2)

[1] The passage is not italicised in the original.

(2) Practical maritime notions.
Practical astronomy—some of the constellations; the pole star; apparent motion of the sun; inequality of the days and nights; the equinoxes; the moon and its phases.
The sea—tides, flood and ebb; the tidal almanac; the equinoctial tides.
Maritime charts—their use; elementary exercises with them; depths, soundings, light-houses, beacons, semaphores, buoys.
Magnetic needles and their properties; compasses—declination, variation; the ship's log.
(3) Practical local teaching.
Geographical study of the neighbouring coasts—for example, the French and English coasts visited in coastal fishing; local fishing-grounds; walks upon the coast; plants and animals.
(4) Practical exercises—manual work.
Sailors' knots—demonstrations and exercises; making fast; splicing; block and tackle; fixing and unfixing block and tackle; making and mending; visits to sailmakers, to rope-yards, etc.; demonstration of ordinary working.
Principles of swimming.

(2) *The Higher Course*—
(1) Notions of navigation.
Movement of the stars; equator, parallels, meridian; position of a star.
Ecliptic—position of the sun in relation to the horizon and the prime vertical.
Measurement of time.
Marine charts—pointing the chart when in view of the land; reducing soundings to the zero of the chart. Use of the compass—the route by the compass; the magnetic route; the true route; points of the compass. Leeway.
The sextant—its use; practical determination of a position at sea.
The barometer, and prediction of the weather. Cyclones.
International codes of signals.
Elementary notions of marine legislation.
Legal condition of seamen. The maritime registration. People subject to registration. Military obligations of people registered. Advantages accorded to registered seamen. Organisation of the service. Coastal police and coastal fishing.
(3) Notions of hygiene.
The hygiene of the fishermen. "First aid" for the wounded and sick. The use of the principal remedies which should be kept on fishing-boats; their care on board.

At the present time education of this kind is perhaps quite unnecessary in New South Wales. The fact that it is given in several countries will, however, serve to illustrate the tendency in the educational systems of some countries to take direct account of the practical needs of the people. This intensely practical orientation of education is, under certain circumstances, undoubtedly desirable, and it ought to be borne in mind that it is not wholly inconsistent with making such instruction of some educative value in the liberal sense.

Although the above programme is the French one, very similar instruction is given in a school at Ostende, in Belgium, and at Frederikshavn, in Denmark, and probably at numbers of other places overlooked by the Commissioners.

It is mentioned purely as an example of practical tendency.

45. *Conclusion.*—Some reference is made in the next chapter to Russian education. A complete outline of each system is not possible in the very limited time at disposal. Special features will be discussed in various chapters, in dealing with subjects in which the teaching calls for reform. The great difference between our educational system and the systems of Europe is in the inadequate provision made by us for the training of our teachers, and in our utilising, as in England, but not in Europe, the services of children as teachers.

This is the blot on our system, and it reacts unfavourably upon the teachers themselves. Its discussion, however, is a matter which must be left to chapters specially dealing with the education and training of teachers. The tendencies of modern education will also be hereinafter discussed.

CHAPTER VII.

CHAPTER VII.

Public Instruction in Russia.

[E. P. KOVALEVSKY. EDITED, G. H. KNIBBS.]

1. *General.*—Most of the educational institutions in Russia are under the direction of the Ministry of Public Instruction. There are, however, many special schools, which depend upon the other administrative departments. To the latter belong a series of technical and commercial schools, and a complete system of agricultural schools.

The need of men with higher technical education is very sensible in Russia, and the influx of the secondary students wishing to enter the special higher schools is increasing every year. The demand for entrance increases in even greater proportion than is possible for these schools to receive. In the year 1898, 7,000 petitions were presented in the different institutes, while only 2,000 students could be admitted.

The Government has shewn itself ready to help the progress of technical instruction. Since the year 1895, five large higher establishments, viz., a Polytechnical School in St. Petersburg, one in Warsaw, and one in Kieff, a Technological Institute in Tomsk, and an Engineering School in Moscow, have been established in these different parts of Russia. Taking into consideration the importance that chemistry has lately acquired in Russian industry, the State has constructed new laboratories in the existing schools, viz., in the St. Petersburg Technological Institute and the Riga Polytechnical School, in the hope of increasing the number of the students of the chemistry departments, which till now formed only 26 per cent. of all technical students, the balance, 74 per cent., being mechanics.

The expenditures of the Ministry of Public Instruction alone, for the support of the higher technical education, amounts to a million and a half of roubles (about £164,000); the Ministry of Finance assigned more than seven millions (about £764,000) for the construction of the last Polytechnical School.

2. *Higher Technical Institutions.*—There are at present thirteen superior technical institutions in Russia, with 8,000 students in them; four technological institutes, four polytechnical schools, two engineering schools, one of civil engineering, one of mining and one of electro-technics.

The aim of all these establishments is to train engineers for the service of the State, competent to act as foremen in factories, industrial enterprises, and on the public works.

The students are accepted graduates of a secondary school after a competitive examination. They attend the institute for five years, the last being a *practical* course. Besides their occupation with theoretical studies, the students are sent every summer to practical work, in factories and railroads.

The list of the thirteen higher schools is the following:—

(1) The Technological School in St. Petersburg is one of the oldest technical schools, and was opened in 1828. It has two divisions, the mechanical and the chemical, attended by 1,109 students. The State assigns for it yearly 275,628 roubles (about £30,090).

(2) The Technological Institute in Kharkoff, dating from 1885, contains 685 students; receives yearly 341,544 roubles (about £37,260) from the State.

(3) The Moscow Imperical High Technical School, with 865 students, is organised like the two preceding. Of the yearly income of 269,500 roubles (about £29,440),.208,000 (about £22,690) is given by the State, and the remainder (about £6,750) is from other sources.

(4) The Technological Institute in Tomsk (Siberia) was founded in 1900 for 220 students.

(5) The Polytechnical School in St. Petersburg will be ready to be opened next autumn for 1,800 students, with the four following departments:—Economy, Shipbuilding, Metallurgy, and Electro-technics.

(6) The Polytechnical Institute in Riga has six divisions—Chemistry, Mechanics, Agronomy, Commercial Sciences, Architecture, Engineering, and is attended by 1,446 students. This school is chiefly supported by the city of Riga.

(7) The Polytechnical Institute in Kieff consists of four divisions—Mechanics, Engineering, Agronomy, Chemistry, and has a total of 710 students.

(8) The Polytechnical Institute in Warsaw, with only three divisions, and a fourth division in mining to be established next year, has 644 students, and was constructed chiefly from the means provided by the city, and by the local Polish societies, who presented, on the occasion of the Czar's visit to Warsaw, and in memory of this visit, a million for this purpose.

(9) The Institute of the Engineers of the Railways contains 886 students, and is located in St. Petersburg.

(10) The Engineering School in Moscow is attended by 300 students.

(11) To the Institute of the Civil Engineers is yearly assigned the sum of 82,000 roubles (about £8,940) by the State. The number of students in the institute is 300.

(12) The Institute of Mining in St. Petersburg is ancient, and was founded as far back as 1795, viz., in the reign of Catherine II; 480 students are studying there, and 156,205 roubles (about £17,040) are assigned yearly for this school. This institute is celebrated for its splendid mineral collections.

(13) The Electro-technical Institute, the aim of which is to prepare engineers for the State's telegraphs and telephone service, has a maximum of 300 students.

In concluding this short description of the higher technical institutions, an interesting parallel between Russia and other European States may be drawn, according to the statistical tables for the year 1898—99, exhibited last summer in the Paris Exhibition. It concerns the proportion of the higher technical students in different countries. Russia must be put in the second place after Germany, where the number of technical students was 15,000, while in Russia it reached 8,000, in Austria 3,500, in France 1,500, in Italy and Switzerland 1,200, and in Spain and Denmark the number did not surpass 500 persons.

3. *Intermediate and Elementary Technical and Industrial Education.*—This is supervised by a special division, formed in the year 1883, of the Ministry of Public Instruction. To this division was given the work of drawing up the general educational programme, which received Imperial sanction in 1888.

All the *boys' schools of middle and low grade*, directed by the division of the *industrial schools*, are divided according to the object they have in view, into five groups.

(1) The *technical schools*, with the course of the middle grade educational establishments. Their aim is to provide their pupils with a general education, and also with such an amount of technical education as is necessary to qualify them for positions as assistant engineers, or for acting as foremen in smaller industrial enterprises.

These schools consist either of four special classes, where students are received after a five years' course in a secondary "Realschule," or five years' general course attached to the last technical classes; or again, the seven classes of the middle technical school contain both—the general and the special subjects.

The number of such schools is twenty, the most noteworthy among them are the School of Krasnoonfinsk, furnishing teachers for the mine-works, the Komnessoroff School in Moscow, and the Industrial School in Lodz, qualifying persons as textile and weaving specialists.

(2) The aim of the *lower technical schools*, in which such subjects of general education are taught as are found in the programme of the higher elementary schools, is to prepare master-workmen for the factories, specialists in the ruder kind of mechanical work, machinists and draftsmen. Their number is also twenty.

(3) The so-called *artisan schools*, of which there are twenty-two of the higher and fifty-five of the lower grade, have a programme of general subjects resembling that of the elementary schools.

They must prepare master-workmen in the domestic industry, and give instruction in carpentering, carving, blacksmithing, tailoring, shoemaking, bookbinding, etc.

The most noteworthy for their specialties are:—(1) The *artisan schools of leather manufacture* in Bogorodsk and Bazarmy Karkoulac. The exhibits of the latter were sent after the Paris Exhibition to England in exchange for a collection from a *boot-making school*. (2) The *school of toy-making* in Totma. (3) The *school of bonnet-making* in Samara. (4) To the 67 *industrial schools*, with different features in their programmes, may be added the schools for adults, viz., the schools of *printing*, the evening classes of the *Imperial Technical Society*, and so forth. (5) The newly-created 18 *schools for apprentices* have for their aim the substitution for the hard years of apprenticeship in a workshop under the direction of an imperfect master, a general course, giving some general education and that theoretical knowledge necessary for an intelligent workman, besides the practice. Boys of 11 to 13 years attend these schools before entering under the management of an experienced master in a factory-workshop. Most of these schools are founded for their workmen near large factories. The general number of pupils attending all these schools (209) was, in 1900, nearly 13,000. The expenditures of the year would amount to nearly 2,000,000 roubles. Of this sum the State gives 34·9%; the local institutions, 21%; the percentage tax on capitals, 16·1%; the fees for teaching, 12·3%; the sale of objects made in the workshops by the pupils, 4·5%, and the balance of 11·2% is made up from other sources.

4. *Benefactions for Educational Purposes.*—During the year 1888-1898, while the industrial schools division proceeded with its work, the yearly income of the middle and lower grade technical schools increased from 400,000 to nearly 2,000,000 roubles, thanks to continual gifts for this aim by private persons, by townships, and by various associations.

It is proper to mention here the more remarkable of these gifts. The celebrated railway contractor Chigoff left a sum of 5,000,000 roubles (about £545,500) for the construction of five industrial schools in the province of Kostrome, where he was born. Mr. N. Kareznikoff, left 3,000,000 roubles (about £327,300) for a technical boarding-school in Irkutsk. The Councillor of Commerce, Mr. Komaroff, left 3,500,000 roubles (about £381,800) for an artisan school in Rykinsk; the merchant Pastouhoff, 380,000 roubles (about £41,500). The municipality of Moscow assigned 850,000 (about £92,700), the Magistrate of Lodz, 200,000 (about £21,800); the city of Odessa, 1,000,000 (about £109,100), and a series of other municipalities gave more than 100,000 roubles (£10,900) for the construction of the technical schools.

The intention of the Ministry of Public Instruction is to open every year two or three middle grade technical schools, five or six artisan ones, and ten or eleven schools of the lowest grade. The cost of this will amount to about 1,500,000 roubles (about £164,000) yearly; and only then will a satisfactory result be obtained, and the evident need of men with special education in Russia be satisfied.

5. *Artisan Schools to be established.*—In the year 1902 a series of *artisan schools* are to be constructed in the localities where some domestic or "kush" industry is particularly developed. In the Crimea a *coopering school* will be necessary for the vine-dressers; in Kimry (a village where leather is manufactured), a *shoe-making school;* in the agricultural provinces, *schools of agricultural machinery, etc.*

6. *Professional Schools for Girls.*—The professional schools for girls are less numerous, and their programmes, as well as their incomes, are very various.

There were in 1899-1900, forty-eight professional girls' schools, thirty professional classes and workshops, fifteen cookery schools, 105 needlework classes added to schools for general education and courses preparing teachers of needlework in St. Petersburg.

The most part of these institutions are supported by private gifts; the State assigning them only 10,000 roubles (about £1,090) yearly.

A private "society encouraging professional education for women" played the leading part in the questions concerning the programmes and the regulations of such schools.

In the year 1900 the Ministry of Public Instruction introduced into the Scientific Committee a division of professional education for women, the task of which will be to elaborate and to publish the new programmes and rules, and to discuss all special questions concerning the girls' professional schools.

7. *Technical Schools.*—To the group of technical schools belong the intermediate and lower institutions controlled by the Ministry of the railroads. They train the personnel of the staff of rail and river roads, and are of three categories:—

(1) 1. One middle-graded, the so-called school of railway conductors, preparing assistant engineers; 2. thirty-four lower technical schools of railways; 3. three so-called river schools. These two last groups train employees for the lower service on the railway and river central-systems.
(2) The six mining schools.
(3) The twenty rural workshops under the direction of the Ministry of Finance; their aim is to prepare workman able to take care of the agricultural machines and to make the simplest instruments.

8. *Commercial Schools.*—The Ministry of Finance shews a far greater interest for the supervision and the construction of the commercial educational establishments, the development of which is quite recent.

In 1894 there were only nine commercial schools with 2,500 pupils, their present number is 105, with an attendance of 18,400 students.

The commercial schools are divided into three categories:—

(1) Intermediate commercial institutions, forty-two in number with a general course of seven years, with a secondary school, or with only a special course of three years. Their aim is to prepare agents for large commercial or industrial enterprises.
(2) So-called trade schools, with a course of one or of three years, preparing employees of lower grade for the same enterprises. There are thirty such trade schools founded by private persons or by the State.
(3) The thirty-three commercial courses and classes, the task of which is to communicate knowledge in commercial sciences to persons of all ages from 12 years inclusively, already employed in industrial or commercial institutions, or having the intention to enter a like service.

The income for commercial schools is almost exclusively derived from private or local sources, such for example as local institutions, associations, and through private gifts; the State gives only 25,000 roubles (about £2,730) yearly. The yearly expenditures are 2,382,000 roubles (about £259,750); a middle grade school (attended on an average by 380 pupils) costing nearly 35,000 roubles (about £3,820), while the minimum cost of a class of commercial sciences (with eighteen to twenty students) is 300 roubles (about £33) a year. Nearly thirty-two "real" secondary schools, with commercial sections, and a course therein of three years, have been founded.

Departments of higher commercial education exist in the Riga and St. Petersburg Polytechnical Schools and in the Oriental Institute in Vladivostok. The commercial education of women is still in private hands; one can mention only two girls' commercial public schools in St. Petersburg—Demidoff's Asylum—and in Odessa; but commercial courses and classes are, as a general rule, often for both sexes.

9. *Schools of Art and of Art-industry.*—A special type of professional schools, protected by the Ministry of Finance, is yet to be mentioned—the schools of Art and of Art-industry. Besides the Academy of Arts in St. Petersburg, a higher school of sculpture exists in Moscow. Four large schools of art industry form a second category:—

(1) The central school of drawing of Streglitz. (2) The school of technical drawing of Strogonoff in Moscow. (3) A school near the Imperial Society of Art Instruction. (4) A similar one by the poet Gogol in Mirgorod. A grade lower, are ten drawing schools in all large cities and a series of evening drawing classes for artisans and workmen. In 1901 a school of industrial art is to be opened in Ekaterinburg in the Oural, with divisions for gold, silver, and stone industries.

10. *Agricultural Education.*—The agricultural education is of great importance in Russia where the greater proportion of the population is living from agriculture. Nevertheless its progress began only twenty years ago. Since then the number of schools has increased every year, and the Ministry of Agriculture and State's Domains directing this part of education could present to the last Paris Exhibition the most remarkable statistics, that speak for themselves.

	1879.	1889.	1899.
Number of agricultural schools	14	46	133
Number of students	1,292	,715	5,992
Expenditure—roubles	435,980	673,015	2,076,499
About.....	£47,560	£73,420	£226,530

All

All agricultural and forestry educational institutions, like the technical ones, are of three grades. To the higher grade belong four of them, viz.:—The New Alexandria Higher Agronomical and Forester Institute (province of Lubin, Poland); 2. The Agronomic Institute in Moscow; 3. The Forester Institute in St. Petersburg; 4. The higher courses of Oinology near the Imperial Garden, Nikitsky, in the Crimea. Besides these, the two Polytechnical Institutions in Riga and Kieff have agronomic departments in them.

All high-grade agricultural schools desire to give their students superior instruction in forestry and agronomy. The middle-grade schools, which prepare young men theoretically and practically to be foremen of landed properties and to manage with sound rural economy, are thirteen in number and have 1,599 students.

All these schools have a general secondary course of six years, besides the agricultural sciences. Some prepare vine-dressers, others sheep-rearers, others again land-surveyors. In Gorki, province of Mogilef, has been founded almost the best and the most noteworthy of the middle-grade schools, where, in an artisan section, boys are taught to take care of agricultural machines and to make the simplest parts of them.

In order to prepare teachers for the middle-grade schools, normal agricultural courses are added to the same school and to another middle-graded establishment (in Kharkoff).

The thirteen schools of the lower-grade may be subdivided into eight groups, according to the branches taught in them:—

1. 82 general agricultural lower schools; 2. 83 horticultural schools; 3. 15 dairy schools; 4. 1 school of sheep-rearing; 5. 1 agricultural-artisan school; 6. 4 women's schools of rural economy and dairy; 7. 13 practical schools for gardeners; 8. 28 for foresters.

The general aim of the whole of these schools (139), attended by nearly 4,000 students, is to spread among the rural population elementary knowledge of the agricultural sciences, and to teach the peasants different trades and handiworks useful in their life:

To complete the picture of the actual state of agricultural education in Russia, the measuring and land-surveying schools ought to be mentioned, viz., the Constantin Surveying Institute in Moscow and the five intermediate land-surveying schools.

11. *Elementary Education.*—Before entering one of the schools, the description of which occupies the first part of our chapter, most of the boys pass, as a preparatory grade, the village or city elementary school. This side of education, bearing with so much influence on the general welfare of a nation, has in Russia the following organisation:—

The direction and supervision of the elementary schools belong partly to the Ministry of Public Instruction; a certain number of schools are attached to the other departments.

Under elementary instruction are included—1. Elementary schools of one class with a course of four years; 2. Higher elementary, to which belong the district school, the town school of five classes, and the ministerial two classes model school, with a course of five years; the same grade occupies the second graded school of the Department of the Holy Synod.

The elementary school gives cognisance of the immediate surroundings of the pupils—the first religious instruction, the mother-tongue, reading from printed matter and manuscript writing, arithmetic, and church-singing.

The higher-grade elementary programme includes geography, Russian history, geometry, drawing, draughting, singing. If possible, a trade or school-gardening instruction is added for the boys, and needlework for the girls.

In the course arranged by the Holy Synod great stress is laid upon religious instruction.

Children of both sexes may attend elementary schools; the education of this grade is gratuitous.

The elementary schools of the Ministry of Public Instruction are generally founded by Cities, Zemstvos, Communes or private individuals. The local direction belongs to the district and provincial school-councils, composed of representatives of the Ministries, the clergy, and the local institutions, which give means for the supporting of the schools; the presidency belongs to the local president of the nobility. The immediate supervision depends upon inspectors of public schools in the districts, and directors of public schools in the provinces.

The so-called schools of reading, where pupils are simply taught to read, to write, and to count, and parochial schools of the same grade as the elementary ones above mentioned, are supervised by special school-councils, depending upon local bishops and directed by the school-council situated near the Holy Synod.

To the elementary instruction system must be added the evening and the Sunday schools for adults, founded, for the most part, by private persons. These schools complete the activity of the elementary ones, the attendance of which is far from being obligatory, except in the provinces of the Baltic Sea, Finland, and the Domain of the Cossacks, where compulsory school laws are in force.

School is not yet everywhere accessible for all children of school-age, owing to the great distances to be covered. The actual care of the Ministry of Public Instruction and of the local institutions is to cover the country with a sufficient number of rural schools.

The best results are attained by the province of Moscow, where elementary schools can now be attended by all children of suitable age, and the result shews that in these circumstances no compulsory measures are needed to force the children to go to school.

The last statistics, published by the Department of Public Instruction in the year 1899, shew that in 1898 the total number of elementary schools was 78,724, with 3,801,133 pupils of both sexes—the 30,000 professed Hebrew and Mussulman schools are not included in this list—32,708 of them were attached to the Ministry of Public Instruction, including 1,114 Sunday-schools with 2,339,934 pupils.

The Holy Synod directed 34,836 schools, with only 1,116,492 pupils. The expenditure for elementary instruction is now nearly 80,000,000 roubles (about £8,727,300) a year, of which 58,000,000 (about £5,273,700) is assigned by the State, and the remainder is provided by local institutions and private persons.

This total number of elementary schools cannot be sufficient for a population of 120,000,000, but the historical development of the people's instruction in Russia took place before the middle of the 19th century in very unfavourable conditions.

Progress began with the abolition of serfdom in 1861, and the introduction of the self-governing local institutions in 1865.

The parallel between the actual statistics and the figures of the year preceding the reforms of the Czar Alexander II testifies to the efforts made by Russia in this direction. In 1856 in the whole country, there were 8,227 elementary schools with only 45,000 pupils in them.

12. *Secondary Education.*—Secondary education is open to both boys and girls of all social classes.

The girls' gymnasiums and progymnasiums, which have a complete secondary course, 376 in number, as the last statistics shew, are often public secondary schools with almost the same course as the masculine one, except as regards the ancient languages. The course of study is seven years; to some of the gymnasiums an eighth pædagogical class is added to prepare teachers wishing to embrace that career. For student-graduates of gymnasium without an eighth class, a pædagogical course is formed for the same purpose. Among these schools, 346 are attached to the Ministry of Public Instruction, and 30 are directed by the Society of the Empress Maria, which founded, and is now supporting, 32 institutions, viz., secondary boarding schools for girls. To complete the number of secondary schools for girls, we must add to the establishments mentioned above, 69 secondary parochial schools, the general object of which is the education of the daughters of the orthodox clergy.

The 477 secondary establishments, according to the best statistics, published a year ago, were attended by 129,000 girls.

The secondary schools of general instruction for boys are on the point of being radically reformed in their programmes, system, and tasks. Till the year 1900 they were divided into classical gymnasiums, progymnasiums and real schools (Realschulen.) The former (191 gymnasiums and 53 progymnasiums) prepared during a course of eight years for the university, and based their educational system on the study of classical tongues. The second type of schools (115 in number) consisted of seven classes, and gave entrance to all higher technical schools.

13. *Reform of Secondary Education.*—The expected reform of the secondary educational system (which system is recognised as defective and unsatisfactory in Russia) was made first by the last Minister of Public Instruction, Mr. Bogolepoff, who assembled in 1899 a special commission to discuss the matter. But the final execution of the change will belong to the tasks of the Minister, the General Adjutant, Mr. Vannovsky, called to this responsible post by the memorable Imperial decree of 25th March, 1901, which ran as follows:—

"The experience of the last years has shewn such important defects in our educational system that I believe it is time to begin without delay its radical examination and correction.

"Fully appreciating your experience as a statesman, and your highly-cultivated mind, I choose you as my companion in the work of renewing and of reconstructing the Russian school."

It seems evident that not only the secondary system was meant by these last words. They also concern the immediate reform of the organisation of educational institutions of higher grade—viz., the universities.

14. *Superior Education.*—There are ten universities in Russia in the towns of St. Petersburg, Moscow, Kieff, Charkow, Odessa, Warsaw, Kazan, Yurieff, Tomsk, and Helsingfors.

Every university is composed of four faculties:—History and philology, law, medicine, science and mathematics. There are three exceptions to this general rule, viz:—The University of St. Petersburg where, instead of the medical faculty, is the department of Oriental tongues; the University of Yurieff, where to the four faculties is added the theological one (preparing Protestant clergymen); and the University of Tomsk, which till now contains only two faculties—law and medicine.

The admission of students, graduates of secondary classical schools, takes place every autumn without special examination. The course of study is four years, after which a State examination takes place for university graduates wishing to enter the State service.

The interior organisation is expected to be so thoroughly changed before the next semester that we do not consider it convenient to give its description now.

Besides the thirteen technical institutes, the four agricultural schools, and the ten universities, there are eighteen higher-grade educational establishments in Russia, viz.:—

Two special medical schools—the Imperial Military Medical Academy in St. Petersburg, and the Clinical Institute of the Grand Duchess Elena Pavlona; three historic-philological institutes in St. Petersburg and in Niegine; two higher schools of Oriental tongues in Moscow, the so-called Institute Lazareff; and in St. Petersburg three lyceums and one higher school of law, the Alexander Lyceum, and the school of law in St. Petersburg, the Lyceum Demidy in Yaroslaf, and the Nicolas Lyceum in Moscow; four higher veterinary institutes in Kharkoff, Warsaw, Kazan, and Yurieff; one Academy of Arts in St. Petersburg, and three higher establishments for women.

These last deserve especial attention, being founded and supported exclusively by private societies. The oldest of them, the superior courses for women in St. Petersburg have, like the universities, a course of four years and two faculties—the historic-philological and the faculty of mathematics. Quite lately there was a question of adding an agronomical section to these two. The number of women attending the courses is nearly 1,000; the expenditure of the society supporting them is 144,000 roubles yearly (about £15,710).

The second institution founded five years ago on similar conditions was the Women's Medical Institute in St. Petersburg, with a five years course of study, attended also by nearly 1,000 women students. The third school is the High Course in Moscow, to which next year a Medical Institute will be added.

The total number of superior educational institutions in Russia, including the higher military, naval, and ecclesiastic schools, is 55, with more than 30,000 students attending them, which number was three times smaller (10,000) in the year 1877—that is to say, twenty years ago. The system of the military schools includes the same, three grades—four schools of higher grade, or academies—the Nicholas Military Academy, the Military Jurisdiction Academy, the Military Engineering Academy, and the Artillery Academy. A grade lower are the eight officers' schools.

The

The secondary educational institutions are all boarding-schools, called corps of cadets, destined for the children of officers. The higher classes, which the cadets must pass before being qualified as officers, are called the Junkers' Schools.

For superior instruction of naval officers, an Academy and a Naval Engineering School in Kronstadt have been founded. The intermediate education is given in the Naval Corps in St. Petersburg, including three years general course and three years of special sciences. The lower naval education is given in the 44 sailors' classes.

The ecclesiastic schools of three categories prepare the orthodox clergy.

There are three orthodox academies, one for Roman Catholics, and one faculty in the University of Yurieff for Protestants. The system of the secondary schools consists of 65 seminaries. The lower grade consists of 55 ecclesiastic schools, but both serve for the education of the children of the orthodox clergy. All these schools are attached to the Holy Synod.

15. *Conclusion.*—Russia is generally regarded as a country which remains far behind in questions of public instruction; but it must be taken into consideration that the commencement of public instruction is very recent, and that the Russian State and society have been working at it only for the last thirty-five years. The efforts made during the last twenty years have been most remarkable, as was testified by the experts and visitors of the Education Section in the last Paris Exhibition, where more than sixty editions, concerning all aspects of public instruction, were published and distributed by the Russian Division. This division was the largest after the French one in the number of schools exhibited, and in the printed matter. Besides organising them, the Russian Government assigned 50,000 roubles (about £5,455) for the journey of 600 Russian pædagogues to Paris during the summer 1900, to allow of their studying the different methods and systems of instruction, which might be of great use to them if applied in their practice at home.

For this sketch the Commissioners are indebted to Mr. E. P. Kovalevsky, member of the Scientific Committee of Public Instruction.

CHAPTER VIII.

CHAPTER VIII.

The Primary School System of France.

[J. W. TURNER.]

Introduction.—At the head of educational administration in France stands the Minister. He directs public education and exercises such a control over private education as to secure a proper fulfilment of the State's demands.

Bureaux.—In carrying out the work of administration the Minister is assisted mainly, in the first place, by three distinct Bureaux—the Bureau for Superior Education, the Bureau for Secondary Education, and the Bureau for Primary Education. The Director of Primary Education is the head of the Primary Bureau, which administers and controls the work of Primary Education.

Superior Council.—The Minister, in the second place, is assisted by the Superior Council, consisting of 57 members, whose function is chiefly to deal with questions of general administration.

General Inspectors.—In direct correspondence with the Minister are the General Inspectors, whose duty it is to inform him on all matters that concern primary instruction in the particular Departments in which they operate, and to see that his instructions are made known and carried out. Their work has a fourfold object:—

(*a*) They are an essential means of information for the Minister.
(*b*) They visit Normal Schools and a certain number of Primary Schools.
(*c*) They make careful estimates of the services and conduct of all officers, Academy Inspectors, Primary Inspectors, Directors, Directresses, Staff of Normal Schools, Staff of Upper Primary Schools.
(*d*) They prepare a general and comparative account of the progress of Public Instruction in their Departments.

There are nine General Inspectors in regular service, and two in special employment; one is Director of the Superior Normal School at St. Cloud, and the other is the Director of the Pedagogical Museum and Central Library. There are also General Inspectresses.

The circuit in which the General Inspector works is fixed each year. As a rule he retains control of his division for two years. The object in the frequent change of his sphere of action is to familiarise him with different parts of the country, and to enable him to make comparisons on all that concerns schools and their methods, the character of the children and the worth of the teachers. The General Inspector and the Rectors of Academy draw up a list of the proposals for promotion of Primary Inspectors and staffs of Normal and Upper Primary Schools, and forward it to the Minister for approval.

Rector's Duties.—France is divided into 87 political Departments, which are, for the purpose of education, distributed among 17 divisions called academies. At the head of each academy is the Rector, who is chief of the public educational establishments in his Division. Each Department is compelled by law to have its training colleges for males and females. The Rector's duties are very comprehensive, and his powers correspondingly great. The entire management, financial and administrative, of training-schools in his Division is under his control. Acting on behalf of the Minister of Public Instruction, he can suspend or expel students of the training colleges. He exercises a personal influence over the students, pays regular and frequent visits of inspection to the colleges, and reports on the work of the members of the teaching staff and estimates their usefulness. The Rector also exercises considerable control over the upper primary schools of his Division, particularly in regard to methods of instruction. Appointments to the teaching staff of the upper primary schools are made by the Minister of Public Instruction, and it is one of the duties of the Rector to report on the teaching capacity, conduct, and worth of each member of the staff. Appointments to the elementary schools are made by the Prefect of the Department, but the Rector has an indirect influence over the staff, and complete authority as to the methods of instruction employed. He conducts inquiries, recommends books to be used, inspects for purposes of organisation, arranges pedagogical conferences, attendance at which is compulsory, and keeps closely in touch with all the working of the primary and maternal schools of his Division. He controls all examinations, nominates committees of examiners for conducting examinations for elementary and upper school diplomas, and for the certificate of aptitude. The Rector has the right of inspecting private primary schools. This inspection has reference to the moral tone and hygienic conditions of the institution; to the instruction, so far as he may be enabled to ascertain if it be in accordance with the moral teaching, the constitution, and the laws of the State; and, finally, to all matters required by the law bearing on private schools. He has also the control of secondary education within his Division. The appointment of Rector is by order of the President of the Republic, and candidates for the position must have the degree of Doctor.

Academy Inspectors.—In carrying out his multifarious duties, the Rector has the assistance of Academy Inspectors. These gentlemen are very active agents in the work of school administration. They are chosen from the ranks of secondary school teachers, and are appointed by the Minister of Public Instruction. There is an Academy Inspector for each Department, with his head-quarters at the chief town. He works under the immediate supervision of the Rector in the primary, upper primary, secondary, and normal schools, and gives general attention to the methods employed, the discipline, organisation, and the teaching staff. He is the veritable head of primary instruction in his Department.

Training Colleges.—He acts upon the Minister's and Rector's instructions, and presides over the advisory committees attached to the colleges. He sees that all regulations and programmes are obeyed, inspects the student classes and forwards a report to the Rector, and furnishes annual reports on the teaching staff of the training schools. In connection with the colleges, he conducts all investigations concerning the candidates, deals with admissions, examinations, and all matters of financial administration. The economic arrangements of the training colleges, which are residential are in his hands.

Upper Primary Schools.—He has similar power and duties in connection with the upper primary and elementary schools. The personnel of the staff, the discipline, the programmes of these schools, are all estimated by him in an annual report forwarded to the Rector. He is the president of the examination board for the brevets de capacité and for the certificate of aptitude.

Elementary and Maternal Schools.—The administration of the maternal and elementary schools is largely controlled by the Prefect of the Department, assisted by the Departmental Council. For appointment to this class of schools two classes of teachers are employed—Stagiaire (probationary) and Titulaire (certificated) teachers.

Brevet élémentaire.—The qualifying examination for teachers in France is the brevet élémentaire, and the standard of the examination is the Upper Primary School course. The test is both written and oral. The subjects in the written test include dictation, writing, French composition, and arithmetic, and in the oral test reading, geography, history of France, civic instruction, music, and science.

Certificate of Aptitude.—The examination for the certificate of aptitude is held once a year. Candidates must be 21 years of age, must hold the brevet élémentaire, and have had two years' experience in practical teaching. The examination consists of three parts—written, practical, and oral.

The written test.—French composition—subject of elementary education.

The practical test.—Teaching a class in a public primary school.

The oral test.—(*a*) An estimate of pupils' work in the monthly exercise book.
(*b*) Answers to questions on school management.

Appointments.—The Stagiaires are appointed by the Academy Inspector, the Titulaires by the Prefect on the recommendation of the Academy Inspector. The Prefect can refuse to appoint the Academy Inspector's nominee, but he himself cannot nominate, and must act on the formal proposal of the Academy Inspector. The Academy Inspector also recommends on the question of transference of teachers from one position to another. There is little conflict between the two authorities, but should mutual settlement be impossible, the matter is referred to the Minister of Public Instruction for final decision.

The Duties of the Prefect are:—

(*a*) To preside over the Departmental Council.
(*b*) To appoint teachers of elementary schools.
(*c*) To submit questions to the Council.
(*d*) To act as guardian of the administrative and financial interests of the communes of his Department.
(*e*) To assist in everything bearing on the schools' interests.

Departmental Council.—There is a Departmental Council at the capital of each Department, composed as follows:—

(*a*) The Prefect as President.
(*b*) The Academy Inspector as Vice-President.
(*c*) Four general councillors (chosen from the General Council assisting the Prefect).
(*d*) Head of the Training College.
(*e*) Four teachers—two of each sex—elected by colleagues.
(*f*) Two Primary School Inspectors appointed by the Minister. One lay and one church member are "co-opted" to represent private school interests, and advise the Council on matters connected therewith. The Council is elected for three years.

Its Work.—Its members discuss the whole scheme of instruction, and deliberate on reports and proposals of the Academy Inspectors. They hear and discuss every year a general report from the Academy Inspectors on the state and needs of both public and private schools. The Academy Inspector, it would appear, submits important questions on school administration for the deliberation of the Council.

Its Administration.—The Council fixes the number, nature, and position of public primary schools, and the number of teachers to a school in each commune. The question of the establishment of schools is submitted by the Prefect. The Mayor of a commune can oppose the opening of a private school within his jurisdiction. The Council decides upon the equipment of the schools, the commune paying the cost. It determines the attendance of pupils in private boarding schools, and the number of masters, authorises the attachment of a boarding-house to the public primary schools, draws up the list of Titulaires, fixes the number

number of students to be admitted to the training-schools, deals with promotions on the report of the Academy Inspector, who has been advised by the Primary School Inspectors, and finally hears all charges against teachers. The Academy Inspector has power to reprimand a teacher, but no punishment can be pronounced against a public or private school teacher without the intervention of the Departmental Council. The accused has the right to engage counsel when charged before the Departmental Council.

The Departmental Council, is in reality, in every Department the regulator of public primary education, the judge of its teachers, the arbiter of the interests of the communes in all educational matters. No important act of school life is accomplished without its intervention. It is engaged with the erection and establishment of schools, the appointments of teachers, and estimates of their merit or defects. Everywhere the law appeals to its initiative and control.

Primary School Inspectors.—In 1900 there were 425 Primary School Inspectors. They are placed under the immediate control of the Academy Inspectors, and receive their instructions from them, the Rectors, General Inspectors, and Minister. They inspect public and private schools—primary and upper primary. They second the Academy Inspectors in their administrative and pedagogical control. Their formal duties include approval of time-tables, classification of pupils, inspection of programmes, establishment of new schools, opening of private schools, supervision of School Fund.

In connection with the supervision exercised by the different Inspectors over the private schools in France, the Commissioner would point out the extreme vigilance shown in the establishment and maintenance of these institutions. The same regulations which provide for admission to the public schools apply to those seeking employment in private schools; the same general conditions and entrance qualifications are required by the State. The duties of the Primary School Inspectors towards the private schools are identical with those of the Academy Inspectors. It is impossible for an ignorant or unqualified person to establish a private school in France, or to teach in one. In the first place the proprietor must satisfy the Inspectors and the Mayor of the commune that all hygienic and sanitary conditions have been observed. In the next place the standard of public instruction—intellectual and moral—must be maintained.

The Primary Inspectors preside at the Cantonal conferences, act on the examining board for the brevet of capacity (a literary certificate) and the certificate of aptitude (professional), and for admission of candidates to training-schools. With respect to the school staffs, their duties are no less considerable. They judge the teachers in their instruction, discipline, and educational work, their fitness, their conduct, and their moral character. The reports which they forward to the Academy Inspectors must furnish an exact picture of the schools visited, must point out the defects as well as the merits; in a word, must fully inform the Academy Inspector on the work of the school, teachers, and pupils, and on the way in which the programmes, regulations, and lessons are carried out. It is upon these reports that the Academy Inspectors form their own judgment and decisions regarding promotions and rewards. There is no examination, either of teachers or of schools, similar to our own. The supervision of the school staffs is not all the work Primary School Inspectors are called upon to perform. While the Inspectors are required to vigilantly supervise every branch of school work and organisation, they are above all expected to act as guides and advisers to the teachers placed under their authority.

Appointment of Primary Inspectors.—Primary School Inspectors are appointed by the Minister on the result of a special examination of a very high standard. So comprehensive and so varied a function as that of Primary Inspector demands a superior staff, and since the establishment of the present primary school system in France, an attempt has always been made to secure the most highly qualified men for the duties.

The Examination for Primary Inspectors.—The examination for Primary Inspectors consists of three parts—written, oral, and practical.

Written Test:—Two theses (*a*) Pedagogical subject; (*b*) School organisation.

Oral Test:—Two parts (*a*) Explanations of passages in French Literature; (*b*) Exposition of theoretical or practical pedagogy, and questions of school administration and legislation.

Practical Test:—Inspection of a normal school, an upper primary, an elementary, or a maternal school; to be followed by a verbal report.

The 1900 Report on Primary Education, dealing with the question of Primary Inspectors, contains the following statement:—"This examination has borne out the highest expectation of its advocates. To comprehension and profound knowledge our Primary Inspectors join an *indefatigable good will and devotion, and they have been able to acquire, with the esteem of all, the confidence and affection of their subordinates.*"

Candidates for primary inspectorship must not be less than 25 years of age, must have spent not less than five years in public educational establishments—superior, secondary, or primary—or must possess one of the following titles—a certificate of aptitude for mastership of the normal and the upper primary schools; a diploma in letters or science; a certificate of aptitude for special secondary schools; a bachelor's degree in letters or science; or a bachelor's degree for special secondary education. Public School teachers (titulaire) are exempt from producing the certificate of aptitude for mastership if they have ten years of service, whether as head teacher or assistant in an elementary or upper primary school, and if they are provided with the brevet supérieur (the final examination of the Normal course) and the certificate of aptitude (professional).

Inspectresses.—Primary School Inspectors exercise control over boys', girls', mixed, and maternal schools, but it has been deemed advisable to appoint Inspectresses. The qualification for the office of Inspectress is the certificate of aptitude for primary school inspection. The control of the girls', mixed, and maternal schools, in certain districts, has been entrusted to Inspectresses. They have the same powers as Inspectors except with regard to the creation and construction of new schools. So far they have only

only been appointed in two populous centres—the Department of Paris, where two are employed, and the Department of Seine-et-Oise, where one is engaged. In addition to the Primary School Inspectresses, there are the General Inspectresses already mentioned, and nine Departmental inspectresses in five Departments, whose work lies in the maternal schools.

The practice of appointing Inspectresses has not been considerably extended because of the excellent services rendered by the Primary Inspectors, who, by reason of their general and superior qualifications, are able to exercise a competent and effective supervision over all branches of primary instruction. The Inspectors are so well qualified to deal with girls' and maternal schools as to render unnecessary the appointment of female Inspectors.

Citizen Committees.—In France there are Boards of Citizens possessing the right to enter freely any public or private school, and to pass judgment on the moral and educative results of the instruction. There are three such bodies :—

(a) Members of the Departmental Council appointed for the purpose.
(b) The Mayors.
(c) The Cantonal Delegates.

The Departmental Council has power to delegate to one-third of its members the right to enter the public and private educational establishments within its jurisdiction. The Mayor has also the right to inspect schools within his own municipality. The Cantonal Delegates are appointed by the Departmental Council for a term of three years, and under its direction they visit and supervise the public and private schools of the Canton. Particular schools are definitely assigned to each one in his own Canton, and thus these Delegates become one of the most important wheels upon which the whole school organisation revolves. They occupy an intermediary position between the commune and the State with regard to the needs and conditions of local education. With so many governing bodies dealing with public instruction in France, confusion arose; but all difficulties were removed by an order of the Minister that the inspection of the Delegates should be upon the condition of the buildings and materials, on the sanitary arrangements, and on the deportment of the pupils, but that it should have nothing to do with the instruction. The Minister's exact words in a circular addressed to the Prefects indicated the limit of the powers of the Delegates thus :—"Do not ask them to judge methods and books. Ask them if the children who have been for some time in the schools have been sufficiently instructed, if they are healthily located, if they are receiving good precepts and, above all, good moral examples; if they are acquiring habits of neatness, politeness and of mutual kindliness—in a word, if they are being well trained." In a later circular the Minister says :—"I do not forget that we must not demand of the Cantonal Delegates those comparisons of methods, those minute investigations, those technical judgments, that the Education Department demands of the Primary Inspectors. The Delegates are in the eyes of the law the representatives in the school of the parents. It is in the name of the parents that their influence makes itself felt and that their authority is exercised." In a still later circular the Minister says :—"Let the Delegate but remember that if he feels constrained to see everything, to hear everything, and to observe everything, it is not from the technical point of view of the professional man, but from the more general point of view—that of the family and society. Let our teachers themselves not forget that our public primary education should not isolate itself, *shut itself up*, defend itself against the ceaseless intervention of society, against outside criticisms, observation, or control."

Attendance Committee.—Beside the committees above-mentioned, there are two institutions intimately associated with the question of school attendance—the School Commission and the School Fund. The Municipal School Commission to supervise and encourage school attendance is composed as follows :—

(1) The Mayor or his Deputy	President (ex officio).
(2) Cantonal Delegate	Appointed by Academy Inspector.
(3) Members	Appointed by Municipal Council.
(4) Primary Inspector	Ex officio.

The Committee deals with all cases of violation of the compulsory regulations. Those parents who attempt to evade the compulsory provisions of the Act cannot escape the vigilance of the School Commission, who, by paternal observation or by measures of repression, have the duty of bringing the negligent or recalcitrant families to a re-observance of the law. The question of irregular attendance in cases in which poverty is proved is met by the establishment of the School Fund, controlled by the School Commission. Its purpose is to enable assistance to be given to indigent pupils by way of school books, clothing, paper, &c. The maintenance of the School Fund is obligatory on the part of every commune.

Financial Administration.—Generally speaking, it may be said that the public schools of France are erected and maintained by the commune, and that the teachers are paid by the State.

General Outline of the Primary School System.

In the chapter on Kindergarten it will be seen that primary education in France starts with the maternal school. This is followed by the infant class, which is intermediate between the maternal and the primary school, and in some cases really takes the place of the maternal school. The age of admission is four years.

The programme of the infant class is as follows :—

Physical Education.—

(*a*) Inspection for purposes of cleanliness, on pupils' arrival.

(*b*) Supervision of games, particular attention given to those pupils physically weak.

(*c*) *Gymnastics.*—Rounds, marches, games, accompanied by songs.

Manual Work for Boys.—

Weaving, folding, cutting, basketwork.

Manual Work for Girls.—

Weaving, folding, knitting, simple Froebelian exercises.

Intellectual Education.—

Reading.—Letters, syllables and words.

Writing.—Simple elements.

French.—Combined exercises in language.

Oral Exercises.—Informal questions—aim being to lead children to express themselves clearly, and to correct faults of pronunciation or local accent.

Written exercises.—on paper—dictation of one, two, or three words—then short phrases.

Reading—by the teacher—pupils giving meaning in their own words.

History.—Stories, biographies taken from national history, tales of voyage explanation of pictures.

Geography.—Familiar chats, simple preparatory exercises, serving specially to arouse the spirit of observation in the children, by leading them to notice simple phenomena, and irregularities in the ground.

Reckoning.—Addition and subtraction of concrete numbers to 100. Study of the numbers up to 10, and of the expressions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$—four operations in numbers of two figures—simple metric terms.

Drawing.—Combination of lines, representations on paper with ordinary pencil or coloured strokes, simple designs on paper in squares, reproduction of drawings made by teacher on the board, representations of the simplest common objects.

Common Elements of the Physical and Natural Sciences.—Elementary ideas on the human body, simple hygienic advice, comparative study of animals, plants, minerals, known to the child, objects to be placed before the child wherever practicable; simple lessons on the seasons, air, water, &c.; chatty conversations. The object of such teaching is to train the pupil to look, to observe, to compare, to question, and to retain. In these lessons the teacher is expected to combine on every possible opportunity the object lesson, the drawing, the moral lesson, the games and songs, so that the unity of impression of these exercises may have a lasting effect upon the mind and heart of the child. The teacher is also expected to regulate as far as possible the order of the lessons by the order of the seasons, so that Nature itself may furnish the objects of the instruction, and the child contract the habit of observing, comparing, and judging.

Singing.—Simple songs of the maternal school, and songs in two parts by ear.

Moral Education.—Simple chats and remarks intermingled with all lessons, exercises and recreations in the school and playground; simple pieces of poetry explained and learnt by heart; simple short stories related and followed by questions to find out if the meaning has been understood; simple songs. Particular care is given to children in whom the teacher has discovered some budding vice.

The staff of the infant class have the same titles, duties, rights, according as they are Stagiaire or Titulaire, as the teachers of the primary schools.

Elementary Primary School System.—During the last twenty years, primary education in France has undergone considerable development. This is explained by two causes.

(*a*) The Republican institutions have had, as a necessary consequence, a system of education conformable to their principles.

(*b*) The vast expansion in industry and commerce, the freedom of exchange, and the profound change introduced into the conditions of work by the progress of science, have demanded much more than formerly the preponderance of intellectual culture. Writers on education generally bear witness to this great fact, and they all feel that to instruct the people is to render them more moral, more enlightened in respect of their duties, as well as of their rights, that is to say, more worthy of liberty, and at the same time to make them more capable of developing by industry the productive resources of their native land. Consistent with this line of thought the report on Primary Education says: "That the two principles basic to all primary education are (*a*) *political*—the necessity to moralise the universal suffrage by which every Frenchman must exercise his sovereign power in such a way that the exercise of the civil rights may always tend to unite as much as possible private and public interests, and (*b*) *economic*—the necessity to prepare every Frenchman to defend our industrial, commercial, and agricultural inheritance against foreign competiton, and to strive with success in all the paths of national activity."

The French Government has never ceased to show its extreme solicitude towards the wants of the primary educational school, which is truly the school of the people. "It is this school," says the Report of 1900, "which trains and educates the children of the immense majority of French people, and its prosperity is intimately linked to the moral and material development of the country. To-day on the seats of the class-room, to-morrow they will be citizens, soldiers, heads of families, and workmen. It is imperatively

necessary

necessary that they should be prepared early and continuously for these so important functions. To work effectively by means of education for that union of minds and hearts which makes the native land powerful, is the greatest service that the school can render to a democracy for whom liberty and equality would be doubtful blessings without fraternity."

Primary education is compulsory, free, and secular. With regard to the secular character of the schools the Director states—"The teaching given in the public schools in the name of civil society draws its principal strength from its essentially secular spirit, opposed to all sectarianism, and profoundly respectful of the rights of conscience."

Primary Schools and their Organisation.—The primary school age is from 6 to 13. There are three classes of schools—mixed, boys', girls'. The system of records is very comprehensive.

The amount of clerical work in the schools is considerable, no less than six registers being kept, and with much more detail than is required in our own system. The admission register contains in reality a short history of each pupil. At the time of entry the pupil must produce his certificate of birth, and of vaccination, and also a properly attested statement that there is no contagious disease in his home. Complete entries must be made regarding these points, as well as all promotions, and the date of leaving recorded. The last column in the register provides for full remarks on the character, ability, and conduct of the pupil, of his intellectual and moral worth, and of the career he has chosen. All these matters are carefully weighed and the teacher's estimate of the pupil from all standpoints carefully recorded. Non-attendances are marked in the class roll, and all cases of absenteeism thoroughly investigated by the School Commission.

The system of marking only absentee children had come under previous notice in the primary schools of Vienna. The class roll of one of the public schools of that city was inspected; it contained but few marks for the whole quarter. Inquiry proved that only the absent were marked. The large majority of the pupils had been attending full time up to the day of the visit. Following up the inquiry the absentee register was examined, and in it were found the fullest particulars as to the causes of absence.

Stagiaire.—No one is allowed to teach in a school in France under the age of 18 years for males and 17 years for females. Every person appointed must possess the brevet élémentaire and serve for a period of two years on probation; during this period he is termed a Stagiaire.

Titulaire.—A Titulaire must hold the brevet élémentaire (a first certificate), must give proof that he has taught for at least two years in a public or private school, and must possess the certificate of aptitude. Each year the Departmental Council draws up a list setting forth the official position of the Titulaires within the Department. While seniority is not neglected in determining places on this list, merit counts for much.

Salaries.—Titulaires are divided into five classes and are paid according to the following scale:—

	Primary Schools.	
5th Class	Men, £40	Women, £40
4th Class	Men, £48	Women, £48
3rd Class	Men, £60	Women, £56
2nd Class	Men, £72	Women, £60
1st Class	Men, £80	Women, £64

In addition, the Commune pays the house rent of the teacher, and his salary is increased when his school has three or more classes.

Promotions.—Promotions are made on the recommendation of the Primary and Academy Inspectors. The former draw up the list of Titulaires according to their efficiency and length of service, and submit it to the Academy Inspector, who places it before the Departmental Council. The list is then forwarded to the Minister, who decides upon the number of promotions to be made in each Department according to the percentage fixed for each class, viz., Probationers 10%, Fifth Class 20%, Fourth Class 25%, Third Class 25%, Second Class 15%, First Class 5%. Promotion from one class to another can only take place when a vacancy occurs in the class above.

Programme—Elementary Primary School.—The programme specially applicable to the elementary primary schools comprises Moral and Civic Instruction, Reading, Writing, French, Reckoning, Metric System, History and Geography of France, Object Lessons and Elementary Scientific Ideas, Elements of Drawing, Singing, Manual Work with application to Agriculture, Needlework, Gymnastics and Military Exercises.

Division into Courses.—The primary school is divided into three courses—Elementary, Middle, Superior.

The Elementary Course corresponds to the ages between 6 and 9, the Middle Course to the ages between 9 and 11, the Superior Course to the ages between 11 and 13.

In the Elementary Course elementary methodical ideas of each order of studies are presented to the child in a chatty form, unconstrained as much as possible and with concrete examples. Special efforts are made to teach reading and writing—those two indispensable instruments.

The Middle Course has for its object the foundation of the child's fund of knowledge. It is this course which furnishes the child with that body of practical ideas without which a man remains outside the circle of humanity. Teaching in this class is more precise and thorough; while resting largely on the faculties of observation and sensible perception it makes larger appeals to the reasoning faculties.

The Superior Course.—The cultivation of the reasoning faculties preponderates in the Superior Course, in which, while completing the formal knowledge already acquired, the child is accustomed to exercise his judgment, "to descend logically from the principle to the fact, and from the rule to the application." Physical culture and moral education are concurrent throughout the course.

These programmes, however, designed for the children of the labouring class, would have been incomplete if they had not also performed their part in the preparation for professional life in the case of the boys, and for domestic life in the case of the girls. This practical side of education is represented by the teaching of drawing, manual work, ideas of agriculture and horticulture for boys' schools, and sewing and domestic economy for girls' schools.

General Time-Table.—In the French primary schools there are 30 hours of teaching in each week. The following is the apportionment of time to the various subjects :—

The French Language.—Daily, two hours.
Scientific Instruction.—One to one and a-half hours.
History and Geography, including Civic Instruction.—One hour (about).
Writing.—One hour ; less in upper classes.
Drawing.—Two to three lessons a week.
Singing.—One to two hours a week.
Gymnastics.—Every second day in the afternoon.
Manual Work.—Two or three hours a week.

TIME-TABLE, PRIMARY SCHOOL, IN FRANCE.

ELEMENTARY COURSE.

Morning.	*Afternoon.*
8·30 to 9.....Moral and Civic Instruction.	1 to 1·30.....History and Geography.
9 to 9·30.....Reading.	1·30 to 2.....Reading.
9·30 to 10 .....Arithmetic.	2 to 2·30..... Drawing, Manual Instruction, or Drill.
10 to 10·15.....Interval for recreation.	2·30 to 2·45 .....Interval for recreation.
10·15 to 11.....French.	2·45 to 3·15 .....Writing.
11 to 11·30.....Writing.	3·15 to 4..... .. Object Lessons and Singing.

MIDDLE AND SUPERIOR COURSES.

Morning.	*Afternoon.*
8·30 to 9.....Moral and Civic Instruction.	1 to 2..... .....History and Geography.
9 to 10..... Arithmetic and Geometry.	2 to 2·30.....Reading, Recitation.
10 to 10·15.....Interval for recreation.	2·30 to 2·45 .....Interval for recreation.
10·15 to 11.....French.	2·45 to 3·30 .....Drawing, Manual Training, Singing, or Composition.
11 to 11·30.....Writing, Middle Course ; Composition, Superior Course.	3·30 to 4..... ...Physical and Natural Sciences, Agriculture and Horticulture.

The employment of time and the division of subjects are set out in a circular by the Minister, and these must be adhered to by the teachers in their time-tables. Rational and hygienic succession of exercises is determined by the Minister, but the teacher is allowed latitude regarding the construction of his time-table and programmes so long as they are in conformity with the general Departmental plan.

Within these conditions there is plenty of scope for originality in French schools. It is the main work of the pedagogical conferences which are attended by primary school and other teachers to draw up for their respective districts, in collaboration with the Primary Inspectors, time-tables and programmes for future guidance. There is no document corresponding to the lesson register used in the public schools of New South Wales. Monthly programmes are compiled. The preparation of lessons is general, and is a point strongly emphasised by those at the head of public instruction in France. Insufficiency of preparation is regarded as a serious failure in professional duty.

French teachers keep the two great aims of all education continually in view, viz. :—

(*a*) To supply certain indispensable knowledge.
(*b*) To develop the faculties by rational, continuous, co-ordinated work.

They have a few mottoes which are worthy of mention :—

(*a*) Do not teach much, but teach well.
(*b*) Only demand of the memory the absolutely indispensable.
(*c*) Exercise the child's sense and judgment in the different subjects which must engage his attention.
(*d*) Treat the mind like the stomach, and choose such foods for it as may be assimilated.
(*e*) Let the pupil leave school, it may be, with a minimum of knowledge, but with undoubted tastes and capacity for learning, and a powerful will, and he will possess the sure instrument for his own improvement.

Methods of Instruction.—The collective method is generally adopted, though individual teaching is resorted to wherever practicable. With large classes numbering between 40 and 50 pupils the collective method is recognised as the natural form of instruction. "The lesson learnt by heart and without any explanation, and purely mnemonic exercises, have disappeared," says the Report, "and the spirit of the new methods has penetrated here as elsewhere." Intuitive, picturesque, anecdotal (when the anecdote serves to bring into relief a great figure) in the Elementary Course, the instruction assumes in the Middle Course more of the character of demonstration. In the Superior Course the facts are presented in regular order, and grouped round certain general ideas. By interrogation and periodical revisions the teacher cultivates the habit of seeing things in wholes. "One can say," quoting again the words of the Report, "that purely dogmatic instruction is banished from the primary school, that is, if the word dogmatic means or indicates the passive or rather slavish method which betrays ignorance of the true conditions of the intellectual and moral progress of the child."

Every effort is made to adapt the instruction to the psychological needs of the pupils whose whole individuality—thinking, observing, judging—is called into activity.

Physical Culture.—The triple faculties of the child—physical, intellectual, and moral—are cared for with the object of ensuring a simultaneous, concurrent cultivation.

The French authorities do not consider it wise that children between the ages of 6 and 13 should be exercised on the trapeze or with rings. At this period they recommend the excitement and exhilaration arising from outdoor games such as running and jumping, and the joy and spirit of emulation engendered by such games. They do not approve too strongly of the formal exercises generally connected with the apparatus of the gymnasium.

Evidences that the French pupils are fond of these outdoor sports came under notice during a visit in November last to a school situated near the Louvre in Paris. In a portion of the great courtyard, shut out from all traffic, scores of the boys, taking their mid-day recess, were thoroughly enjoying themselves in what Australian boys know as the game of "warmers." The masters on playground duty who, judging from their dress, were members of some religious order, took an active part in the game. In the more formal practice of physical training the authorities favour a school gymnastics founded on a series of voluntary movements varied and graduated in such a way as to enable a large number of pupils being exercised at the one time.

The

The daily work of the school is divided into two sessions of three hours each, and in the middle of each session a break of a quarter of an hour is allowed for recreation in the higher classes, but in the lower classes a break of five minutes is made at the end of every hour.

Singing.—In the Elementary Course the singing is taught by ear. Much emphasis is placed on the teaching as contributing largely to the moral education of the child. In the Middle and Superior Courses the tonic sol-fa—theory and practice—is studied, and singing in unison is cultivated. The teachers are instructed to make a careful collection of such songs as inspire a love of nature, family, native land, keen sympathy for social life, and a feeling of what is due to others. To attain this end they are expected to explain a piece of music with the same care as a passage in reading.

Observation.—The immense value of the use of the eye in the acquisition of knowledge is fully recognised by the French teacher. Objects are presented to the children and by frequent and numerous questions the teacher leads them to a recognition of the qualities and properties of the objects, and to discover the exact words for the expression of the ideas. It is in this way that elementary science commences. The child beginning in the field of the concrete is led insensibly to bring out the ideas in objects, in a word, to abstract. The education of the higher faculties of the mind—judgment, memory, imagination—is carried out concurrently in a satisfactory manner. Though emphasis is placed on the cultivation of judgment the memory is not forgotton. In former days over-emphasis was placed on the training of mechanical memory. This is not the case now, for nothing must be memorised in the French schools of to-day without being first understood.

Imagination.—Every effort is made to train the imagination on a concrete basis, and this is done by the presentation of beautiful pictures, relief maps, readings, learning appropriate passages from the best authors, who describe the beauties of nature, and extol the higher feelings of heroism and patriotism.

Part of the Commissioner's time in Paris was spent in inspecting school material in some of the leading educational houses, and inspection showed with what extraordinary activity the houses endeavour to supply the Departmental demands for splendid maps, diagrams, physiological, botanical, and other admirably executed charts. Their number and beauty were inexhaustible, and as aids to the above object of cultivating the imagination their importance cannot be exaggerated.

Morals.—With respect to moral education which binds together, raises and ennobles all the teaching, the work of the master is continuous, for it is "now a question of the cultivation of the conscience." The formation of pupils' societies for the purpose of economy and mutual help is increasing.

A feature of school work very similar to these juvenile societies came under observation in the American schools, where the excellent arrangement of separate class rooms gives pupils and teachers good opportunities for developing the idea. One class takes a special interest in collecting cablegrams treating of important foreign matters, a second collects biographies of the great American writers as their birthdays fall due, a third prepares a local weather chart. Everything prepared is placed in a conspicuous place in the class-room for the benefit of all the class pupils. The biographies are accompanied by nicely executed purchased portraits of the authors and some of their choicest writings. These societies for mutual help and instruction are not confined to France or America. They exist also in Australia, according to a school paper published in Sydney, in which the following passage occurs :—

"The members of 5 B class having recently formed a Progress Association, a meeting was held on 15th May, 1903, for the election of officers. The objects of this Association are :—

1. To promote a greater unity among the members of the class, for "union is strength."
2. To promote a greater sympathy between teachers and scholars.
3. To maintain the high moral tone in the school.
4. To further the well-being of the school generally, by fostering existing institutions, or by any other means that may be approved."

There can only be words of commendation for those who interest themselves in such valuable adjuncts to school work.

Discipline.—Corporal punishment is forbidden in French schools. No written punishments, known as "impositions" in this country, are permitted. General indefinite punishments are justly condemned. Teachers rule largely by affection and moral suasion. Austerity, imperiousness, fickleness in the teacher are deprecated.

Boys from 10 to 16 years of age were seen in their class-rooms, and the general impression of the school discipline was satisfactory. In the Elementary Schools the little fellows about 9 and 10 years of age were well dressed, intelligent and earnest. They welcomed the visitors by rising from their seats and giving the military salute. In the Primary School smart looking boys, 12 and 13 years of age, were observed at their work. In every department visited bright, happy, orderly pupils were seen.

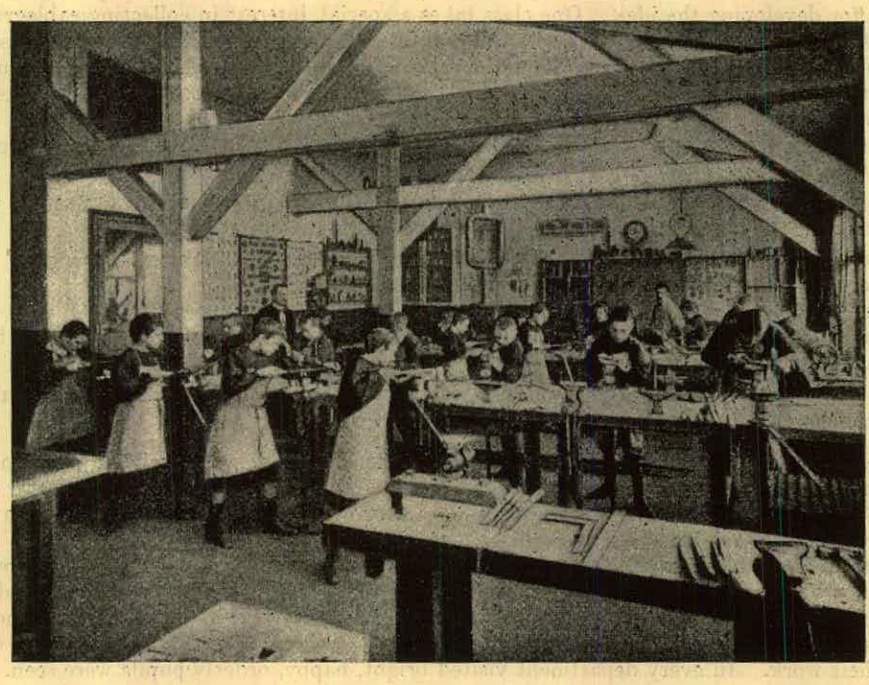
Aims of the Primary School Instruction.—"The principal aim of the French system of instruction is to form the man in the child, but it has also in view a preparation, as much as possible, for the practical life, for the social condition which awaits the child, and so, whilst maintaining its general character, it has appeared more and more necessary to give it a moderate direction towards the agricultural and other callings. This is why the technical side of the programme has been broadened, and the dogmatic instruction diminished. From the purely dogmatic lessons practical applications are continually drawn. Manual work and drawing in the primary schools aim at the same object. They contribute to develop the spirit of observation and to educate the eye and hand. These two branches of instruction, so precious in the practical work of the different callings, rest upon geometry, the essential notions of which are also taught. Drawing is taught from the moment the child enters the school."

In a primary school in the Rue de la Jussienne a class of senior girls, at the time of the Commissioners' visit, was engaged under a special teacher in a lesson on drawing. The room was properly fitted up with drawing frames and boards. The girls were engaged in freehand drawing from plaster casts, and their excellent work testified amply to the special care and attention devoted to this important branch of school work. This special emphasis on drawing as a primary school subject is general throughout France, as, indeed, it is in all the other countries visited. The prominence given to the subject was particularly noticeable

noticeable in the Board Schools of London, in the primary schools of France, in the primary schools of the United States, and in Toronto (Canada). Manual training work in iron and wood was noticed in the boys' department of the above school. The bench accommodation in woodwork provided for about 20 boys at a time, and there were sufficient anvils, vices and furnaces to keep 10 boys occupied with the iron work. The benches for woodwork are small, and are very similar to those in use in the English Board Schools. The teaching was not on Sloyd lines.

There is universal agreement at the present day as to the importance of drawing in education, not only from the utilitarian, but also from the educative point of view. It would appear that in the past France has given prominence in this subject to the utilitarian side, and thereby left herself open to the charge of having aimed at habitual mechanical but somewhat artificial perfection. This opinion was formed after an inspection of the drawings sent by French Schools to the School Exhibition held in London in June, 1902, under the auspices of the London School Board. The opinion was confirmed after a visit in November last to the Municipal Pedagogical Library in Paris. In this institution a section of the buildings is set apart for an exposition of the work done by the pupils attending the primary and upper primary schools. The written work on exhibition, from the lowest class to the highest, consisting of arithmetic, composition, mapping, and dictation, was thoroughly genuine. No attempt had been made by the teachers to "touch up" the exercises for show purposes. The work was exhibited with its imperfections, and on the whole it gave evidence of good primary school teaching. The books were lying on the tables just as they came from the schools where they had been used in 1899 and 1900. The drawings into which original design largely entered were particularly well represented. This originality of design was noticeable in the exercise books above referred to. Every child had something of the kind as a heading in his or her exercise book. From the prevalence of this feature in the drawing, and the character of some of the work one would conclude that much encouragement is given in this direction, and that a child's efforts though often extremely crude are not disparaged. Writing and drawing on paper are introduced into the elementary schools at a very early stage, and even the higher classes of infant schools are practised in the use of the pen and lead pencil. The artificiality of the drawing is not unknown to the School Authorities of France, and already they recognise the necessity for some alteration. The introduction of Nature drawing is now claiming their attention.

Manual Instruction.—Manual instruction has been a compulsory subject in the primary school programme of France since 1882, but has not yet given all the results expected. The initial expenditure in equipping workshops and the unpreparedness of those engaged in the teaching are the two chief causes which have militated against a full measure of success. In the simpler processes of manual instruction



L'ENSEIGNEMENT MANUEL A L'ÉCOLE PRIMAIRE.—UN ATELIER DU FER.

performed by the junior classes, such as folding, cutting, weaving, cardboard work, modelling, in which a comparatively slight outlay was necessary for purposes of equipment, good results have been achieved; but in the establishment of workshops for instruction in wood and iron, involving, as they naturally must, considerable expense in construction and equipment, the success of manual instruction is not yet fully achieved. Every boys' school in Paris is provided with a manual workshop, and in other cities they are becoming general. The State pays the salary of the instructor, and the Commune pays for the equipment. The parents pay nothing.

Under our own system the instructor in manual training is an officer immediately under the Technical College, not directly on the staff of the school where he is engaged. The expense of equipment is maintained by the Public Instruction Department; but the boys attending the classes, while receiving instruction free, have to purchase certain tools. The cost of the necessary tools is about £1, and the question arises, does not this expense prohibit many boys from receiving manual instruction? In England, France and America, not only is instruction free, but all tools required by the boys are provided free of cost. The

The difficulty experienced in France from not having teachers competent to undertake the training in the wood and iron workshops has been overcome by giving the necessary instruction to students while in the Normal Schools.

The French teacher readily recognises the double utility of manual training. While it provides for recreation of the mind, it at the same time makes instruction real by furnishing to the boy the concrete material. The same practical methods are employed in arithmetic and the physical sciences. In arithmetic, alongside of theoretical ideas, are placed exercises in mental arithmetic and problems related to the different occupations of ordinary life and to the various trades.

In the Pedagogical Museum already referred to there are special cabinets containing collections of work done in the primary schools. The best of those which came under notice are wood work, metal work, dressmaking, and drawing.

Practical Direction given to the Physical and Natural Sciences.

Temperance Teaching.—Special instructions have been issued to the teachers of France regarding the teaching of science. This step has been taken in view of the alarming increase in the consumption of alcohol. This question has given, and is still giving, much concern to French thinkers, and universal efforts are being made to deal with it; the school is expected to contribute its quota towards the movement. Teachers are instructed to place special emphasis upon this branch of instruction. The evils of intemperance are illustrated by means of set lessons, tables of statistics, wall charts, anti-alcoholic pictures, and the formation of school temperance societies to combat the evils is encouraged. Temperance ideas permeate the physiological and moral instruction.

Agriculture.—In emphasising the direction given to agricultural teaching, the central administration in France could not forget that the majority of children in elementary primary schools would eventuall become farmers. They aim therefore to give the instruction a distinct agricultural bias, but not to put the children through an apprenticeship as farmers. They aim at making intelligent farmers, opposed to routine work, and capable of understanding the scientific points of their calling. One of the motives in stimulating the efforts of the teachers in the direction of agriculture is the desire to retain the people on the land. "This direction towards agricultural teaching in our rural schools is," the Report states, "to-day rendered all the more necessary in view of the ever increasing migration of rural population to cities." Writers on the subject say that the teaching of agricultural ideas in country schools has not prevented people from migrating to the cities, and the statement has been made that pupils of urban schools appreciate lessons in Nature study more keenly than those of rural schools. Whatever may be the cause of the migration to populous centres, the inclusion of the elementary ideas of agriculture connected with Nature study in primary schools cannot be otherwise than beneficial.

Great attention is paid to practical, experimental work in the schools, such as growing plants in pots, school gardens, special visits to parks afford. On all occasions effort is made to explain appropriate theoretical principles by practical demonstrations.

It may be said of the French people that they endeavour to adapt their teaching to the particular needs of the community. Nature study with them follows the natural surroundings and natural phenomena. Lessons on the life of a sailor and a fisherman must be given in all the elementary primary schools on the coast. Agriculture there, while not entirely abandoned, makes way for ideas regarding sea occupations. Although teachers of schools in the maritime districts have not had sufficient time to make more than a superficial study of the new requirements, the Inspectors state that the results, on the whole, are not the less satisfactory. Teachers have taken the work up with great enthusiasm. In 21 of the Maritime Departments in which elementary nautical teaching is given, the instruction seems to have already borne fruit.

The courses of instruction in the schools in maritime districts are as follow :—

MIDDLE COURSE.

1. The vocation—words and things. Advantages of the fishermen's vocation. Personal and national interests. Appropriate hygienic ideas—food, clothing, &c., Swimming a necessity. Deep sea fishing, coast fishing. Sailing, coasting, &c. Description of a local fishing vessel—visit to a vessel and a life boat; different parts of the vessel; kinds of vessels. A harbour—marine terms; common English marine terms; foreign flags.
2. Practical Astronomy—constellations: Polar Star: apparent movement of the sun, equinoxes, &c. Moon and its phases. The sea, tides, &c. Equinoctial tides. Marine maps. Depths. Soundings. Signalling stations. Buoys, beacons, lighthouses. Magnets and their properties; Compass; declination; variation. Logs.
3. Geography of the neighbouring shores (in the English Channel, for example, the French and English coasts visited by fishing boats.) Fishing grounds—Tours on the shore. Animals and plants.

Practical Work.

4. Sailor's knot; anchoring; splice; pulleys; tackle; fixing and unfixing of tackle. Nets: making and repairing (visits to sail-lofts, smithies, &c.) Demonstration of running—rigging—swimming.

SUPERIOR COURSE.

1. Navigation. Movement of the stars, equator, meridians, parallels, position of a star. Ecliptic: Sun's position, Marine maps. Compass, route according to the compass. Magnetic route, true route. Ship headlands. Drift. Sextant, barometer. Cyclones. International code of signals.
2. Elementary ideas of maritime legislation. Legal position of sailors. Police of the coast, &c.
3. Hygiene. First assistant to the wounded and sick. Use of the chief medicines to be carried on board, &c.

Practical Direction in Girls' Schools.—This particular practical direction is likewise given in the girls' schools. At first there is a special programme of drawing in harmony with their different needs. Afterwards, alongside work in drawing, ideas of domestic economy are introduced. The teaching includes all the necessary repairs connected with the household linen and clothing, household accounts and domestic hygiene. The general education of the girl is given a distinct bias in this direction.

School Attendance.—If a child should absent himself from school for four half-days in a month without justification accepted by the School Commission, the father or the guardian is summoned to appear in the Mayor's room before the Commission. The Commission reminds him of the law dealing with compulsory attendance, explains to him his duty, and warns him of the consequences. If he fails to take the warning the matter goes before the police court. Children

Children educated in the home have each year, from the age of eight, to submit to an examination equal to the standards of public schools for the same year. If the examination is unsatisfactory and insufficient explanation is forthcoming, the parents are ordered to send their children to a public or a private school. Some dissatisfaction has been expressed with the operation of the compulsory clauses in the case of children taught in the family, and the necessity for greater strictness by the authorities has been pointed out.

Teachers do much, as Academy Inspectors attest, to get satisfactory attendances by popularising their schools. School restaurants for poor little children are supported by private funds or the School Fund. The little ones remain in the school or on the premises all the day, and thus escape the influence of the street and the severities of the weather. The parents are not pauperised, for the Authorities endeavour to keep alive the sense of responsibility and duty regarding their own by allowing them to contribute a little towards the happiness and comfort of their children.

Leaving Certificate.—Examinations are held at the end of the year, and candidates are not admitted until they have completed their eleventh year. The disposition on the part of the School Authorities is to retain the child at school later than the age of 11. The Rector nominates the Board of Examiners. The examination consist of two parts, written and oral :—

Written Test.—

Dictation.—A passage of 15 lines at most. The passage is read slowly first, re-read to allow of corrections, and five minutes granted to the examinee to revise.

Writing.—The writing in the dictation exercise is accepted.

Arithmetic.—Two questions in problems—Metric System.

Composition.—Simple in character, subject chosen from moral or civic instruction, history and geography, elementary science, given in usual school lessons. The Academy Inspector chooses the subjects.

Sewing (for girls).—

These are the compulsory subjects in the written test, each of which is worth 10 marks. Those successful in securing 50 per cent. of marks in the written part are allowed to take the oral test.

Oral Test.—

Reading and Recitation—10 marks.

History and Geography—10 marks.

50 per cent. of marks at least constitutes a full pass.

Both tests must be passed before the certificate is issued.

Agriculture for boys in the country and drawing for boys in the city may be offered. These subjects are not compulsory, but the successful candidates receive credit for them in the certificate.

Conclusions of the Primary School System.—The instruction, while preserving its general character in certain subjects, aims at practical applications adapted to prepare children for different callings, but it is a direction rather than a preparation.

CHAPTER IX.

Upper Primary Schools of France.

[J. W. TURNER.]

Introduction.—A distinction must be drawn at the outset between the "cours complémentaires" of the primary school and the upper primary school proper. The following table indicates clearly this distinction :—

Upper Primary School.	Cours Complémentaires.
Separate building.	Annex of a primary elementary school.
Separate Staff.	Under same control as the elementary school.
Ordinary Course, two years.	One year.
Full Course, three years.	Distinct classroom, with workshop attached.
Three Rooms—	Staff qualify with the brevet supérieur and the certificate of aptitude for primary school.
One drawing-room.	
One gymnasium.	
One workshop.	
Staff qualify with the certificate of aptitude for the mastership of the upper primary school.	

The schools are on two distinct platforms, with two distinct staffs. There is no general programme for the "cours complémentaires," but the Director or Head-master, acting with the teacher of the Superior Course of the elementary school, draws up a programme of work based upon the level of the pupils' knowledge and the needs of the district. Pupils are not admitted unless they can produce the leaving certificate of the primary school, and prove that they have had one year's attendance in the Superior School course.

Our own system of establishing a Superior School, when there are twenty pupils capable of doing fifth class work, bears a close resemblance to the "cours complémentaires" of France. These schools may be described as the topmost rung of the elementary primary school ladder. *The*

The Upper Primary Schools.—The upper primary school, being the continuation of the primary school, preserves its practical character, spirit and methods. It is only distinguished from it in that it assures to its pupils a more definite and a more complete preparation for their future profession, a higher intellectual training, and a wider fund of knowledge. According to a Minister of Public Instruction this teaching "must be quite a different thing from a poor imitation of secondary education; the upper primary school is not the college degenerated, it is the primary school perfected." A Ministerial circular on the subject of these schools says "the upper primary school is recognised at first sight by its openly practical and utilitarian character. In this general sense it is professional." But the circular is careful to point out "that the education is a real education, and is not to be confounded with an apprenticeship. It is a school and not a workshop—pupils are found in it, not apprentices." And in the summing-up of the Report the following statement is made:—"Complement of general instruction, commencement of professional instruction—such is the character of the upper primary education."

The schools designed to carry on and complete the elementary primary instruction are divided to-day into two types of establishments—the upper primary schools of public instruction and the practical schools of commerce and industry. The essential difference between them is that in the latter schools the professional or practical element is emphasised, while in the former schools the general element predominates. The professional schools, which number thirty-three, are under the Minister for Commerce and Industry.

The Upper Primary Schools proper.—The pupils for whom these schools are intended are children of the labouring classes, who have to quit school early and earn their own living chiefly by manual work. Though the education is of a practical character, it yet remains a true education, and is not to be confounded with apprenticeship. It directs all its efforts to a continuance of the work of the primary schools, and to carrying on that "cultivation of the mind which forms the judgment, the heart, the will, and the character." It is in this respect that it is distinguished from the purely professional education.

General Organisation.—The ordinary course is one of two years, the full course is three years or more. The first year of the course is the same for all pupils. The design is to strengthen the primary instruction received, and to afford opportunities for noting the particular bent of each pupil. From the second year in the schools with a full course, the courses of instruction are differentiated according as the particular professional bent declares itself in the pupils and commences to distinguish them from one another. Alongside the section of general education, which is composed of pupils whose career is not yet determined, and who only come to the upper primary school for a complement of general instruction, there may now be created one or several special sections—agricultural, industrial, or commercial—in which the subjects of general instruction are not abandoned, but simply reduced so as to enable greater attention to be given to the professional education.

Head-master's Duties.—The head-master must give at least from ten to fifteen hours' instruction every week according to the number of years in the school course. In schools with 150 pupils and upwards, or in schools which are placed under the same control as an elementary primary school with more than three classes, the head-master may be relieved from all the other subjects except the moral and civic instruction. The other teachers give twenty hours to teaching and five hours to supervision each week. The head-masters' responsibilities are great. He must forward monthly to the Academy Inspector a full report on the life of the school. The masters and assistants are given every opportunity by way of internal supervision, excursions and games, to co-operate with the head-master in the moral training of the pupils. The members of the staff are appointed by the Minister of Public Instruction. The standard of the certificate of upper primary school teachers is equal to that required for teachers in the Normal Schools. Teachers of special subjects are employed. Education is free. The leaving certificate of the primary school and an attendance of one year of the superior course are necessary for admission. In some Departments, owing to the number of applicants being in excess of the seating accommodation, competitive examinations are held to determine who shall be admitted.

Salaries.—There are 297 upper primary schools in France, attended by 31,000 pupils, and the amount voted annually for their maintenance is 3,000,000 francs.

The salaries paid in Upper Primary Schools are as follow:—

5th Class	£72	per annum.
4th Class	80	„
3rd Class	90	„
2nd Class	100	„
1st Class	112	„

Scholarships.—The following classes of scholarships or bursaries are awarded by competition (Age limit 12 to 15):—

(a) Boarding Bursaries—to pupils who live in a boarding-house attached to the school.
(b) Maintenance Bursaries—to pupils who live at home and attend the upper primary school or the "cours complémentaires."
(c) Family Bursaries—to pupils whose parents do not live in the locality; these are placed with families selected by the masters and mistresses.

The Value of the Scholarships.—

(a) The usual boarding rate charged for children is paid in part or whole. The amount does not exceed 500 francs (£20).
(b) The maintenance bursaries vary from 100 to 400 francs (£4 to £16).
(c) The family bursaries paid in part or whole do not exceed 500 francs (£20).

In awarding a bursary, the character of the child and his examination, the financial condition of the parents, and their services to the State as citizens, are all matters for consideration.

The

The bursars of the upper primary schools may be transferred to the secondary schools with the continued enjoyment of bursars' privileges, if they are less than 16 years of age. The secondary school bursary is only granted on the recommendation of the Academy Inspector, and to pupils who have specially distinguished themselves by their conduct and work.

This is a fitting place to remark on the splendid grading of the French system of instruction, on the constant vigilance exercised by the Academy Inspector and his staff over their teachers and schools, and on the opportunity afforded to the poorest boy to acquire the very best education in the land. The system is so searching and universal in its application that the poorest children, even in the remotest districts, have every facility and opportunity for educational advancement.

Committee of Patronage.—Connected with each upper primary school is a Committee of Patronage, whose duty it is to look after the material condition of the school, to exercise a tender guardianship over the institution, to consult with the teachers as to the best measures for bringing instruction into harmony with local industries, and to evince a paternal regard for the pupil's welfare when he starts his career in life. The Committee of Patronage is appointed by the Minister of Public Instruction on the recommendation of the Rector.

The Committee regards with special care the pupils of the upper primary schools, particularly the bursars, and concerns itself with finding situations for the most meritorious at the end of their school course.

Character of the Instruction.—In re-organising upper primary education M. Jules Ferry defined it thus:—"On the one hand we wish it to remain primary, and on the other we wish it to be professional." M. Combes insisted on the latter characteristic, saying "that the upper primary education has only subsisted up to the present day because of pupils whom agriculture, commerce, and industry have sent to it. It will only flourish in the future to the extent to which it is professional." Statistics show at the present time that two-thirds of the pupils enrolled follow up the agricultural, commercial, and industrial professions.

In 1893 the upper primary schools of Industry and Commerce were transferred to the Minister of Industry and Commerce, and there then remained the necessity to define the character of the upper school proper. This definition by those authorised to draw it up is as follows:—"The pupils are not children intended for the liberal professions who have an unlimited time at their disposal, and who seek a higher intellectual culture. They are the children of the working classes, who will soon be compelled to leave school to earn their living. They do not aspire to the pursuit of classical studies. Their ambition, their probable destiny, is to fulfil one of those numerous employments of the middle classes which agriculture, commerce, and industry offer to the workman. If this is so the upper primary school can only give the pupils a bias towards the necessities of the practical life which awaits them. It will not turn aside for a moment their mind from the pursuit of a profession. It will take care not to give them tastes, habits, or ideas which will remove them from the kind of life and the kind of work to which they are almost all destined. And whilst reminding them that democracy has removed the barriers which formerly narrowly imprisoned the individual, it will rather aim to make them love and honour their career than to seek the means of getting out of it."

Professional Upper Primary Schools.—Professional schools differ essentially from the upper primary schools. They are designed to produce commercial employees and workmen, whose services may be immediately utilised at the counter and in the workshop. The Minister of Industry and Commerce, speaking of these schools, says "that he cannot certainly deny the benefits of general instruction. It is a solid basis which increases the worth of the man, and renders more profitable the professional knowledge he has acquired. It is not a question of proscribing it. The pupils will necessarily receive a complement of upper primary education. The admission of pupils cannot take place unless they have fulfilled the school obligations. It has become indispensable to place at the service of our merchants well prepared assistants, and to furnish our manufacturers with select workmen, and this is the work of the practical professional school." An agricultural section is organised in all upper primary schools where a sufficiently large number of rural pupils can be obtained.

The following table setting forth the time devoted to theoretical and practical instruction will show at a glance the essential distinction between the Upper Primary School proper and the Professional School:—

TIME TABLE.

Hours for each Week.	Upper Primary School. 2nd and 3rd Years.		Practical Professional School.	
	General Section.	Industrial Section.	2nd Year.	3rd Year.
(*a*) Theoretical Instruction	20	14	12	7½
(*b*) Practical do	10	14	36	39
Ratios	2:1	1:1	1:3	1:5

Subjects and Methods of Instruction in Upper Primary Schools.—The leaving certificate and one year of the Superior Course are necessary for admission into the upper primary schools. In the grading, the upper primary school follows the Superior Course of the primary school, and the pupil enters about the age of 12. Specialisation in the direction of agriculture, commerce, and industry begins from the second year, about the age of 14.

Moral Instruction is given in common and the subject permeates the whole of the teaching.

Civic Instruction.—The pupil studies constitutional law and the political and administrative organisation of France.

Literary

Literary Instruction.—Largely practical—the teaching of French language and literature occupies the most important place in the general section. Themes for composition deal with practical every-day life. Much time is given to reading and recitation. Formal lessons on grammar are subordinated and composition emphasised.

History.—1st year—History of France to 1789. 2nd year—To present day. 3rd year—General. Ancient History is omitted through insufficient time. The teaching is mostly oral. The teachers prepare a précis of the lesson which the pupil reads in conjunction with his text-book. Then he is questioned on the lesson which he has studied. The teacher next dwells on the important points of the lesson. The boys follow with oral accounts, which they have prepared outside the school work. At the conclusion of the lesson the teacher's blackboard and other notes are transcribed.

Geography.—Maps are drawn on the blackboard and on paper—various chalk colours employed. Maps, charts, reviews, newspapers, statistics are used as sources of information. The curriculum embraces—

1st year.—Principal countries of the world, except Asia and Europe.
2nd year.—Asia and Europe.
3rd year.—France and her Colonies.

Common Law and Political Economy.—Notions of Common Law and Political Economy are introduced in the third year of the course, the boy being about 16 or 17 years of age. The instruction is made practical, and has a bearing on his future calling.

Foreign Languages.—In the commercial section four hours a week are devoted to foreign languages, in the general section three hours a week. The choice is made from English, German, Spanish, and Italian.

Mathematics.—The Report of 1900 is very clear on what is required from upper primary school teachers in this branch of instruction. It says "some teachers do not understand the significance of the word practical, which simply means applicable to the ordinary operations of daily life by processes that are rapid and expeditious, but always exact, and in which mental work plays a big part." Such questions as are known to teachers as problems in "taps," "hands of a clock," "leaps of a hare," "mixtures," are ridiculed. These the Report states are not practical exercises. When certain teachers defend the practice of giving such problems by reason of their theoretical value, and because they are necessary for examination purposes, the reply is "that reality may easily displace fancy to the greater profit of both theory and practice," and with regard to examinations, problems of the character described, the Report says, must be eliminated from the papers set. Similarly geometry must have a practical application by way of surveying, drawing, and manual work. Euclidean geometry is unheard-of in connection with these schools.

Book-keeping.—On the commercial side this subject has a distinct value, and is taught by a special teacher. On the general side it is included in the mathematical teacher's duties. The teaching here also is concrete and practical. Hand-writing, making figures, reckoning quickly and correctly, mental and written work, receive special attention. Merchants prefer boys with this training, and pay them better salaries.

Physics and Chemistry.—In the well furnished schools suitable laboratories exist, and the teaching is largely conducted by experiments. Teachers are particularly requested to co-ordinate different branches of scientific instruction in such a way (*a*) that they may complete and help one another, and converge in application to hygiene, and agricultural and local industries, and (*b*) to limit the theoretical part to ideas that are indispensable to the understanding of practical and common subjects. In the professional upper primary schools the pupils get practical chemical work in the examination of manures, soils, grains, milk, &c., and a special course of technology is provided for in the commercial and industrial schools. This course is ordinarily completed by visits to the factories in the neighbourhood.

Natural Science and Hygiene.—The teachers establish museums in their schools and maintain little gardens for the teaching of botany. Here they grow plants that are typical of botanical families, for the purpose of specimen distribution in classes during the lessons on botany. The General Inspector proposes to place on a conspicuous wall in every upper primary school a representation, on a reduced scale, of the local geological strata with the characteristic fossils.

Twelve special lessons on hygiene are given in the third year of the course. The subject of anti-alcoholism receives special attention here too. The hygiene of domestic animals, particularly cattle, is restricted to the programme of the agricultural section. Throughout the whole general section of the three years' course there is a close co-ordination of science and agriculture.

Manual Instruction.—Included in this branch are the subjects of geometrical and model drawing, free hand, and modelling. The instruction is emphasised in the industrial section. The teacher never fails to recall to the pupils' minds geometrical principles which may be applied. Much stress is placed on the model drawing, which is regarded as furnishing in the hands of a capable teacher the best training for hand and eye.

Workshops.—In the worshop the training is educative; it is only preparatory to apprenticeship in the industrial section. The pupils work from a drawing based upon their knowledge of applied geometry. Instruction is given in the use and proper care of the working tools. Formerly a master workman was placed in charge of the workshops, but the French authorities adhering to their characteristic thoroughness and effectiveness of system, now require a *trained* teacher with a special certificate for the position. The master workman assists in such duties as the preparing of materials, &c., but the actual *teaching* is done by the trained man. Specialisation in wood and iron does not take place earlier than the third quarter of the first year, and sometimes as late as the second year.

Practical Agriculture.—There are two kinds of exercises—(*a*) outdoor, (*b*) indoor. The outdoor exercises consist of operations in the garden and field, chiefly experiments and demonstrations—ploughing, scarifying, vineyard work—gardening, vegetable and arboriculture, fruit-trees, poultry and bee farming, excursions to markets and fairs, farm accounts. All operations are followed by written reports which are carefully corrected by the head-master. The indoor exercises of the pupils are carried out in connection with manual work, and attention is given to the construction of useful farming articles. As an indispensable complement to their theoretical teaching in the subject, the pupils are instructed practically in a knowledge of the various field manures, in the mounting and dismounting of agricultural machines, and in the treatment of cattle.

Physical Training.—Combined movements and games, which bring all muscles into use, and enable a large number of pupils to be exercised simultaneously, are favoured and preferred to the usual gymnastic exercises which are taken by the individual while all the rest of the class stand by awaiting their turn.

In some of the schools of Germany, too, it was noticed that much attention was given to simultaneous drill, even though there was a well-equipped gymnasium.

Singing.—The ordinary notation and the figure method are taken for theory. A taste for good music is inculcated, and a disgust for low songs created.

Instruction of Females in Upper Primary Schools.—Co-education does not exist in the upper primary schools. Except in mathematics and agriculture the courses are practically the same. In geometry there is a modified course which is essentially practical, and which is adapted to female work and female industry. The drawing too has a practical tendency. The making of clothes and small articles of furniture, house designs in connection with tapestry, picture panels, embroidery used in ornamenting the rooms, are all based on the drawing instruction. The schools specialise in the subject according to local exigencies. The manual work is educative. It aims to cultivate the taste by judicious application of drawing to needlework, by a brief consideration given to questions of clothing and to works of art, such as room decorations, and to the principles which regulate the combination of forms, colours, and materials connected with inventive designs. It seeks to develop finally the creative spirit and render the work more agreeable and remunerative.

House-keeping instruction is represented by a theoretical course of Domestic Economy. In some schools it includes practical application of this theoretical course to the commonest operations of the household life—keeping and cleaning of linen, duties of the kitchen—particularly as to the choice, preparation, and cooking of foods. The elements necessary for a good meal, and for the foods required in building up the body, are fully described, and the prices of different meals studied. The whole object is to make the work of the kitchen more interesting and more intelligent. Horticulture, theoretical and practical, is also included in the curriculum. These subjects are taught by female members of the ordinary staff, who have been instructed in the Normal Schools in house-keeping and practical gardening.

Summary from French Standpoint.—In the invaluable Report on Primary Education for 1900 the general aim and work of these upper primary schools were thus characterised:—"This education endeavours to prepare competent staffs for industry and commerce, and it already furnishes intelligent assistants with active, alert minds. It has become professional while remaining general. The two educations are necessary, and cannot be separated. The children of the masses must think early of the obligations of life, but such consideration must not turn them aside from that general culture which is the indispensable condition of the development of the intelligence. The upper primary school instruction has a character which is essentially educative but frankly professional. It is theoretical and practical without exaggeration; it does not give an apprenticeship, but prepares largely for it. The teachers who are entrusted with it have for their principal care to prepare in every pupil the intelligent workman and the honourable man who will also be a worthy citizen."

At the conclusion of the course an appropriate certificate, entitled "The Certificate of Upper Primary School Work," is issued. Its high value is recognised by business men,

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CHAPTER X.

CHAPTER X.

The Public Schools of Paris.

[J. W. TURNER.]

Introduction.—The organisation of education in the capital, Paris, deserves special consideration. It has been seen that in all other parts of France the Municipal Authorities exercise a direct but restricted jurisdiction over the schools of their locality. In Paris the restriction is almost absolutely removed, and the whole question of Primary Education practically handed over to the Municipality (*Hôtel de Ville*). The State maintains its exclusive right to control Primary Education by its appointment of the leading officers, by its conduct of the inspection, and by its approval of the programmes of work. It has delegated all other essential powers to the Municipality, and places no restriction upon its free initiative and activity. The event has justified the confidence reposed in the city. Nowhere in the world have the needs of education received ampler and more sympathetic consideration; nowhere have public-spiritedness and patriotism endeavoured more enthusiastically to advance the well-being of a great work. Not only has the city fulfilled all the statutory demands relative to Primary Education, but has given, in addition, an exhibition of generosity, alertness, and progressiveness that must command the highest admiration. It has already established, and is still establishing, endurable monuments of its high sense of the responsible trust placed in it.

Enrolment.—In 1896 the number of children for whom educational provision had to be made was 157,205 under the age of 6, and 225,880 between 6 and 13, a total of nearly 400,000.

Organisation.—To secure for these children, by a sufficiency of schools and teachers, the minimum of instruction demanded by the law was in itself a heavy enough burden, particularly when the authorities, animated by that jealousy for the reputation of their city which is so characteristic of all Parisian municipal activity, were desirous that their schools should be up-to-date institutions, carried on in bright and healthy buildings, with classes having each a limited number of pupils, with teachers thoroughly well fitted for their difficult work and in receipt of adequate remuneration, and when, for the due fulfilment of this work, large areas of land had to be purchased in the most valuable parts of the city. But, as a matter of fact, this was but an insignificant part of the work undertaken by the Municipality. In addition to maintaining a sufficiency of teachers for the general and moral education, a considerable number of special teachers were appointed to ensure the effectiveness of the instruction in subjects for which the former were not suitably equipped and trained. Thus special teachers were appointed and a special inspection instituted for Drawing, Singing, Gymnastics, and Manual Work.

Benevolent Activities.—The schools, too, were unstintingly supplied with all material accessories essential for effective instruction, while the necessary school books, &c., were gratuitously furnished to the pupils. The School Fund (referred to in a previous chapter) was the special object of its lavishness. Nothing, indeed, was left undone which could in any degree lessen the obstacles to regular attendance of the children at school. The disabilities of poverty were counteracted as much as possible. Clothes were freely distributed to those in need of them; dining-rooms (cantines) were instituted, and meals given free of cost. This sympathetic and paternal regard of the authorities to the needs of the poor was particularly evidenced by their establishment of dispensaries, at which the children receive medicine and medical attention free of cost. Some of these institutions are magnificently equipped, and discharge a wide range of services. For example, in the XII Arrondissement, in addition to free consultations, medicines, and medicinal baths, a bath is given to the children of the schools every day after school, a hairdresser maintained to attend to the cutting and cleansing of the hair, a dental surgeon to see to the mouth and the teeth, and in winter cod-liver oil distributed to the schools far away from the dispensary.

Medicine chests, ready for all emergencies, are also placed in one of two or three neighbouring schools. The schools are regularly visited by medical inspectors, the children themselves being subjected to examination. In like charitable regard for the poor have been established what are termed "School Colonies" (truly a noble work), whereby children are removed from the morally and physically debasing influences of their home environments and allowed, for a period of three weeks, to breathe the pure air and feast upon the fresh sights of some charming country or seaside locality. As many as 5,000 children from the worst slums of Paris were one year enabled to enjoy this priceless boon. Careful medical examination of the children is made prior and subsequent to the trips, and the results have been considered as eminently satisfactory.

But this does not exhaust the benevolent activities of the authorities. "Classes de Gardes" have been established; in these are kept, before and after school hours, those children whose parents are, through necessitous circumstances, both compelled to leave the home to earn a livelihood. The object of the institution is to save the children from the physical and moral dangers of the streets. In 1900 there were 84 "Classes de Gardes" receiving members between 7 and 8 in the morning, and over 300 detaining their members between 4 and 6·45 in the evening. The children's time is spent in both study and games.

Provision is finally made for the children of a widow or widower left with a large family. Special bursaries have been created. These entitle the holder to maintenance in one of the numerous boarding schools of the city. To guard the parent of such a bursar from the charge of pauperisation, permission is given to make a greater or less contribution towards the child's maintenance.

In thus charitably co-operating with and assisting the parents, the Authorities claim to have removed all obstacles to a full observance of the Compulsory Laws regarding Primary Education; no child should lack the minimum of education because of the poverty of his parents.

Nothing need be added here to what has already been said concerning the material and pedagogical organisation of the Maternal and Primary Schools; there is no essential difference between the schools of Paris and those of the rest of France.

Vacation Schools.—There is, however, one feature of latter day development which deserves some attention; this is the creation of the Vacation School—an institution which has also secured a firm footing in some of the large cities of America. In Paris the vacation is a very long one lasting for a period of eight weeks. The Vacation School is carried on from the beginning of the third week to the end of the 6th., or over half the vacation. Children attending these schools have thus a fortnight's rest at the beginning, and another fortnight at the end of the long vacation. Teachers receive special remuneration for their services, and the work is assured by the appointment of a large number of stagiaires. In 1899 the number of Vacation Classes was for boys 456, for girls 295, the enrolment being 23,932 for the former and 15,711 for the latter.

Ex-Pupils' Associations.—There are certain auxiliaries to the work of the Primary School to which a short reference might be made. The great mass of the pupils in all countries leave the school as speedily as the law permits, generally between the ages of 11 and 14. Whatever beneficial influence the school has hitherto exercised upon the lives of its pupils is now abruptly removed, and for the most part little organised effort is made to continue the work of moral and intellectual education already accomplished. The consequence is the utter abandonment of the children to their own devices at what is probably the most critical period of their lives; the results are too often disastrous. In Paris there is a wide and keen recognition of the need for institutions which will keep their hold on the children, and enable them to weather this period safely, and with additions of moral and intellectual habits. Associations of similar character to our own "Old Boys' Associations" exist in connection with nearly every school in Paris; their attachment to their old school and their general activity are, however, of a more real and influential character. The Municipal Authorities allow the free use of rooms for their reunions, and entertainments of all kinds are being continually held. Classes for general, commercial, and professional instruction are carried on; gymnastic apparatus is supplied by the Municipality which further subsidises many of the Associations. The teachers themselves take an active interest in the work, and endeavour to give a moral direction to the various occupations and pastimes. Other Associations termed "Patronages," consisting of adults of the community, supplement materially the work of these Ex-pupil Associations. Various sport meetings, tours, entertainments, lectures, &c., are organised by them, and efforts made to secure for the ex-pupils satisfactory situations in their different trades and business.

In the VII Arrondissement so numerous and active are the various Associations that a Central Body has been created for the purpose of establishing closer union among the individual parts by conferences, fêtes, and reunions in the Municipal Rooms. The Municipal Authorities assist in every possible way this auxiliary work.

Mutual Benefit Associations.—The effort to cultivate permanent moral habits in the school children is manifested by the existence of Savings Banks and Mutual Benefit Associations in connection with most of the Primary Schools. The former we, in New South Wales, are familiar with; the latter are a new and interesting development. Each member deposits with the Director or Directress every week 10 centimes (about 1 penny); of these, 5 are placed to his credit in the National Pension Fund, the remaining 5 belong to the Society, and form a fund which furnishes to every sick child 50 centimes (5d.) a day. In addition, the child deposits 25 centimes (2½d.) a year as a contribution towards the burial expenses of any of the members. In these ways, the school introduces the child at an early age to the advantages of Mutual Benefit Societies. In 1899, 24,247 children were members of these Societies.

Thus far the Lower Primary Schools have been dealt with. It has been seen with what magnificence and vigilance the Authorities provide for the Primary Education of the people. Turning now to a consideration of the various schools and classes designed to continue this work, it will be found that similar ample and liberal provision is made.

Complementary Courses.—Cours Complémentaires are to be found in 17 Boys' Schools and 28 Girls' Schools. In addition to these there are 12 Professional "Cours Complémentaires,"—six for boys and six for girls. The technical training embraces manual work (iron and wood, needle and housework), drawing, and technology; there is also a scheme of general instruction including morals, history, geography, &c.

When boys have definitely determined upon pursuing a trade, they find seven professional schools awaiting them; there are also six for girls. These schools are liberally furnished with all the materials and workshops necessary for success, while the teachers are men and women specially trained for the work. The children are admitted to these schools at an age varying from 13 to 16, and undergo a thorough apprenticeship of three or four years in their chosen calling. The Authorities seem to be much satisfied with the work of these schools; statistics are furnished by them showing that the pupils command a fair rate of wages as soon as they leave the school workshops. Thus in 1899, 78 of the pupils completed their course in one of the schools devoted to ironwork, &c., and received on the average 3 francs 82 centimes a day. These ex-pupils are thus almost fully-fledged workmen, whose services, according to the Authorities, are much appreciated. Each school is devoted to a special class of work. There is a Boys' School for all classes of ironwork and carpentry, which turns out smiths, forgers, carpenters, locksmiths, boilermakers, &c.; a second is devoted to furniture and artistic metal work; a third deals with ebony work, sculpture,

carpentry,

carpentry, tapestry work, engraving, carving, &c. ; a fourth school is devoted to the training of chemists and physicists. Two others have to do with art work—drawing, sculpture, decorative painting, &c., of service in manufactures, while the seventh Boys' School deals with every class of work connected with the manufacture of books, bookbinding, lithographical, typographical work, &c.

The Girls' Schools give an apprenticeship in all the trades peculiar to females, as dressmaking, cutting, embroidery, flower-work, painting and drawing (in their industrial application), cooking, pressing, &c.

The curriculum of all these schools embraces a complement of general instruction resembling that of the Professional "Cours Complémentaires," though it is considerably less in quantity. In addition to the practical work of their trade, the pupils are compelled to study the theoretical or historical side. Some of these professional schools have Evening Classes.

Evening Classes.—The great majority who leave the school at an early age are not forgotten. All sorts of Evening Classes have been created throughout the city to furnish these with the means of continuing their general and professional education—"Adult Classes of the Elementary Degree," "Adult Classes of the Secondary Degree," Commercial Classes, Technical Classes, Drawing Classes, Singing Classes.

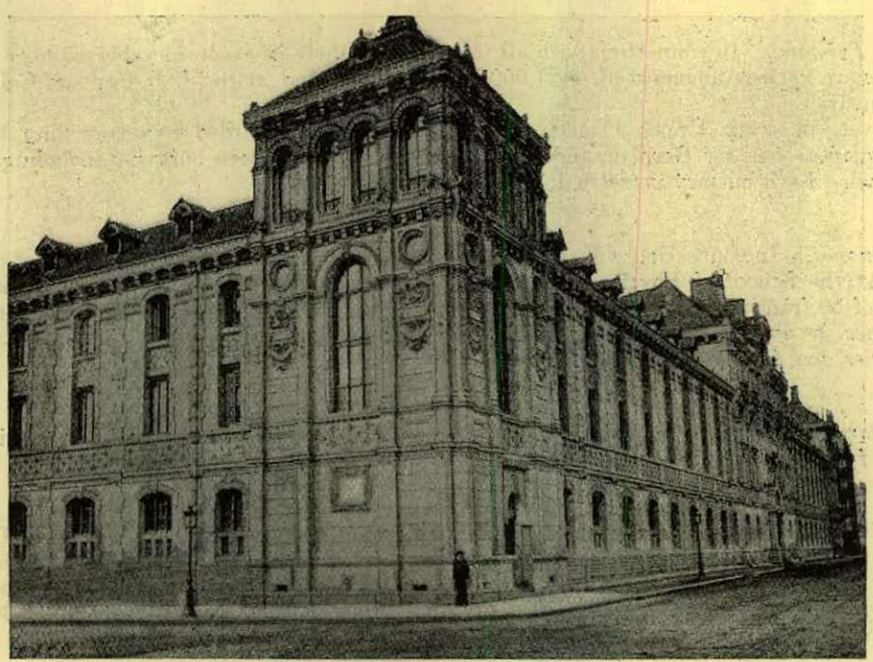
In 1900 there were :

For Primary Education,	70 classes ;	133 divisions.
For Commercial Education,	39 classes ;	87 divisions.
For Drawing Education,	51 classes ;	79 divisions.
For Singing Education,	25 classes.	——

Upper Primary Schools.—The Upper Primary Schools of Paris are beyond all question magnificently installed and equipped institutions ; the Authorities seem to have reserved them for their special favour, and no expense has been considered too great which made for their fuller development and efficiency. Every opportunity is given those who enter them to develop their natural gifts and bents. Ambitious children of any class, possessed of high intellectual endowments, may secure free education or residential bursaries tenable at them, and may rise at the conclusion of their studies to Secondary or Superior Education, in the enjoyment of further bursaries. They thus, in a measure, furnish the link between Primary and Secondary Education. Their programmes of work and general organisation present no wide distinction from those of the Upper Primary Schools already dealt with, but a more systematic effort is directed to preparing the pupils for the lycées and colleges and for the schools of "Arts et Métiers."

There are five Upper Primary Schools for boys and two for girls. All are liberally endowed with bursaries.

Collège Chaptal.—Running parallel to these Upper Primary Schools, but rising finally above them, comes a school of special character, viz., the Collège Chaptal. This school may be regarded as summing up the whole of the Primary System of the city and then carrying it on further, beyond Secondary, to what



COLLÈGE CHAPTAL.

is termed Superior Education. It thus resembles in a large measure our own Model School at Fort-street with its existing organisation of Primary, Upper Primary, and Secondary Education, differing from the latter in that it makes no provision for Kindergarten or Maternal work, and addresses itself solely to the modern side of education. The aim of the School has been thus stated :—

"It was desired to furnish the well-to-do middle classes, from which the leaders of the great commercial houses and industries are recruited, with an education capable of training men who were at once cultured and practical,—cultured, thanks to an education equivalent to that provided by classical education ;

education ; practical, by reason of the large amount of attention given to knowledge of a precise and concrete nature." The training of cultured leaders of Commerce and Industry is then the object of the Collège Chaptal. In this connection the Authorities quote from a report of 1899 the following figures (among others) as furnishing evidence of the success with which the school is realising its aim :—

Pupils received at the Ecole Polytechnique	7
Pupils received at Great Military School of Saint-Cyr	10
Pupils received at Central School of Art and Manufactures...	9
Pupil received at School of Mines	1
Pupils received at School of Physics and Chemistry	3
Pupils received at Commercial High School	7
Pupils received at Commercial Institute	2

Children may enter the school at the age of 6, and remain as pupils for a period of ten years, leaving finally to enter the great Superior Schools referred to above. During this period they will have passed successively through Infant Class, Lower and Upper Primary Schools and in the last two years the classes devoted to Superior Education. Preparation for this last work is generally made in the classes devoted to Modern Secondary Education, which runs parallel to the classes of the Upper Primary School. The Collège Chaptal is a boarding school. There were in 1900, 1,482 pupils. The building is one of the finest specimens of school architecture to be found the world over, and is replete with all material accessories necessary for the adequate fulfilment of its manifold activities. In 1899 the total expenditure incurred in connection with the work of the school was 1,107,270 francs (about £44,300). In 1900 bursaries alone accounted for 107,400 francs (about £4,300). Since its institution in 1844 the School has had five Directors. It is interesting and instructive to note the unity of purpose, and the fidelity to the traditions of the school and to the aims of the founder, of these successive occupants of the directorship. The School is regarded as fulfilling an essential function in the national education and though many important modifications have been introduced in response to modern educational developments, the School's grand aim, as above stated, has never been departed from.

Bursaries.—The amount of money devoted to bursaries furnishes monumental testimony to the liberality of the Authorities and to their desire to further the best interests of education. No branch has been forgotten. Primary, Upper Primary, Secondary, Superior, and Special are all sharers in their bountiful favours. In 1900, 3,000,000 francs (about £120,000) were allocated to this end.

Primary.—We have already seen how children of poor people may secure boarding bursaries. In addition, 240,000 francs (£9,600) are absorbed in bursaries tenable at private schools by children who are unable to secure admission into the Communal Schools, which are still somewhat inadequate to the demand.

Upper Primary.—In connection with all these schools there is a considerable number of maintenance bursaries, in various amounts up to 1,000 francs (£40), and at the J. B. Say and Collège Chaptal residential bursaries.

Moreover, in every Upper Primary School are annually awarded two travelling bursaries for Modern Languages—one for German, and one for English—in all sixteen bursaries including those of the Collège Chaptal. Each bursary is worth 1,500 francs (£60).

Professional.—In connection with these schools we find bursaries for maintenance, for clothing, and for meals. At the School of Physics and Chemistry every pupil whose work justifies it may receive a monthly sum of 50 francs (£2). Similarly, in the two schools devoted to painting, decorative art, &c., varying amounts may be awarded those pupils whose work and conduct deserve such recognition. There are special bursaries, too, for the children of the poor.

Secondary Education.—In 1900, 262,780 francs (£10,512) were absorbed in bursaries of which there are 274 for the various lycées of the city.

Superior Education.—There are bursaries for the great Central School of Arts and Manufactures, subsidies for the Medical, the Pharmacy, and the Law Schools, to be devoted to travelling or study bursaries, bursaries for the Pasteur Institute intended for talented young men of moderate means, to enable them to carry on their research or other work of importance to humanity, a subsidy of 30,000 francs (£1,200) to the Practical School of higher studies, &c.

Special.—Every institution, of whatever kind, contributing to the advancement of education receives liberal monetary recognition. There are bursaries for deaf and dumb, blind and stammering children, for the Commercial Institute, the Colonial School, Dental School, Agricultural Schools, &c.

Travelling Commercial Bursaries.—Ten of these are awarded every year after a competitive examination and are valued at 2,000 francs (£80) each. Candidates must be between 16 and 26 years of age. The President of the Chamber of Commerce assigns to each bursar his place of residence abroad. Finally 1,300,000 francs (£52,000) are devoted to the system of boarding-houses in connection with the Primary Schools.

The

The following figures will serve to bring into bold relief the main facts of this report on the schools of Paris :—

EXPENDITURE FOR PRIMARY EDUCATION.

	1899. Francs.	£
Total amount for all purposes	31,428,807	1,257,152
Individual Items.		
Collége Chaptal	1,107,270	44,292
Upper Primary Schools (7)	1,960,923	78,437
Professional Schools	1,694,627	67,785
Primary Schools (Lower)	13,736,878	549,475
Maternal Schools	2,798,200	111,928
Courses in Singing, Drawing, Gymnastics, Manual Work	1,872,100	74,884
Evening Schools	274,740	10,990
Subsidies for Educational Purposes	540,100	21,604
Bursaries, Primary Boarding-Schools	2,225,520	89,021
Cantines (Dining-rooms)	900,000	36,000
School Colonies and Excursions	210,000	8,400

Number of Schools, Pupils, &c.

1899.

Upper Primary Schools	Boys :	Number of Schools	5
		Number of Teachers	393
		Number of Pupils	4,279
	Girls :	Number of Schools	2
		Number of Teachers	66
		Number of Pupils	811
Professional Schools	Boys :	Number of Schools	7
		Number of Workshops	65
		Number of Teachers	167
		Number of Pupils	1,123
	Girls :	Number of Schools	6
		Number of Workshops	59
		Number of Teachers	150
		Number of Pupils	1,534
Cours. Complémentaires	Boys—General :	Number of Courses	17
		Education : Number of Teachers	38
		Number of Pupils	1,104
		Professional Courses : Number of Courses	6
		Number of Teachers	14
		Number of Pupils	220
	Girls—General :	Number of Courses	28
		Number of Teachers	61
		Number of Pupils	1,328
		Professional : Number of Courses	6
		Number of Teachers	12
		Number of Pupils	247
Primary Schools	Boys :	Number of Schools	202
		Number of Classes	1,562
		Number of Teachers (holding Brevet Supérieur)	897
		Number of Pupils	71,732
	Girls :	Number of Schools	196
		Number of Classes	1,421
		Number of Teachers (holding Brevet Supérieur)	1,021
		Number of Pupils	61,342
Maternal Schools		Number of Schools	159
		Number of Classes	653
		Number of Pupils	29,539

These figures show at a glance the enormous efforts made by the Municipality of Paris in the cause of education. But the Authorities are not resting on their oars; they are still dissatisfied with many features in the existing order of things. New schools are continually being created, those already established more fully adapted to contemporary requirements, classes reduced in size and additional teachers appointed, &c. To meet the pecuniary exigencies of the situation it was proposed to raise a fresh loan of 60,000,000 francs (£2,400,000.)

Conclusion—In this rapid delineation of the Paris system of Primary Education, only those features have been touched upon which had not already been dealt with in a previous section of this report; innumerable details of interest have been necessarily omitted. Sufficient has been given to demonstrate the prodigious activity of the Authorities in all the spheres of school, after-school, and auxiliary work. Indeed it may be said that if the French were slow, compared to their German neighbours, to recognise the vital relevance of education to the national well-being, they are now fast making up the lost ground.

In Paris, as in the rest of France, that characteristic of French genius which expresses itself in logical order and symmetrical arrangement has embodied itself in a vast system of Primary Education closely inter-related and continuous, which is designed to meet the varying demands of the people. With its liberal scheme of bursaries, in its subsidies to the innumerable Associations and Patronages, by its Evening and Vacation Classes, its School Colonies, Dispensaries, Cantines, &c., the Paris system displays a generosity, a sympathy with the needs of all, and a modern-day wide-awakeness, which eloquently testify to the high sense entertained by the Authorities of the scope and value of education.

CHAPTER XI.

CHAPTER XI.

Elementary and Higher Grade Schools of England.

[J. W. TURNER.]

Introduction.—The compulsory period of attendance in the Board Schools of England is from 5 to 14 years. Between the ages of 5 and 7, the child is attending the Infant School. Here he learns to read the simple prose stories usually found in Infant class readers, to write on paper or on slates in a bold small-hand from copies on the blackboard and from dictation, and to work simple questions in arithmetic, mentally, and on paper, or slates, involving a knowledge of the fundamental rules. A modified form of Kindergarten is taught, but the time spent in the work does not exceed one hour a day. In the chapter on Kindergarten, the method of teaching this subject, as seen in some of the London Infant Schools, is described. Between the ages of 7 and 8, as a rule, pupils are promoted from the Infant Schools to the Primary Departments. Starting with Standard I, the child passes step by step to Standard VII, when, having reached the age of 14, he has completed his education from the legal standpoint. The general scope and character of the instruction in the elementary primary schools may be compared with what is done in our own ordinary public schools which accomplish good 4th class work, but in some special directions, to be noted later on, it will be seen that our schools fall short, in some respects, of the best ideals.

Establishment of Higher Grade Schools, Birmingham.—About twenty years ago the more intelligent boys in the elementary schools reached the highest standards about the age of 12 years, and as the law then allowed boys educated up to these standards to leave school, many took advantage of the exemption and made a start in life. Thinking men, interested in the welfare of their race, saw a danger in this early departure from school, and brought about the establishment of schools called 7th Standard Class and Higher Grade. The people of Birmingham were early in recognising the necessity for these institutions, and in 1884 the Chairman of the School Board, George Dixon, Esq., in his annual address[1], submitted "That it was the Board's duty so to arrange the curriculum of instruction in continuation of the standards as that boys should be attracted towards, and not repelled from, manual labour." He offered the Board free use of premises which he fitted up at his own expense in order that it might make an inexpensive experiment in the direction of technical and manual training linked to the work of Standard VII. The experiment having proved a conspicuous success, the Board built, in 1892, the Waverley Road School as a Higher Grade School with co-educational classes for technical and commercial training, and fitted it with laboratories, workshops, and all the necessary apparatus for the advanced work. In 1898, the George Dixon Higher Grade School for boys and girls was erected. These two Higher Grade Schools supply the educational wants of Birmingham parents who desire the higher primary education for their children.

Pupils who have reached Standard V in the elementary schools, about the age of 12, and who intend to continue at school after passing Standard VII with the object of taking up the specialised work of the upper schools, are admitted to the two Higher Grade Schools. These schools in their advanced classes aim at giving their pupils an opportunity for specialising, but they also keep in view the necessity for a wide intellectual training. The great object in establishing them was to induce boys and girls to remain at school after passing Standard VI, about 13 years of age, for a further period of three years, to the age of 16. Dr. MacCarthy in his address states that the object has been attained, and refers to the very satisfactory percentage of pupils taking the third year's course in the Higher Grade Schools.

The pupil teachers employed in the Birmingham Board Schools are largely drawn from the ranks of the advanced classes in the Waverley Road and George Dixon Schools. The subjects taught in the advanced classes are :—

(*a*) *Scientific and Technical Training.*—Mechanics, Theoretical and Practical Physics (especially Electricity), Theoretical and Practical Chemistry, Machine Construction and Drawing, Practical Plane and Solid Geometry, and Manual Work in Wood and Metal.

(*b*) *Commercial Training.*—Commercial Geography, Book-keeping in commercial forms, Shorthand, Mensuration, and one Modern Foreign Language.

Girls' Training.—Domestic Economy (including Needlework), Cookery, Hygiene, and Vocal Music.

In addition to the Higher Grade Schools, the Birmingham Board has established seventeen schools in different parts of the city for those pupils who, having reached Standards VI and VII, can only spend *one year* more at school.

The

[1] Dr. MacCarthy : "Thirty years' Experience of Educational Work in Birmingham."

The extra course of instruction for this class of School is :—Commercial Geography, English History, Letter-writing, Book-keeping, Shorthand, French, and Physiography, and for the girls a selection from these subjects together with Needlework, Cookery and Domestic Economy. The school buildings which came under notice in Birmingham are structures of one storey, situated in grounds of fair size, and standing well back from the street. The exterior is pleasing, and the internal arrangements admit of satisfactory organisation.

The Waverley Road Higher Grade School.—The assembly room, where the falling-in of the pupils takes place, is beautified with many fine busts and works of Art, gifts generally of the patrons of the school. Science is the strong feature of the work, and the technical equipment is very good. Boys and girls sit together in the class for mathematics, under the instruction of a lady teacher.

At the time of the Commissioner's visit, boys and girls were employed in the laboratory at practical chemistry, and in the physics laboratory a class of girls was engaged in elementary practical physics. Seeing that the girls of the school were receiving so much teaching in science, the question : Why was this so? naturally presented itself to one's mind. The head teacher, to whom the question was put, speaking with an evident tone of conviction as to the correctness of his judgment in giving prominence to science teaching to girls, replied that the particular training was just as intellectual for girls as for boys ; and for the girls had the additional advantage of giving a good preparation in subjects which would prove of great value to them when they became pupil teachers. It will be remembered that it was stated the Higher Grade Schools are preparatory training institutions for the female pupil teachers employed in the Birmingham Board Schools.

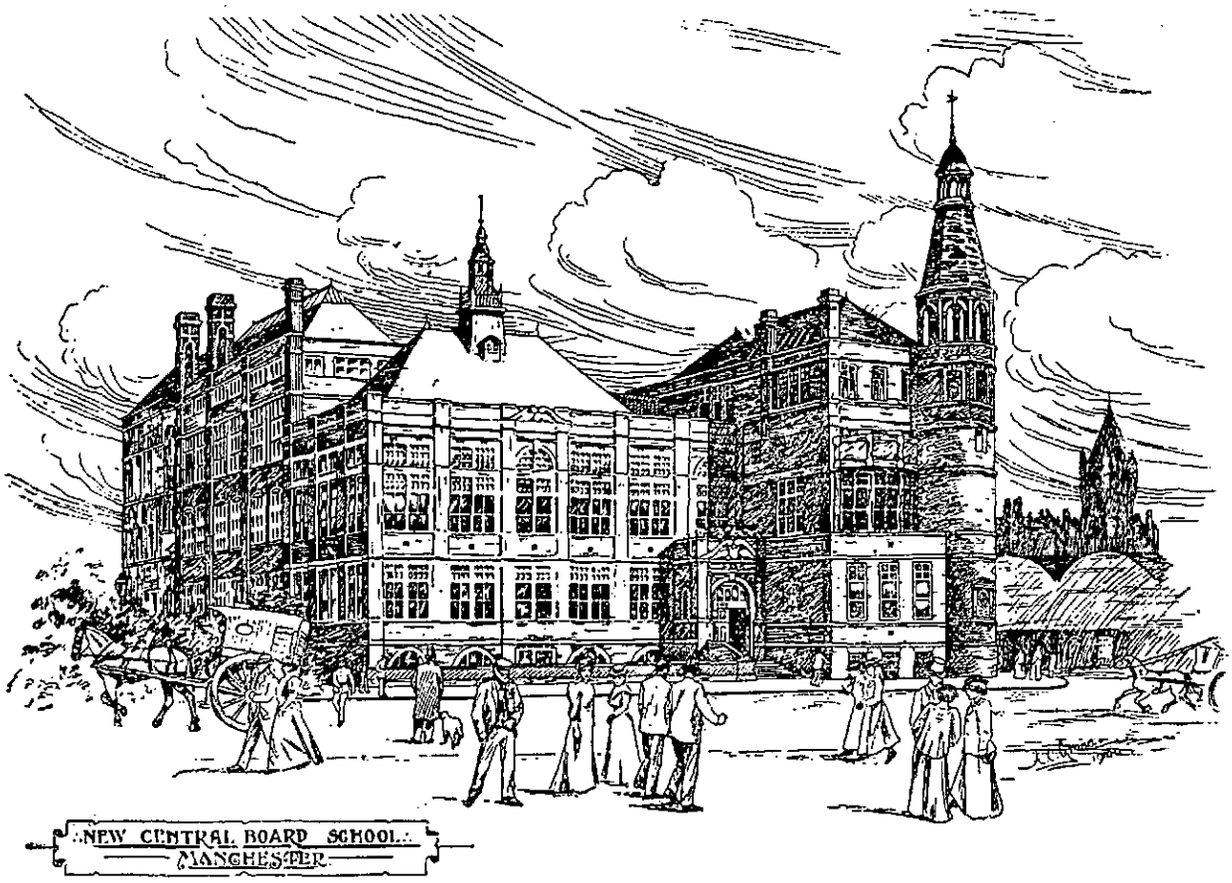
The school is attended by 300 boys and 300 girls. A head master is in charge of the school, with the first assistant in the position of mistress.

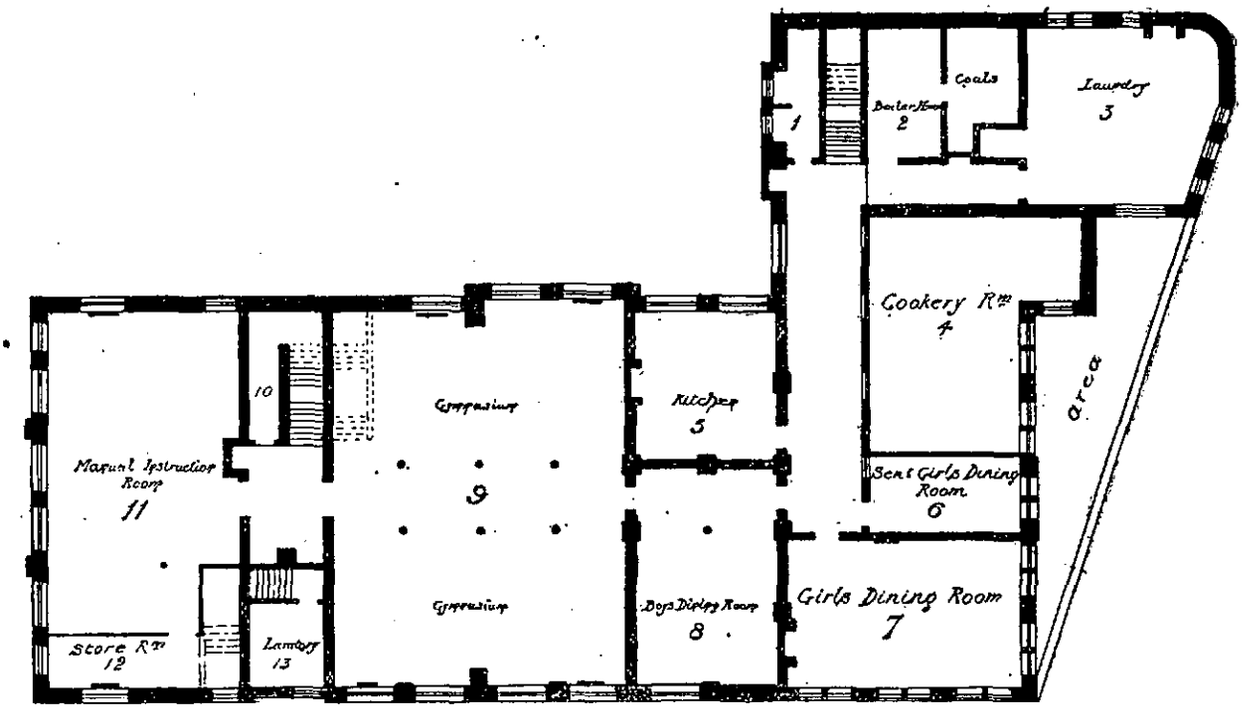
The Central Higher Grade School, Manchester.—This great school is attended by 900 boys and 400 girls, not on the principle of co-education, and is conducted in two sections—elementary standard work in the lower school, and science work in the advanced or upper school. The buildings are substantial brick structures, three stories high. On the ground floor is the great central hall for purposes of assembly, and radiating from it are the class rooms. The lecture rooms and laboratories are on the other floors. The hours of daily teaching in all the higher grade schools of England are longer than those in the elementary schools, and are generally fixed from 9 to 12 in the morning, and 2 to 5 in the afternoon, with two quarter-hour intervals. The science teaching in the Central Higher Grade School, Manchester, is admirable, and the equipment of the laboratories is remarkably good. The school is immensely popular, and a great many of its pupils come from long distances.

Some teachers, who have given special thought to advanced work in primary instruction, in commenting on the popularity of the Higher Grade Schools (especially those devoting much time to science subjects), and on their particular aim in specialisation, see the danger that pupils may be admitted into them without the groundwork of a good general education. They contend that the system of Inspection, as at present carried on, is not searching enough, and that in some cases pupils are allowed to enter the Higher Grade Schools who would be better occupied in receiving instruction in the ordinary elementary schools. On the Girls' side of the school, Domestic Economy and commercial teaching, which mainly prepares for positions in business houses, post-offices, &c., are included in the curriculum. The classes in Shorthand are very full.

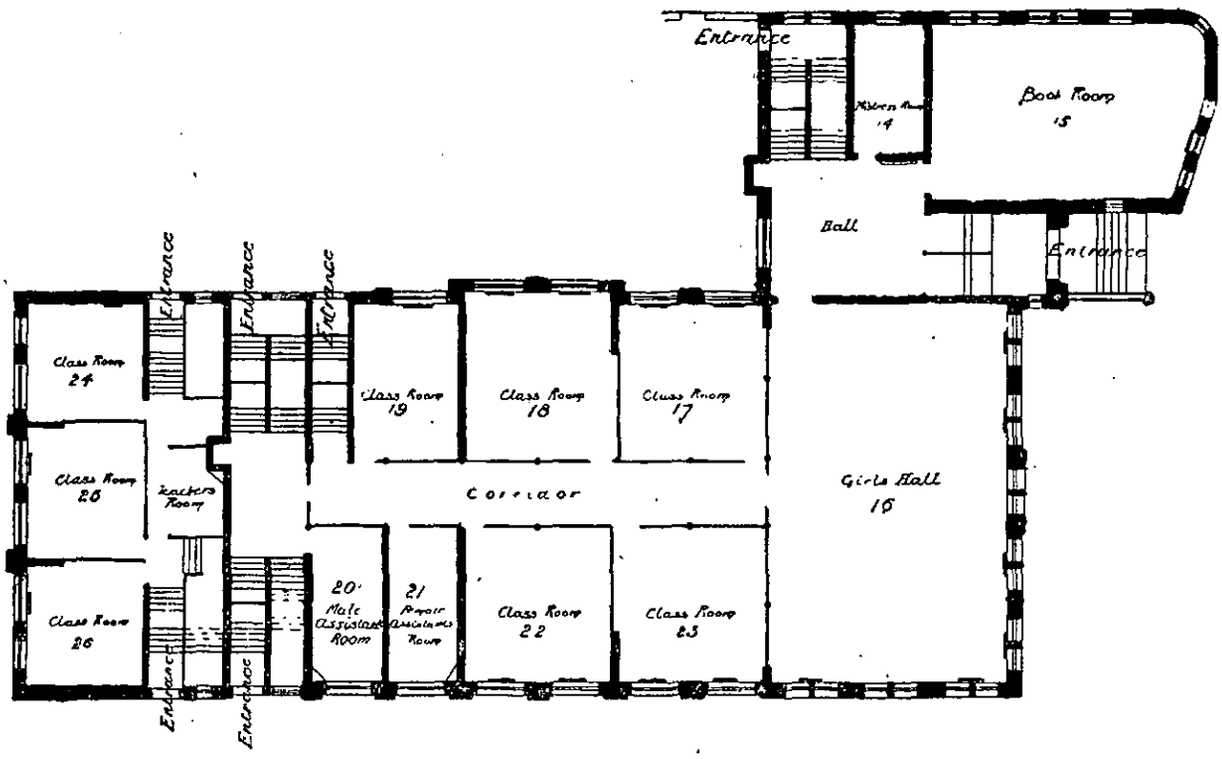
In the general management of the school two features were observed by the Commissioner—the opening devotional exercises and the discipline. At falling-in time the boys assembled in the great central hall, standing in their respective classes, each teacher being in charge of his class. Some appropriate collects and psalms were read by the head master, a hymn was sung by the pupils, accompanied on a small organ by one of the teachers, and the Lord's Prayer recited by pupils and teachers. The truly reverential manner of the lads while repeating the Prayer, and throughout the short service of about ten minutes, left an impression of the great good such a training must achieve. On the general order of the head master, the classes, each under its own teacher, marched off quietly to their rooms to commence the day's work.

The playground is a large unenclosed unoccupied space, adjacent to the schoolrooms, whose doors open out on the playing area. The surface is sufficiently soft to admit of the lads indulging in their games with a great amount of freedom and little risk of danger. The ground is in close proximity to two streets, but no interference takes place either on the side of the public passing up and down or the boys carrying on their games. At the first sound of the head master's whistle, at the end of an interval for recreation, every boy immediately stops his play, retaining the position he was in when he first heard the sound, and remaining in the position until the second whistle is sounded, when he moves away orderly and promptly to his ranks, preparatory to marching into school. The obedience and promptitude are excellent features in the discipline, but the marching into school is lax. The buildings are used in the evening for technical classes. The head master takes great pride in his school, with which he has been connected—either as a pupil or teacher—all his lifetime.

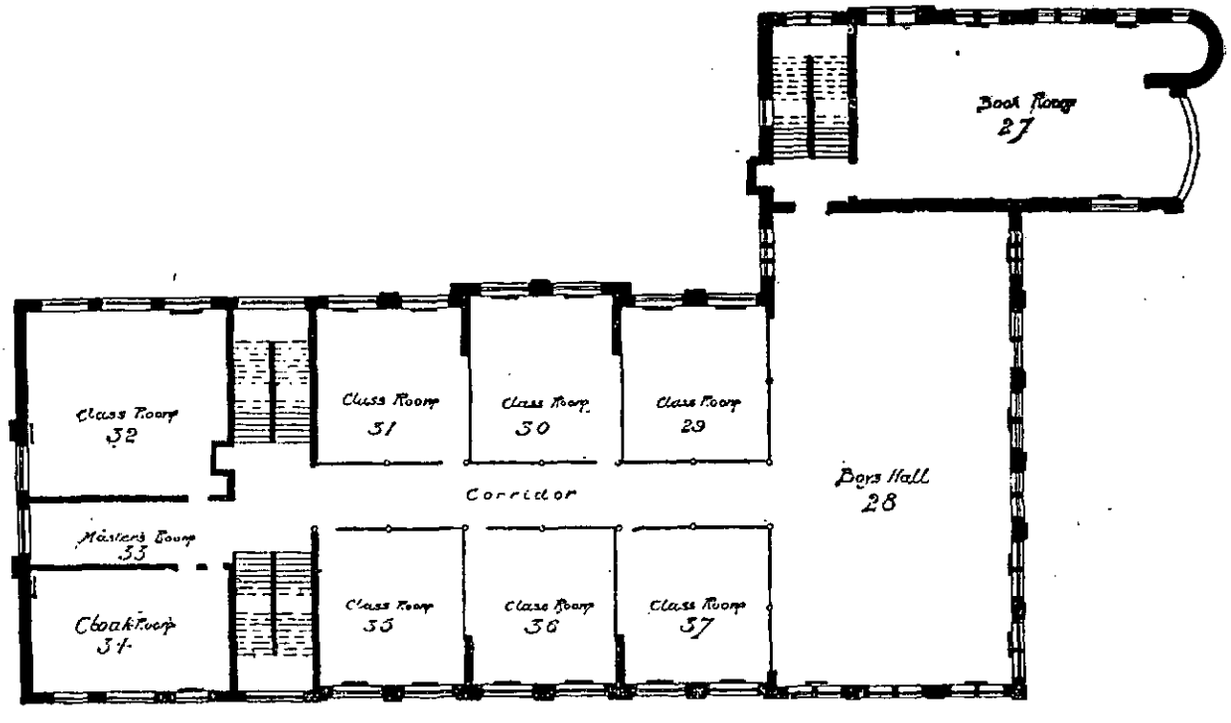




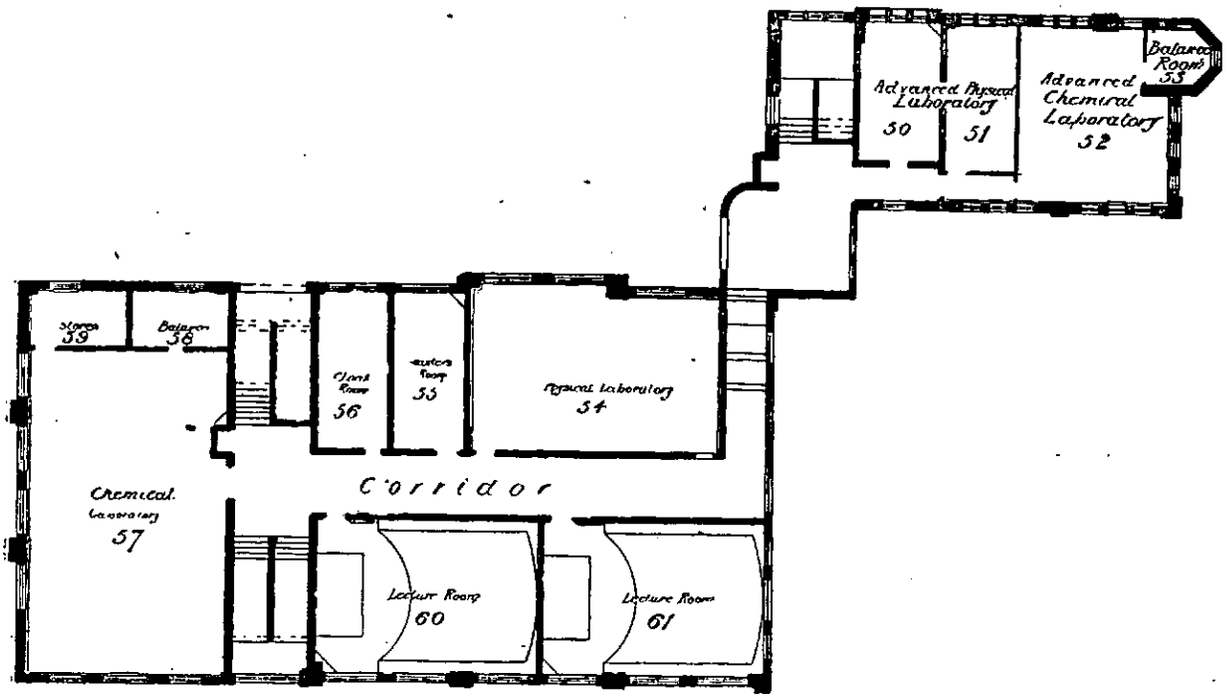
NEW CENTRAL BOARD SCHOOL.—BASEMENT.



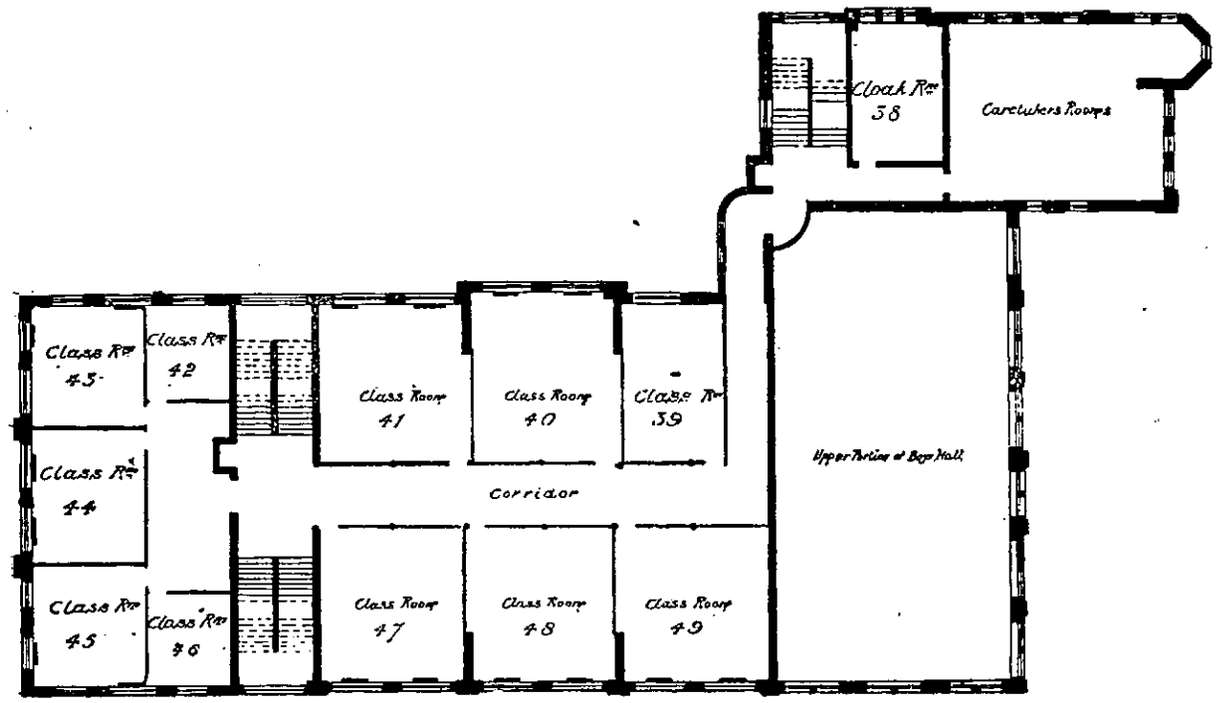
NEW CENTRAL BOARD SCHOOL.—GROUND FLOOR.



NEW CENTRAL BOARD SCHOOL.—FIRST FLOOR.



NEW CENTRAL BOARD SCHOOL.—THIRD FLOOR.



NEW CENTRAL BOARD SCHOOL.—SECOND FLOOR.

Higher Grade School, Leeds.—The Higher Grade School is a splendid block of buildings in three stories. The school is composed of two great sections—Standard II, pupils about 8 years of age, on to Standard VII, forming the elementary section; and Ex-Standard VII, pupils about 14 years of age, taking a four years' course, forming the upper section. These sections work in separate parts of the building, and co-education does not exist excepting at the two extremes of the school—Standard II in the lower school where little boys and girls are taught together, and Class IV in the upper school, pupils of 17 and 18, where boys and girls may be seen working together in the laboratories. The school is attended by 1,000 boys and 800 girls, and is under the management of a head master.

The strength of the school lies undoubtedly in its science work, but the head master claims that its excellence is seen in the accomplishment of all-round work, and if there is any one branch better than another it is the English. He does not specialise until the pupil is through the lower school, and even then the specialisation is not very marked, because by means of parallel classes (see time-tables) he groups his work so that a boy gets the training in the direction in which he is studying, and at the same time does not lose the general education which is equally necessary. The specialisation is on the class work, and not on the tastes of the individul pupils.

A fair percentage remains long enough to enter for the Junior Examinations at the Universities, and one of the features of the school is a class preparing for admission to the training schools for teachers. The members of this class remain on to their 17th or 18th year, complete what is really a secondary course of education, entirely academic, and then enter a training college without serving as pupil teachers. The head master is an opponent of the pupil-teacher system and an advocate of the method just described.

There are 700 pupils in the Leeds Higher Grade School availing themselves of the higher education it affords, at a cost to their parents of £1 10s. a year for each pupil. The presence of so large a number of senior boys and girls doing advanced work in a public school, at an age when the best school results can be realised, speaks volumes for the standard of primary education in Leeds, and for the school spirit pervading its people and its teachers.

The head master, left to his own judgment, would make co-education general in the school. His views on the question were well borne out by the manners of the senior boys and girls as they worked side by side in the laboratories.

The facilities for teaching science are superior. The rooms are large and well furnished, and the equipment is of the best description. The apparatus for teaching physics, particularly electricity, is very fine.

Commerce is a subject to which considerable attention is given, but the head master regrets that he is not well enough provided with teaching machinery to carry out the instruction thoroughly, and he envies the well-equipped commercial schools of the Americans, whom, he considers, Englishmen have more reason to fear than Germans in the race for commercial supremacy.

The teaching of foreign languages is on intelligent lines, and conversation enters largely into the exercises. In order to acquire the proper accent, many of the teachers in the United Kingdom spend their holidays in France and Germany. Their teaching of the modern languages has therefore a real value. The sexes are combined in the science and commercial subjects.

The manual training consists of cookery and the cutting-out and sewing of garments for girls, and of wood and iron work for boys. The exercises are preceded in the lower classes by hand-and-eye work, principally in cardboard. The classrooms for the purpose are fitted up on the same elaborate scale as exists in the science laboratories.

There is no special effort made to maintain discipline. The manner of the entrance and dismissal is opposed to the views of a strict disciplinarian, and the orderly, smart movements of our own boys are not known in English Schools. The pupils, however, while under instruction in their class rooms, are attentive and thoughtful. Corporal punishment is rare, and its infliction entirely in the hands of the head master. Moral suasion and a healthy public opinion rule this great school.

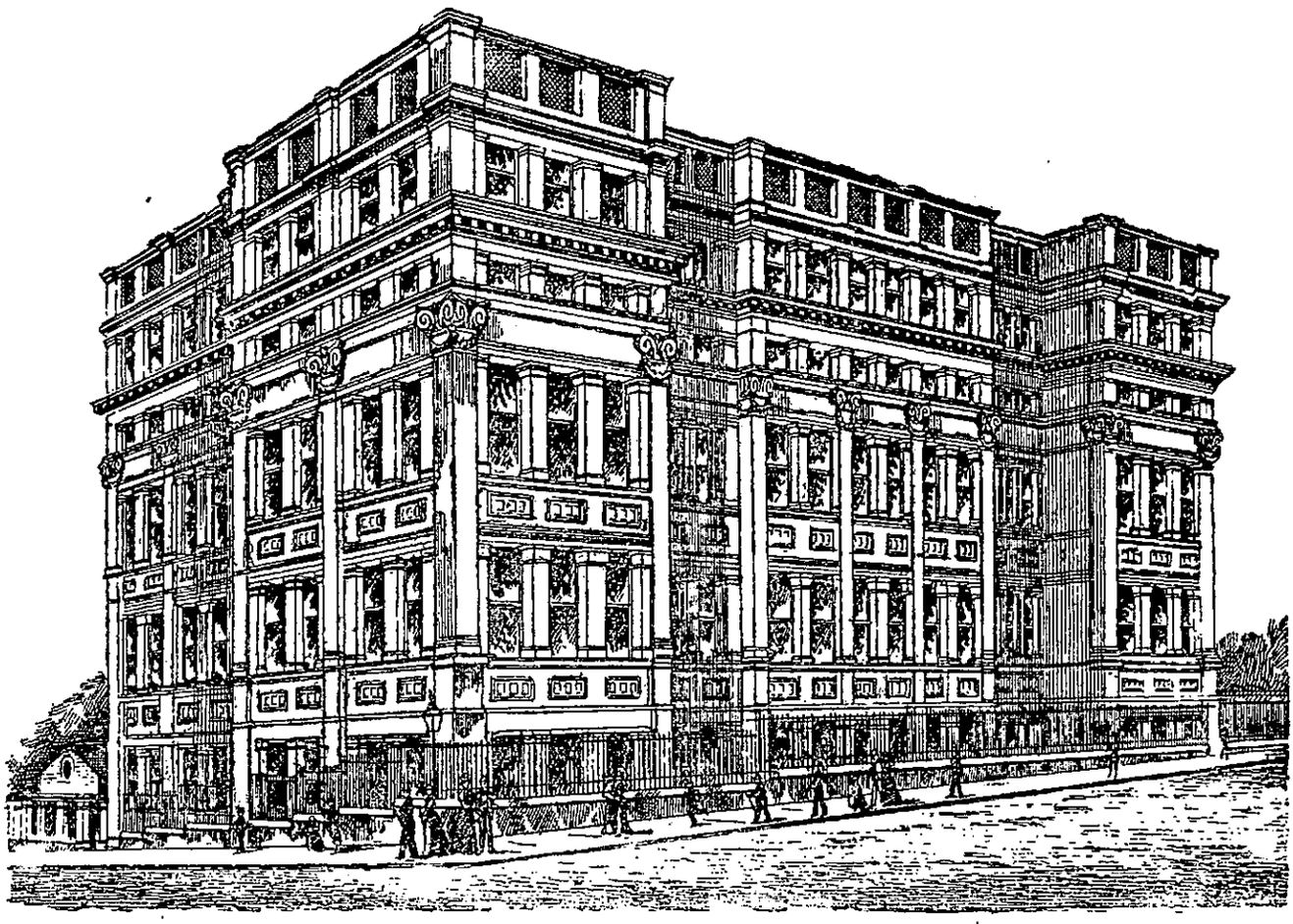
The head master is strong in his convictions, candid in his opinions, and courteous in his demeanour. He has an able, loyal staff of teachers with whom he shares his great work, and for whom he entertains the greatest respect. The co-ordination of the work is arranged intelligently as shown in Modern Languages and Commerce, Drawing and Mechanics, in the latter subjects, not idle copying of machines but practical problems of value, simple though they may be.

The finest features of this great public school, which is exercising so powerful an influence for good in the large manufacturing town of Leeds, may be summed up thus :—

(1) Splendid basis of work in the lower school.
(2) Specialisation on completion of elementary primary course.
(3) Excellence of the science work.
(4) The intelligent teaching of the English and kindred subjects.
(5) The modern treatment in Art and Commerce.
(6) The rational method of treating Foreign Languages.

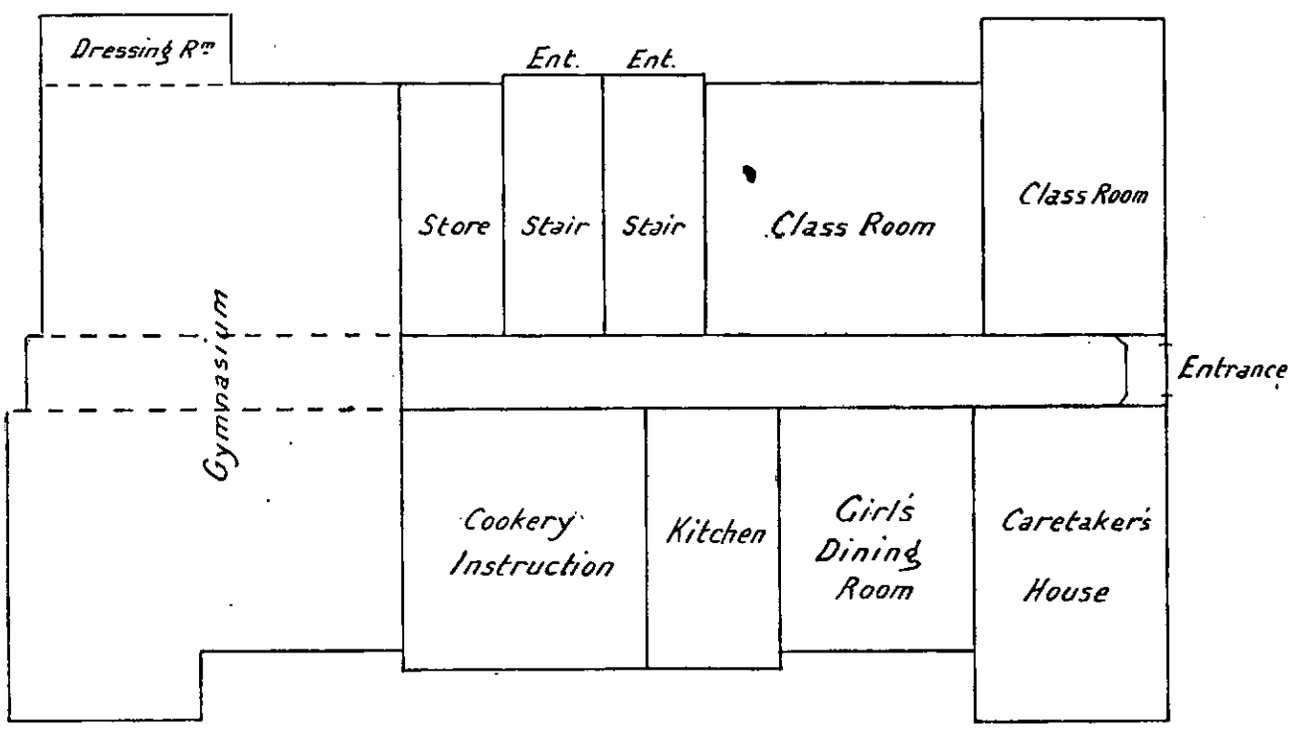
The organisation is very satisfactory, and the general tone of the school excellent. The institution is prominent among the very best of the English Board Schools.

Higher Grade School, Fleet Road, Hampstead, London.—The buildings are unpretentious one-story structures, situated in a very pleasant and prosperous suburb. From a central main hall, not very large, class rooms, with accommodation for about 50 pupils in each, branch off. The school has two sides (elementary and upper), and the classes are co-educational. Admission to the upper school is gained after passing Standard V in the elementary school. The late head master, who died in the beginning of this year, after a long and honourable service in English schools, was a strong advocate for co-education. The elementary school at the time it was visited had an enrolment of 400, the higher grade school 800. The higher grade staff numbered sixteen, males and females equally divided, and among the number were four University Graduates, one from Oxford, one from London and two from Wales. The elementary school was in charge of a mistress acting under the head master. The number of pupils in the higher grade working beyond Standard VII was 200, and the specialisation was chiefly in the direction of commerce and art.

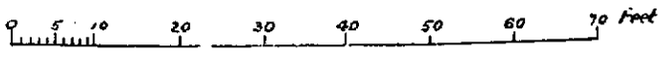


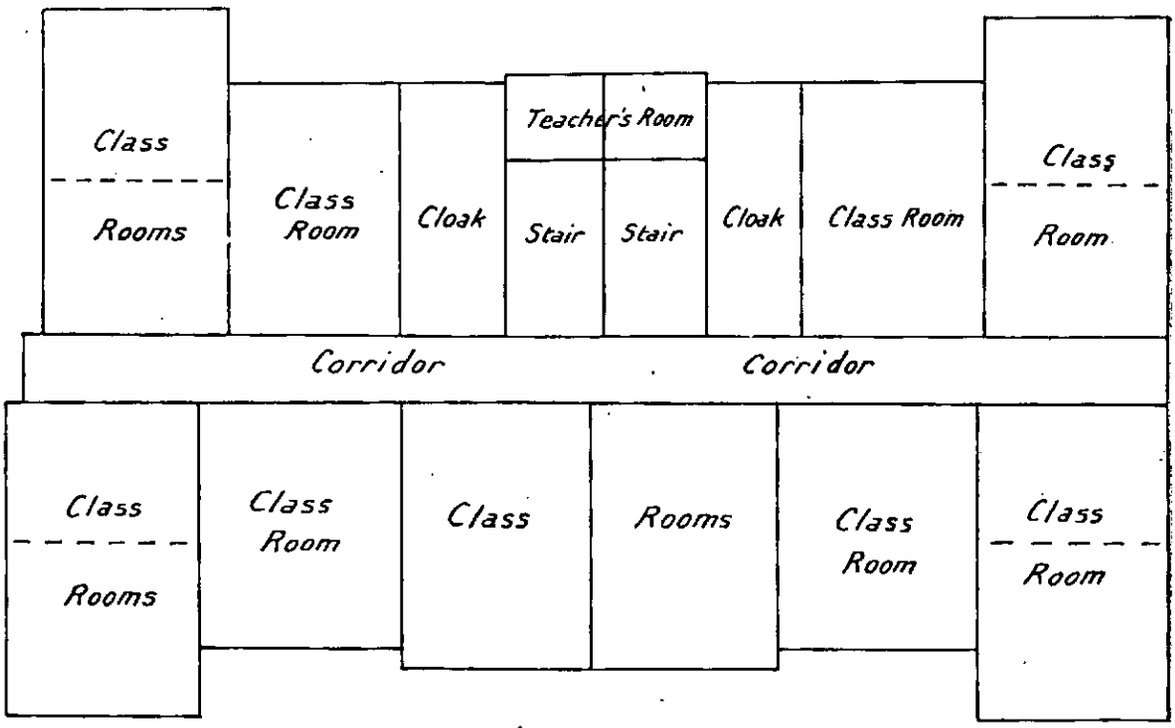
LEEDS CENTRAL HIGHER-GRADE SCHOOL.

Line Plan of the Leeds Central Higher Grade School.



Ground Floor

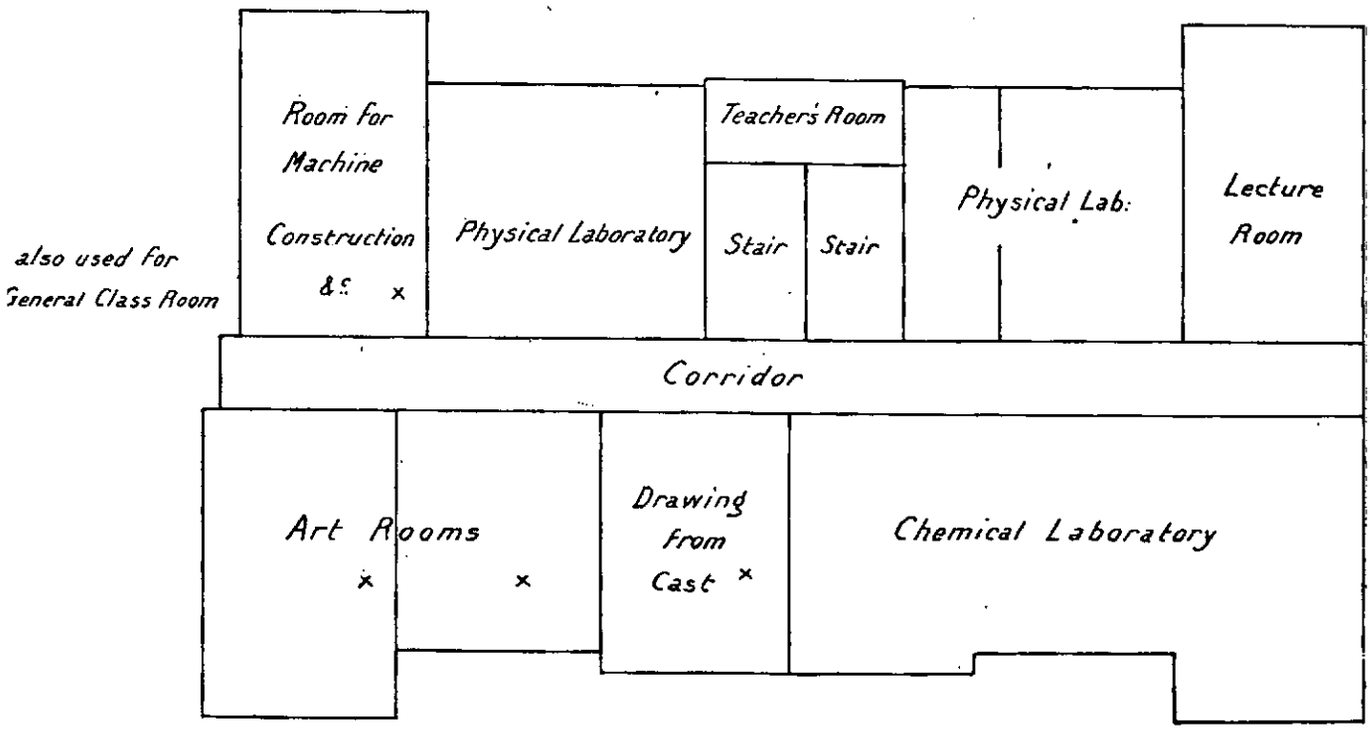




First & Second Floors alike

Girls Second Floor

Boys First Floor



Third Floor - Science Floor -

The residents in this part of London are chiefly connected with business, either in charge themselves or as assistants in business houses, and so the children are largely trained for business pursuits, and compete in large numbers for the Junior Certificate of the London Chamber of Commerce. To this end, Typewriting and Shorthand form a considerable part of the curriculum, and both subjects are taught by members of the ordinary staff. A small amount of teaching is given in a Foreign Language.

The Manual Training and Art Work are very fine features of the school. Each branch is presided over by a very competent, specially-trained man. The science teaching cannot be compared with what was seen in the large provincial towns.

The pupils have the best inducements to remain on at school. The London County Council awards scholarships worth £10 per annum for two years, and in very meritorious cases a scholarship worth £12 for a third year, with free education and books. At the age of 15, a pupil may qualify for a secondary school course by passing the Intermediate Examination. The list of private benefactions for scholarships which admit to the secondary schools is large. Very few go on to the University, the expense, even with a scholarship, being too heavy. Many of the pupils enter the Civil Service, business houses, or a training college for teachers. The discipline in the class room is good, but the dismissal, as in all London schools visited, is not orderly. The conduct in the street is not decorous, the boys are boisterous but not rude. They are extremely civil, and when asked a question reply in an intelligent, straightforward manner. They are just as keen on sport as our Australian boys. Drill receives little attention in the curriculum. There appeared little occasion for corporal punishment in the Fleet Road School. Perhaps the finest feature of this School's work is the excellent part-singing and reading at sight. A small, splendidly balanced choir of about sixty voices has a large and varied repertoire of the best school choruses.

Burghley Road School.—The Burghley Road School has an elementary and an upper side, and the boys and girls are in separate class rooms. Drill is taught in the Girls' School on admirable lines, and with apparent good results on the physical bearing and discipline of the pupils. Little girls in Standard II drill with the steadiness and precision of soldiers. In the march movements the position of the body, the accuracy of the step, the general effect, are features quite as good as our teachers are accustomed to witnessing at the magnificent annual gatherings held by our own Public Schools Associations. Drill is not usually a strong subject in the Board Schools of England, but some teachers, among them those of Burghley Road, make a point of regular physical training in their schools. Another

Another class of girls in the same school shows great proficiency in reading and recitation, expression and enunciation being particularly good.

The Higher Grade School is a centre for the district, and admission is gained by competition between pupils of elementary schools from Standard V upwards. The enrolment approaches 400 and there are fourteen teachers upon the staff. The school aims at the Intermediate Scholarship and the Cambridge Local Examinations. Manual Training and Art work are well developed in the school. Science is a subject which receives great attention, and the pupils have the privilege of attending the laboratories of the pupil-teacher centre near by. Commercial work is limited. French is taught on the conversational method. It was pointed out by one teacher in a Higher Grade School that there is a tendency in teaching foreign languages on the natural method of going too far in that direction. His opinions are worthy of some attention, from the fact that he is a trained English teacher who has lived in France, and has had considerable experience of French life. Alongside the conversation in the French language, which he admits is sound teaching, he advocates a study of the grammar, so that the lad may learn for himself some of the beauties of French literature. It is known to the Commissioner that in our own city we have a gentleman, M. E. Périer, who has conducted for some years classes for public school boys, on the natural method almost exclusively. That he has been successful in making our boys proficient in French conversation is proved by the fact that several of them have been awarded prizes at the annual examination held by the Alliance Française.

While acknowledging the good work that is going on under this gentleman's admirable system, the Commissioner coincides in the view taken by the teacher of the Higher Grade School already referred to.

Special Schools.—Special schools for physically and mentally defective children have been established in many of the large towns of Great Britain under the management of the City School Boards. In London alone there were in 1902 under the supervision of the London School Board—

10	Schools for the	Blind	.....	226	on roll,	183	average attendance.	
18	,,	,,	Deaf	553	,,	465	,,	,,
60	,,	,,	Mentally Defective	2,826	,,	2,204	,,	,,
5	,,	,,	Physically Defective	151	,,	116	,,	,,
93			Total	3,756	,,	2,968	,,	,,

[Through the courtesy of the Government Statistician, T. A. Coghlan, Esq., the following information, regarding the number of children between the ages of 6 and 14 years in the metropolitan area of Sydney, who are deaf and dumb, blind, or insane, has been received:—Deaf and dumb, 70; blind, 27; insane, 5; total, 102.

Through the same source the Commissioner has obtained the number of such children located in State institutions, viz.:—Deaf and dumb, 57; blind, 21; insane, 4; total, 82.

Thus it appears that only twenty of these children, mostly the deaf and dumb, are outside the State institutions existing for their benefit. It might be well for the Education Department to further investigate the causes for non-attendance on the part of these twenty. The reasons may be quite sufficient. The Commissioner is of opinion that so excellent a school as the New South Wales Institution for the Deaf, Dumb, and Blind is quite capable of dealing with this small number, and thinks it quite unnecessary to suggest any additional provision.]

CHAPTER XII.

CHAPTER XII.

Elementary and Higher Grade Schools of Edinburgh.

[J. W. TURNER.]

A knowledge of the system of public instruction in Edinburgh was obtained by means of visits to several elementary and one Higher Grade School. The Castle Hill Board School is an elementary mixed school, attended by about 1,000 pupils. The buildings are very solid, and the light, which is from the roof, is well distributed. The district in the neighbourhood of the school is peopled by the working classes, and is considered the poorest part of the city. The pupils are not among the most regular, and while many are comfortably clad the evidences of poverty are frequent. The higher classes contain some very bright-looking intelligent boys and girls.

The standard of instruction is similar to that witnessed in ordinary Board Schools in England, and in neither country does it equal the range of our own standards. The master is ambitious, and has passed, and would still pass if he had his own way, his best boys into the secondary schools with the aid of bursaries; but, acting under the advice of his School Board, he is satisfied to prepare them for the Higher Grade Schools by means of the Merit Certificate Examination.

In some circumstances pupils with the Merit Certificate do not desire to attend the Higher Grade Schools, but remain in their own schools and go over the old work. This the head-master regrets he cannot prevent. Boys are not eager to join the ranks of the pupil-teachers, the emoluments and prospects being here, as in many other places, better in other walks of life.

The head-master favours Inspection as against Examination, but he states that the system throws immense responsibilities on the head-master. At the last inspection of this school of 1,000 pupils, the Chief Inspector, with four assistants, completed the work in three hours. Several of the schools visited have very poor playground accommodation, and it was a common sight to see hundreds of pupils engaged in active games in the public thoroughfares. The practice of playing in the streets during the periods of recreation was very noticeable, too, among some of the London Board Schools.

Higher Grade System.—The upper primary work in Edinburgh was investigated in the Higher Grade School, Bruntsfield. The buildings, which are of several stories, have a very fine appearance and are situated among pretty surroundings. The school has an infant department, a lower section in Junior and Senior Divisions, and an upper section, a Higher Grade Department. The attendance is 1,600, of whom 400 are in the Higher Grade Department. Admission to the Higher Grade School is by means of the Merit Certificate, and pupils from various Board Schools in the district attend. Education is free, and the classes are taught on the mixed system.

The head-master sees a distinct advantage in co-education. He has had evidence of its benefits in his own experience, and has noticed that the presence of girls in the class has a refining influence on the boys.

The following is the syllabus of subjects in the Higher Grade School, Bruntsfield, for 1902–3:—

ELEMENTARY DEPARTMENT.

1. Infant Division (*5 to 7 years of age*):—Hours, 9·15 to 12; 1·30 to 3·25. Reading, writing, arithmetic, musical drill, kindergarten exercises and occupations, needlework, singing, drawing, and committing poetry to memory.
2. Junior Division (*7 to 10 years of age*):—Hours, 9 to 12·30; 1·30 to 3·40. Reading, writing, arithmetic, English, geography, physical exercises, needlework, singing, drawing, committing poetry to memory, and nature knowledge.
3. Senior Division (*for pupils over 10 years of age, but without Merit Certificate*):—Hours, 9 to 12·30; 1·30 to 3·40. Reading, writing, arithmetic, English, geography, history, physical exercises (gymnasium), needlework, singing, drawing, committing poetry to memory, and nature knowledge as an introduction to science.

HIGHER-GRADE DEPARTMENT.

4. Higher-grade Department (with Special Staff: maximum class, 30 pupils), *for pupils holding Merit Certificates*:—Hours, 9 to 12; 12·30 to 3·30.

   A. History and English Literature.—The first two years devoted to the cultivation of a taste for good literature by the reading of interesting works of good style and tone. These to be studied largely at home and discussed at school. Examination to be held as to their contents, themes set upon them, different passages paraphrased, and choice passages committed to memory.

   The first two years devoted to revising previous knowledge of history, and to obtaining a clear chronological view of the succession of events in English and Scottish history as an aid to future reading.

   In the third year a definite period of history to be studied with special reference to its literature and the general state of civilisation of Europe at the time. The historical origin of present day institutions to be kept in view, a spirit of patriotism cultivated, and instruction given in the rights and duties of the citizen.

   B Geography.—A revisal of previous knowledge; the reading of maps; contour lines and their construction; elementary exercises in surveying and mapping; survey of the physical geography, flora, fauna, and historical antiquities of the district; study of commercial geography based upon the shipping and trade news of the daily papers.

C. Mathematics and Arithmetic.—Geometry and mensuration—practical and theoretical. Euclid to be preceded or accompanied by exercises in practical geometry with application to mensuration. Mensuration to be based upon the experimental determination of surfaces and volumes, and to include ultimately exercises in surveying involving applications of trigomometry. Arithmetic—the whole. Decimal system, commercial applications ; and in certain cases the arithmetic of artificers.

D. Drawing.—The course to embrace instruction in freehand drawing ; model drawing from common objects as well as from geometrical models ; and drawing to scale of plan, elevation, and section, to be followed or accompanied by simple exercises in the elements of design. In the higher stages the course may bifurcate, attention being given principally either on the one hand to the development of artistic faculty, or on the other hand to the instruction of pupils in the various forms of mechanical drawing which find application in the workshop and the drawing office.

E. Experimental Science (laboratory work) :—

First Year.—Measurement of lengths, areas, and volumes ; relative densities of solids, of sea water, fresh water, milk, and methylated spirit ; the principle of Archimedes ; expansion of solids, liquids, air—thermometer, barometer ; evaporation, solution, distillation.

Second Year.—Effects of heat on bodies ; study of change that occurs when iron rusts ; combustion of a candle ; constitution of air and water ; study of ammonia, soda, potash, lime, chalk ; carbonic acid in atmosphere—plant life, breathing.

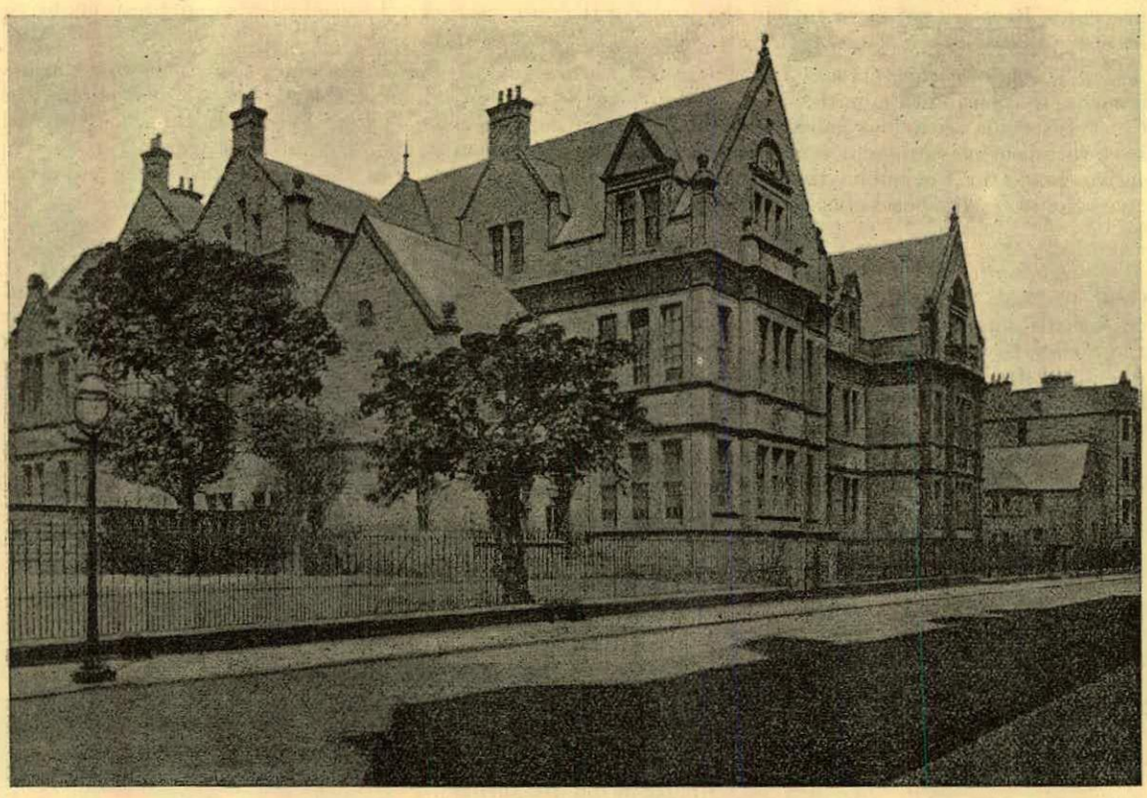
Third Year.—Boys : Detailed and systematic study of Charles's Law, Boyle's Law, latent heat, specific heat, melting points, and boiling points. Force—gravitational, magnetic, electric ; reflection and refraction of light ; the heating, chemical, and magnetic effects of the electric current.

Third Year.—Girls : Detailed and systematic study of water ; hard water, soft water, softening of water. Soap : preparation of soap. Soda : alkaline nature of, &c. Some food stuffs—Flour : separation of gluten. Starch : conversion into sugar. Fats : presence of carbon. Lean meat : presence of nitrogen. Classification of foods. Drinking water : its impurities, sources of contamination, the house supply.

F. Practical Instruction.—Boys : Woodwork. *Girls :* Needlework, dressmaking, cookery, laundry work.

G. Book-keeping, Shorthand, and Typewriting.—During the second and third years for such pupils as intend to enter upon a commercial career.

H. Modern Languages.—The result at the end of the course is intended to be that the pupils are able to read at sight simple narrative, and to understand and reproduce both orally and in writing the substance of a conversation on everyday topics or a simple description.



BRUNTSFIELD HIGHER-GRADE SCHOOL, EDINBURGH.

The advanced work in Bruntsfield is divided into a three years' course, the first of which is common to all pupils as all have started with the standard of the Merit Certificate. On the completion of the first year's work, during which the sifting process has been going on carefully under the eye of the head-master, specialisation is made in three directions :—

(*a*) Science, Mathematics, Mechanics, and Drawing—all the important subjects of the groundwork, English, History, &c., being maintained.

(*b*) Commercial Arithmetic, Modern Languages, Commercial Geography, Shorthand, Typewriting, Book-keeping, English.

(*c*) English Literature, Latin, French, German, English, Mathematics, Drawing.

The

The first group of subjects gives a bent towards industrial occupations, the second towards business pursuits, and the third supplies a training in the advanced subjects of the school course. French is chiefly taught on the natural method by teachers whose accent and experience in the language have been gained by a residence on the Continent during the long summer vacations.

During the year 1901, twenty-two candidates for pupil-teachership succeeded in passing from Class (*c*) and obtaining appointments to Board Schools. There is a growing perference in England and Scotland for the candidate pupil-teacher who remains at school and passes through the special courses of higher grade work.

The highest aim of Bruntsfield School is to obtain the Higher Grade Leaving Certificate with honours, and this cannot be secured until a pupil has passed the three years' course and reached the age of 17 years. The pupil is not asked to take all the subjects for the Leaving Certificate at one sitting. He is allowed to take one or two subjects throughout the three years of the course, and a pass in these counts towards his full Leaving Certificate.

The following are types of the scope of the Leaving Certificate and those most favoured by the School Board :—

I. (*a*) English (including History, Geography and Dictation). (*b*) Mathematics. (*c*) A modern language. (*d*) Latin.

II. (*a*) Mathematics. (*b*) English. (*c*) Science. (*d*) A Lower pass in French or Drawing, or two lower passes obtained in the course.

The examinations are general, and no text-book is set. Examples of questions set at the 1902 Examinations for the Leaving Certificates Lower Grade and Higher Grade and Honours, are appended.

Complete arrangements exist for the training of girls in dressmaking, cookery, and laundry work. The School has excellent class-rooms, a well-appointed gymnasium, a swimming bath, commodious work-shop, cookery and laundry rooms, and rooms specially designed and fitted for laboratory work.

The headmaster strongly supports any system of pupil-teachers which restricts the age of admission to about the age of 17, on the completion of the Leaving Certificate, when candidates are mentally, morally, and physically better equipped than they can possibly be at an earlier age. He also advocates the training course without teaching responsibilities, and after that a course at the Universary for those who prove worthy of such distinction. The science work did not impress one as being equal to that seen in Birmingham, Manchester, and Leeds, nor is the equipment of the science rooms to be compared to that obtaining in those large provincial towns.

The two Higher Grade Schools of Edinburgh are the finishing schools for the great majority of the working people of that city, and the school authorities are to be complimented on their establishment, on their organisation, and on their results.

The School Board acts wisely in making the Merit Certificate the passport of entrance, for it is a guarantee that the pupil has some foundation to build on. The one year's sifting process preparatory to specialisation is commendable. Both institutions doing the advanced primary work are held in high estimation by the people of the city.

LEAVING CERTIFICATE EXAMINATION PAPERS.

1902.—Lower Grade.

Time—2½ hours.

Every candidate should answer NINE questions (AND NOT MORE THAN NINE), of which FIVE must be in Section I, TWO in Section II, and TWO in Section III. Questions 1, 2, and 3 must be attempted.

Section I.—ENGLISH.

1. Write out, and punctuate, the passage for dictation.

2. Write an essay, of about two pages, on one of the following subjects :—

(*a*) The advantages of Travel.
(*b*) Epitaphs.

3. Paraphrase the following lines, so as to bring out their full meaning :—

From the black-red ether, bursting broad,
Sallies the sudden whirlwind. Straight the sands,
Commov'd around, in gathering eddies play :
Nearer and *nearer still* they darkening come ;
Till, with the general all-involving storm
Swept up, the whole continuous wilds arise ;
And by their *noon-day* fount dejected *thrown*,
Or sunk at night in sad disastrous sleep,
Beneath descending hills, the caravan
Is buried *deep*. In Cairo's crowded streets
Th' impatient merchant, wondering, waits in vain,
And Mecca saddens at the long delay.

4. Show, by an examination of any three lines of the above passage, how it differs from prose.

5. Parse the five words italicised in question 3.

Make a general analysis of the following :—

"Without being so presumptuous as to hope to emulate the rich humour, pathetic tenderness, and admirable tact which pervade the works of my accomplished friend, I felt that something might be attempted for my own country of the same kind with that which Miss Edgeworth so fortunately achieved for Ireland."

6.

6. Write ten short sentences, each containing one of the following words correctly used so as to bring out its full meaning :—affect, sumptuous, universal, athwart, collusion, wherewith, mitigate, continuous, mutual, howsoever.

7. Point out the faults in the following sentences. Say why you consider them faults, and rewrite each sentence in an improved form :—

(*a*) I am neither an ascetic in theory or practice.
(*b*) A clergyman in Perthshire wishes to purchase a small pony to do the work of a minister.
(*c*) Another bullet hit the butt of his rifle, thus saving his life.
(*d*) Entering the drawing-room the conviction came to him that he was in the dwelling of an individual of refined taste.
(*e*) Nature has denied to us the power of closing our ears which she gave us in respect of our eyes.

8. Name one famous literary work by each of the following writers, indicating the kind to which it belongs and the approximate date of its appearance :—Keats, Pope, Hooker, Dryden, Browning, Jeremy Taylor, Cowper.

Give a fuller description of any *one* of the above works.

Section II.—HISTORY.

9. Write a short account of any *one* of the following reigns or ministries, with special regard to (*a*) domestic changes, (*b*) wars :—Alfred the Great, Henry III, Edward III, Henry VIII, James I, Charles II, Walpole, George III, Palmerston.

10. Give some account of any *four* of the following, so as to show their significance and importance in British history :—Cæsar's Invasion of Britain, Celtic Christianity, Danegeld, Domesday Book, The Maid of Norway, The White Ship, The Crusades, Edward I's Invasion of Wales, The First English Parliament, the Poll-tax, Battle of Shrewsbury, Siege of Orleans, Perkin Warbeck, Act of Supremacy, Six Articles, The Smithfield Fires, Battle of Zutphen, Insurrection of Essex, Hampton Court Conference, The Policy of "Thorough," Root and Branch Bill, Instrument of Government, The Trial of the Seven Bishops, Battle of the Boyne, National Debt, The Rising of 1715, South Sea Bubble, Seven Years' War, Trial of Warren Hastings, Peninsular War, Siege of Lucknow, First Home Rule Bill.

Section III.—GEOGRAPHY.

11. Describe in detail any two routes from London to Japan, mentioning the principal places passed on the way.

12. Draw a map of Africa, showing the possessions of the principal European Powers.

13. Describe from source to mouth the course of any *four* of the navigable rivers of Great Britain.

14. Say where *ten* of the following places are situated, and mention anything for which each of the ten is remarkable :—

Cintra, Dongola, Klondyke, Nice, Formosa, Harrismith, Ferrara, Leyden, New Orleans, Missolonghi, Gothenburg, Ajaccio, Staffa, Poitiers, Ratisbon, Edgehill.

Passage for Dictation.—*Time*, 15 *minutes.*

The engagement commenced at three in the afternoon by a furious cannonade, under cover of which a battalion of the Portuguese army attacked the redoubt. They were received with the most determined resistance, but succeeded in gaining possession of the heights behind, and their General, believing that they were to be reinforced by masses of infantry, essayed one of those daring and skilful manœuvres which characterized his tactics. All who heard him issue orders took confidence from his quick and decisive intellect; all who saw him caught mettle from his extraordinary composure and unparalleled audacity.

1902.—Lower Grade.

FRENCH.

Time—2½ hours.

Composition.

This paper must not be seen by any Candidate.

To be read out once or twice by the Supervising Officer (or a Teacher) at 10·45 a.m. The substance of this story is to be reproduced by the Candidates in French from memory. No notes may be made while it is being read.

When the Christians under King Richard the First of England defeated the Saracens, the Sultan, seeing his troops fly, asked what was the number of the soldiers who were making all this slaughter. He was told that it was only King Richard and his men, and that they were all on foot. "Then," said the Sultan, "God forbid that such a noble fellow as King Richard should march on foot," and sent him a noble charger. The messenger took it to the King and said, "Sire, the Sultan sends you this charger that you may not be on foot." The King was as cunning as his enemy, and ordered one of his captains to mount the horse in order to try him. The captain obeyed; but the animal proved fiery; and the captain being unable to hold him in, he set off at full speed to the Sultan's pavilion. The Sultan expected he had got King Richard; and was not a little mortified to discover his mistake.

To secure full marks the whole of this paper should be answered.

1. Translate into English—

(*a*) Avant d'aller annoncer à sa mère son heureuse matinée, Pierre rentra un instant dans sa barque pour examiner les réparations qu'il aurait à faire à ses filets. Mais quelle ne fut pas sa surprise lorsqu'en les soulevant il aperçut à ses pieds une bourse qui renfermait plus de deux mille francs en or! Sa première pensée fut de croire que c'était un oubli de l'inconnu, et, courant sur-le-champ après lui, il l'aperçut qui causait au milieu d'un groupe d'étrangers. "Monsieur," lui dit Pierre, "voici une bourse que vous avez oubliée tout à l'heure dans ma barque." "C'est une erreur, je n'ai rien oublié dans votre barque: mais cette bourse, fût-elle à moi, mon ami, je vous dirais de la garder pour prix de votre probité!"

"Mais au moins, Monsieur, vous me direz votre nom, afin que je sache quel est mon bienfaiteur." Pour toute réponse, l'homme à qui il s'adressait se dégagea de la foule en détachant l'agrafe[1] de son manteau, qui tomba dans les mains du pauvre Pierre de plus en plus surpris. Le pêcheur se décida enfin à retourner au logis.

[1] agrafe=hook.

(*b*) *Le Front.*

Max se frottait le front : "Quel est ce blanchissage[1] ?"
Lui demanda sa sœur : "As-tu donc le front noir ?"
—"J'étais un peu méchant ; maman pourrait le voir.
C'est écrit sur mon front quand je ne suis pas sage."

Et Max frotte encore davantage.
Il croit qu'en essuyant les marques s'en iront.
Pas du tout : son front devient rouge,
Et sa mère, en rentrant, dit, avant qu'il ne bouge :
"Max vient d'être méchant ; c'est écrit sur son front !"

L. Ratisbonne.

[1] blanchissage=washing.

(*c*)

(c) "La médecine est à la mode parmi nous; elle doit l'être. C'est l'amusement des gens oisifs et désœuvrés, qui, ne sachant que faire de leur temps, le passent à se conserver. S'ils avaient eu le malheur de naître immortels, ils seraient les plus misérables des êtres. Une vie qu'ils n'auraient jamais peur de perdre ne serait pour eux d'aucun prix. Il faut à ces gens-là des médecins qui les menacent pour les flatter, et qui leur donnent chaque jour le seul plaisir dont ils soient susceptibles, celui de n'être pas morts."

J. J. Rousseau.

2. Write from memory a French version of the passage read out.

3. Translate into French—

At the end of fifteen or sixteen years, however, it happened one day that the young princess, running about the castle and mounting from room to room, reached a turret, in a little gallery of which she saw a good old woman. "What are you doing there, my good woman?" said the princess. "I am spinning[1], my pretty child," replied the old woman, who did not know her. "Oh, how pretty that is!" said the princess. "How do you do it? What is that plaything in your left hand? Lend it me, that I may try if I can do it as well." She had scarcely taken the spindle[2], when she wounded her hand and fainted[3] away.

[1] Spin=filer. [2] The spindle=le fuseau. [3] Faint away=s'évanouir.

4. Write in the plural:—*nez, trou, genou, sou, feu* (noun), *bal, cheval, celui, ce, lequel.* Give the masculine of—*fraîche, favorite, impératrice, causeuse, active, gentille, jeune.*

5. Give the present and past participles of *avoir, coudre, mourir, vivre*; the 3rd person singular and the 2nd person plural of the present indicative of *faire, vouloir*; and of the present subjunctive of *venir, punir*; the 3rd person singular of the future indicative of *voir, aller*; the first person plural of the imperfect subjunctive of *moudre, vaincre*; the infinitive of *lu, nu, pu, su.*

6. Translate into French:—I am speaking to him. Is that your book? Give it to me, if you please. No! I cannot give it to you because I have promised it to her.

7. Give the adverbs corresponding to the adjectives *bon, petit, mauvais*, with the comparatives of both the adjectives and adverbs.

Write in French words:—William the First, Edward the Seventh, 26th June, 1902.

8. Translate into French:—I live in Scotland. There are fewer inhabitants in all Scotland than in London. The room in which I am sitting is forty feet long by thirty wide. My eldest brother is a foot taller than I. It rains more in spring than in winter.

Arithmetic.

1902.—Lower Grade.

Time—1½ hour.

All the work must be shown, and such explanation added as is required to indicate the methods adopted. Additional marks will be given for neatness, arrangement, and style.

1. Multiply 54098 by 6709, and give the meaning of each line of your work.

2. Amongst how many persons can £249 be divided, if each receive £3 13s. 2½d, and how much will remain over?

3. A piece of material weiging 50 kilogrammes costs £8 6s. 8d.: What is the value of a portion which weighs 6 kilogrammes 350 grammes?

4. If a dollar be worth 4s. 2d., and a rupee 1s. 3½d., how many rupees are 186 dollars worth?

5. Simplify—

(1) $$\frac{\frac{3}{4}+\frac{7}{12}+\left(\frac{7}{15}\text{ of }1\frac{1}{7}\right)}{\frac{5}{6}+\frac{9}{10}-\left(\frac{2}{3}\text{ of }\frac{13}{20}\right)}$$

(2) $$\frac{1521531}{4148925}$$

6. In the following piece of work, state what is done in each step, showing the reason for it:—

$$\frac{7}{10}+\frac{4}{15}+\frac{5}{6}=\frac{21}{30}+\frac{8}{30}+\frac{25}{30}=\frac{54}{30}=\frac{9}{5}=1\frac{4}{5}$$

7. If ·087 of a ton cost £4·71, find the value of 3·4 cwt., expressing the answer in pounds, shillings, and pence to the nearest penny.

8. A debtor owes his three creditors £1,200, £900, and £300 respectively; if his assets be £850, what would each creditor receive?

9. If a cistern measure 3·75 metres in length, 2·6 metres in breadth, ·92 metres in height, find how many litres it will hold; a litre being a cubic decimetre.

10. Five per cent. of an army are killed in battle, and fifteen per cent. of the survivors die of wounds and disease, leaving 18,088 men alive: What was the original number of men in the army?

Algebra.

1902.—Lower Grade.

Time—1½ hour.

All the work must be shown, and such explanation added as is required to indicate the methods adopted. Additional marks will be given for neatness, arrangement, and style.

1. If $a=1$, $b=2$, $c=3$, $d=0$, find the value of—

(1) $a(b-c)+b(c-d)-c(d-a)-d(a-b)$;

(2) $\sqrt{(b+c)^2-(a+b)^2}-\sqrt{(a+b)(c-d)}$.

2. State and prove the rule of signs in multiplication.

Simplify $(p-q)(r-s)-(p-r)(q-s)+(p-s)(q-r)$.

3. Divide $x^4-56x+15$ by x^2-4x+1, and verify the result when x is made equal to 10.

4. Simplify—

$$(1)\ \frac{x-\frac{2}{x}-1}{x-\frac{6}{x}+1};$$

$$(2)\ \frac{\frac{1}{a}+\frac{1}{b}}{\frac{1}{a}-\frac{1}{c}}\times\frac{\frac{1}{a+b}-\frac{1}{c}}{\frac{1}{a-c}+\frac{1}{b}}.$$

5. Resolve into factors—

(1) $a^2+a-110$;

(2) $4x(x-1)-3$;

(3) $x^2+ax+2ay-4y^2$.

6. Solve the equations—

(1) $(x-1)(x+1)=(x-3)(x+12)$;

(2) $a(x-b)-b(a+b)=a(a-c)-b(x+c)$;

(3) $(x-23)(x+23)=(x-22)(x+22)-(x-2)(x+2)$.

7. Find the highest common factor of $2x^3+x^2-4x-3$ and $2x^3+x^2-9$; and determine the value of x which will make both expressions equal to zero.

8. A man buys $\frac{2}{3}$ of an estate at £12 per acre, and the remainder at £20 per acre, and, by selling the whole at £18 per acre, he makes a profit of £500; find the size of the estate.

9. A can do a piece of work in m hours, B can do the same in n hours. If A work for p hours, how long will B take to finish the work?

10. Solve the equations—

(1) $\begin{cases}\frac{1}{3}x-\frac{1}{4}y=1,\\ \frac{1}{2}x+\frac{1}{3}y=2;\end{cases}$

(2) $x^2+(a+c)x+2ac=2a^2$;

(3) $\sqrt{\frac{x-2}{x+1}}+\sqrt{\frac{x+1}{x-2}}=\frac{5}{2}$:

verifying your answers in each case.

Geometry.

1902.—Lower Grade.

Time—2 Hours.

All ordinary symbols and contractions are allowed. All the steps of the proofs must be given, and the previous propositions &c., on which they depend, should be indicated. It is not necessary to write out the general enunciations of propositions, but the particular enunciations should be written out, except when they are given as part of the question. Additional marks will be given for neatness, good style, and accurately drawn figures.

1. Bisect a given straight line.

   I wish to bisect PQ, but the hinge of my compasses has become fixed so that the distances between the points is less than half but more than a quarter of PQ; find a construction by which I can bisect PQ.

2. Prove that the greater angle of every triangle has the greater side opposite to it.

   LMN is an isosceles triangle, L being the vertex; if P be a point in MN, prove that LP is less than LM.

3. Prove that the sum of the interior angles of any rectilineal figure is equal to twice as many right angles as the figure has sides, dimished by four right angles.

   ABC is an equilateral triangle in which AD is drawn perpendicular to BC meeting it in D; if DA be produced to E, show that BAE is equal to the angle of an equiangular polygon of twelve sides.

4. Describe a parallelogram which shall be equal to a given triangle, and have one of its angles equal to a given angle.

   Describe a parallelogram which shall be equal to a given triangle, and have one of its sides equal to half the base of the triangle, and another side equal to a given straight line.

   Explain whether this is always possible.

5. If a straight line be divided into any two parts, prove that the square on the whole line, together with the square on one part, is equal to twice the rectangle contained by the whole line and that part, together with the square on the other part.

   Show that this proposition corresponds to a well-known algebraical formula.

6. Prove that if two circles meet in a point on one side of the straight line joining their centres, they will also meet in a second point on the other side of the line, but in no other point.

7. Prove that the angle at the centre of a circle is double the angle at the circumference which stands on the same arc.

8. Upon a given straight line describe a segment of a circle containing an angle of half a right angle.

Arithmetic.

1902.—Higher Grade.

Time—1½ Hours.

All the work must be shown, and such explanation added as is required to indicate the methods adopted. Additional marks will be given for neatness, arrangement, and style.

1. Find the value of a cubic foot of gold which weighs 1,210 lb. avoirdupois, if a sovereign be worth 113 grains of pure gold, and 1 lb. avoirdupois contain 7,000 grains.

2. A train 156 ft. long is going at a speed of 60 miles per hour, how long will it take to cross completely a bridge 295 ft. long?

3. Simplify—

$$(1)\ \frac{1}{\frac{1}{2}+\frac{1}{\frac{1}{3}+\frac{1}{\frac{1}{2}+\frac{1}{3}}}};$$

$$(2)\ \frac{\sqrt{\cdot81}\times\sqrt[3]{1\cdot331}}{\sqrt{\cdot0484}\times\sqrt[3]{\cdot027}};$$

(3) ·0011 cubic metre + ·11 decimetre + 11 cubic centimetres.

4.

4. Define the present worth of a sum due at a future date, and explain the difference between true discount and banker's discount.

   Find the difference between the true discount and the banker's discount on £520 due a year hence at 4 per cent.

5. Multiply 47·23956 by 18·7878, using the contracted method so as to obtain the result correct to 2 decimal places without superfluous work.

6. Find the cost of excavating a cutting 1 mile long, 13½ feet broad, and 4 feet deep, at the rate of 6d. per cubic yard for the first foot in depth, the rate increasing 1d. per cubic yard for each foot in depth.

7. A man sells £10,000 in a 2¾ per cent. stock at 95, and buys £8,500 in a 4 per cent. stock at 106 (brokerage included in each price). If he deposit the rest of the money in the bank at 2½ per cent., find the change in his income.

8. If the pressure of air in a diving-bell be 68 lb. 1 oz. on a square inch, express that pressure in grammes on a square centimetre, taking an inch as $2\frac{7}{10}$ centimetres, and 10 lb. as $4\frac{1}{10}$ kilogrammes

9. A certain sum of money at a certain rate of compound interest amounts in 3 years to £703·04, and in 4 years to £731·1616; find the rate and the sum.

Algebra.

1902.—Higher Grade.

Time—1½ Hours.

All the work must be shown, and such explanation added as is required to indicate the methods adopted. Additional marks will be given for neatness, arrangement, and style.

1. Expand $(1+x+x^2+x^3)^3$.

   Prove the identity—
   $(b+c-a)^2(b-c)+(c+a-b)^2(c-a)+(a+b-c)^2(a-b)+4(b-c)(c-a)(a-b)\equiv 0$.

2. Prove that $a^m \times a^n = a^{m+n}$, when m and n are positive integers.
   Explain how this theorem is used to obtain a meaning for a negative power of a number as, for example x^{-4}.

3. Solve the equations :—

$$(1)\quad \frac{x^2-x+1}{x^2+2x+5} = \frac{x^2-x-1}{x^2+2x+3};$$

$$(2)\quad \begin{cases} \dfrac{x+2}{a} = \dfrac{y+2}{b}, \\ (a-b)^2 + abxy = 0. \end{cases}$$

4. If $y = x - 1$, and $x^3+2x^2+3x+4 = Ay^3+By^2+Cy+D$ for all values of x, find the values of A, B, C, D.

5. Prove that a quadratic equation cannot have more than two different roots.

   If α, β the roots of $x^2-px+q=0$, and $2\alpha-\beta$, $2\beta-\alpha$ be the roots of $x^2-p'x+q'=0$; express p', q' in terms of p, q.

6. Solve the equations :—

$$(1)\quad x^2+x+\frac{12}{x^2+x}=8;$$

$$(2)\quad \begin{cases} x^2-xy=6, \\ 5xy+4y^2=19. \end{cases}$$

7. When are quantities in harmonic progression?

   Find two numbers whose geometric and harmonic means are 5 and 3 respectively.

8. If $\dfrac{by+cx}{b^2+c^2} = \dfrac{cz+ax}{c^2+a^2} = \dfrac{ax+by}{a^2+b^2}$, prove that $\dfrac{x}{a} = \dfrac{y}{b} = \dfrac{z}{c}$

9. Lengths of three carpets at 3s. 6d., 3s. 9d., and 4s. 6d. per yard were ordered, the sum of the lenghts being 114 yards, and the total cost £22. By mistake the lengths were altered in rotation so that the length cut of the first carpet was that ordered for the second, of the second that ordered for the third, and of the third that ordered for the first. If the total cost be now the same as before, find how many yards of each carpet were ordered.

Geometry.

1902.—Higher Grade.

Time—2 Hours.

All ordinary symbols and contractions are allowed. All the steps of the proofs must be given, and the previous propositions, &c., on which they depend, should be indicated. It is not necessary to write out the general enunciations of propositions, but the particular enunciations should be written out except when they are given as part of the question. Additional marks will be given for neatness, good style, and accurately drawn figures.

1. Define a right angle, parallel straight lines, a rectangle, a square.

   If the square described on one side of a triangle be equal to the sum of the squares on the other two sides, prove that the angle contained by these sides is a right angle.

   If the square described on one side of a triangle be greater than the square described on the other two sides, prove that the angle contained by these sides is greater than a right angle.

2. If a straight line be divided equally and unequally, prove that the sum of the squares on the unequal parts is equal to twice the square on half the line together with twice the square on the line between the points of section.

   A straight line 46 inches long is divided into two parts, the sum of the squares on which is 1,220 square inches, use the preceding theorem to find the length of each part.

3. If the opposite angles of a quadrilateral be supplementary, prove that a circle can be described through its vertices.

   Two chords of a circle intersect at right angles, and a quadrilateral is formed by drawing tangents at the extremities of the chords; prove that a circle can be described through its vertices.

4. Inscribe a pentagon in a given circle.

   A star is formed by producing the alternate sides of a regular pentagon, prove that the points of the star form a regular pentagon.

   Show also that the side of the larger pentagon is equal to the sum of a side and a diagonal of the smaller pentagon.

5. Equal triangles, which have one angle of the one equal to one angle of the other, have their sides about the equal angles reciprocally proportional.

   $ABCD$ is a trapezium in which AB is parallel to and greater than DC, BD meets AC in E, and DF is drawn from D parallel to CB, meeting AC in F; prove that EF is a third proportional to EA and EC.

6,

6. If from any angle of a triangle a straight line be drawn perpendicular to the base, prove that the rectangle contained by the sides of the triangle is equal to the rectangle contained by the perpendicular and the diameter of the circle described about the triangle.
7. If three planes meet each other, prove from first principles that the lines of intersection are either concurrent or parallel.
8. $ABCD$ is a tetrahedron, each of whose edges touches a given sphere without being produced, prove that
$$AB+CD=AC+BD=AD+BC.$$

Elementary Trigonometry and Logarithms.

1902.—Higher Grade.

Time—1½ Hours.

All ordinary symbols and contractions are allowed. Additional marks will be given for neatness, good style, and accurately drawn figures.

1. Explain the relation between the circular measure of angle and its measure in degrees.

   The diameter of the moon subtends an angle of 31 minutes at the surface of the earth; taking the distance of the moon as 238,941 miles, and a radian as 57° 18′, find the length of the diameter of the moon.

2. Give a geometrical proof, applicable to all cases, of the formula
$$\cos(A+90)=-\sin A.$$
   Write down the corresponding formula for $\sin(A+90°)$, and *deduce* the values of $\cos(A+180°)$, $\sin(A+180°)$.

3. Prove the identities—
$$(1)\ \sin A+\sin B=2\sin\frac{A+B}{2}.\cos\frac{A-B}{2};$$
$$(2)\ \sin 3A=4\sin A\sin(60°+A)\sin(60°-A).$$

4. Obtain an expression including all angles which have the same cosine as a given angle.

   Write down the expressions for all angles which have (a) the same sine, (b) the same tangent as a given angle. Find all the solutions of the equation
$$\sin^2\theta\cos\theta=\sin\theta\cos^2\theta.$$

5. If A, B, C be the angles of a triangle, prove
$$(1)\ \cos A+\cos B\cos C=\sin B\sin C.$$
$$(2)\ \tan A+\tan B+\tan C=\tan A\tan B\tan C.$$

6. Explain how a table of logarithms may be employed to save labour (1) in multiplication, (2) in extraction of roots.

   Make a double use of your table of logarithms to find x, when $(1{\cdot}045)^x=1{\cdot}5$.

7. In the triangle ABC, $A=40°\ 25'$, $a=84$, $b=75$. Show that in this case B has only one possible value, and find that value.
8. The base of a circular tower subtends an angle 2α at a point A in its plane; at a point B in the same plane but 100 feet nearer the tower, the angle subtended is 2β; obtain an expression for the radius of the tower in terms of $\sin\alpha$ and $\sin\beta$, and calculate its value when $\sin\alpha=\cdot1$, $\sin\beta=\cdot125$.

Algebra.

1902.—Honours Grade.

Time—1½ Hours.

All the work must be shown, and such explanation added as is required to indicate the methods adopted. Additional marks will be given for neatness, arrangement, and style. Candidates may try six questions, namely, Nos. 1, 2, 3, and one of the alternatives in each of Nos. 4, 5, 6.

1. Prove that if two rational integral functions of x of the nth degree be equal for more than n values of x, they will be equal for all values of x.

   By applying this theorem, resolve into partial fractions
$$\frac{x^2+px+q}{(x-a)(x-b)(x-c)}.$$

2. Find the number of selections of n things taken r together. If C_r be this number, prove from first principles that
$$(1)\ C_r=C_{n-r},$$
$$(2)\ C_1+C_2+\ \ldots\ +C_n=2^n-1.$$

3. Prove the Binomial Theorem for a positive integral index.

   If
$$(1+x)^n=a_0+a_1x+a_2x^2+\ \ldots\ +a_nx^n,$$
   prove that $a_0^2+a_1^2+\ \ldots\ +a_n^2=\dfrac{\lfloor 2n}{(\lfloor n)^2}$.

   Show that if
$$n=mr\cdot\ 1,\ a_r=(m-1)a_{r-1}.$$

Alternative Questions.

4*a*. If
$$a(y+z)=x,\quad b(z+x)=y,\quad c(x+y)=z,$$
prove that
$$(1)\ 2abc+bc+ca+ab=1,$$
$$(2)\ \frac{x^2}{a(1-bc)}=\frac{y^2}{b(1-ca)}=\frac{z^2}{c(1-ab)}.$$
If
$$\frac{p(q+r-p)}{l}=\frac{q(r+p-q)}{m}=\frac{r(p+q-r)}{n},$$
prove that
$$\frac{l(m+n-l}{p}=\frac{m(n+l-m)}{q}=\frac{n(l+m-n)}{r}.$$

or

4*b*. Solve the equations:
$$(1)\ \sqrt{x-\frac{1}{x}}+\sqrt{1-\frac{1}{x}}=x;$$
$$(2)\ \frac{1}{5}(x^4+4y^4)=(x+y)^2+y^2=20;$$
$$(3)\ (b-c)(x-a)^4+(c-a)(x-b)^4+(a-b)(x-c)^4=0.$$

5*a*.

5*a*. If $f(x)$ denote

$$1+x+\frac{x^2}{1\cdot 2}+\frac{x^3}{1\cdot 2\cdot 3}+\ldots$$

prove that $f(x)$ is convergent for all values of x.

Prove that when x and y are real quantities $f(x)\times f(y)=f(x+y)$, and deduce that $f(x)=\{f(1)\}^x$.

or

5*b*. Define the arithmetic mean and the geometric mean of any number of positive quantities, and show that the former cannot be less than the latter.

If a, b, c be three positive unequal real quantities, prove that

$$(1)\ \frac{b}{c}+\frac{c}{a}+\frac{a}{b}>3,$$

$$(2)\ (a+b+c)^3-a^3-b^3-c^3>24abc.$$

6*a*. Prove that in any scale of notation of which the radix is r, if the sum of the digits of an integral number be divisible by $(r-1)$, the number itself is so divisible.

A number is formed in the scale of r by beginning with unity, and writing down the first n digits in order. The number is multiplied by $r-2$ and n is added. Prove that the result is the number obtained by writing the last n digits beginning with the last.

or

6*b*. Show that the expression $u_n=n(n+1)(n+2)$ can be thrown into the form $f(n)-f(n-1)$, and the expression an^3+bn^2+cn+d can be similarly expressed.

Hence find the sum of n terms of the series whose rth term is $4r^3+3r^2+r$.

Geometry.

1902.—Honours Grade.

Time—2 Hours.

All ordinary symbols and constructions are allowed. All the steps of the proofs must be given, and the previous propositions, &c., on which they depend, should be indicated. Additional marks will be given for neatness, good style, and accurately drawn figures. Candidates may attempt seven questions—namely, Nos. 1, 2, 3, 4, and one of the alternatives in each of Nos. 5, 6, 7.

1. If the opposite angles of a quadrilateral be supplementary, a circle can be described through its vertices.

Two circles have a common chord AB, and a double chord CBD; two other chords CF, DE intersect in G; prove that A, E, G, F are concyclic points.

2. ABC is a triangle whose base BC is divided into D, so that

$$mBD=nDC;$$

show that

$$mAB^2+nAC^2=(m+n)\,AD\,.\,AH,$$

where H is the point in which AD meets the circumscribing circle.

Deduce that, when D is the mid point of BC,

$$AB^2+AC^2=2\,(AD^2+BD^2).$$

3. The sides about the equal angles of equiangular triangles are proportional, those sides being homologous which are opposite to equal angles.

BC, BD are two intersecting straight lines, and A is a point in this plane, such that the angle ABC is less than the angle CBD; find two points in BC equally distant from A and BD.

4. Define a Harmonic Range, and show that if C and D are harmonic conjugates with respect to A and B, then A and B are harmonic conjugates with respect to C and D.

A circle is described touching a straight line AP in C, and having its diameter a harmonic mean between AC and CB; prove that it touches the circle on AB as diameter.

Alternative Questions.

5*a*. Construct a triangle having given the centre of the circumscribing circle, the centre of the nine-point circle, and the mid point of one of the sides.

or

5*b*. Explain the principle of inversion, and prove that the inverse of a circle is, in general, a circle.

Prove that a system of non-intersecting coaxal circles inverts into a system of concentric circles when either of the limiting points of the coaxal system is taken as the centre of inversion.

6*a*. If any transversal meet the sides BC, CA, AB of a triangle in D, E, F respectively, then

$$AF\,.\,BD\,.\,CE=BF\,.\,CD\,.\,AE.$$

Prove that the tangents drawn to a circle at the vertices of an inscribed triangle meet the opposite sides of the triangle in three collinear points.

or

6*b*. Explain what is meant by the resultant, or sum, of two directed straight lines AB, AC; and show that in this sense the resultant of any number of directed straight lines is independent of the order in which they are taken.

7*a*. Define the polar of a given point with regard to a given circle.

A is a point with a circle, and AB is drawn from A perpendicular to the polar of A, meeting it in B; if PAQ be any chord through A show that

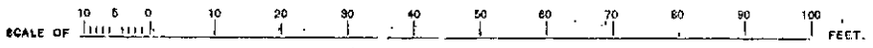
$$PB:BQ=PA:AQ.$$

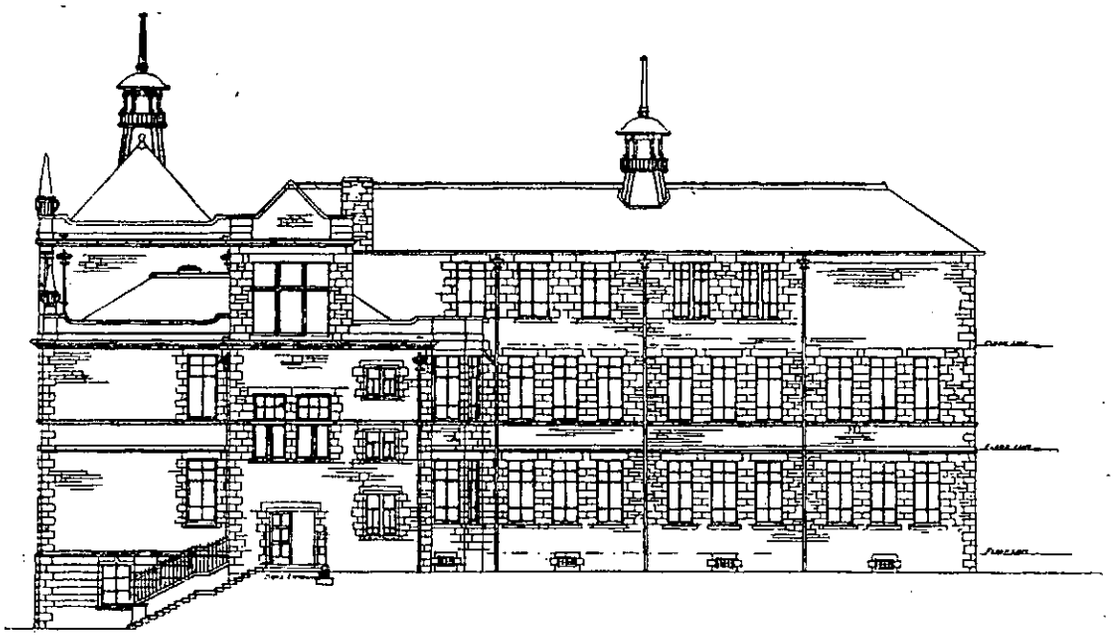
or

7*b*. $ABCD$ is a tetrahedron in which AB is at right angles to CD, and AC is at right angles to BD; prove that AD is at right angles to BC.

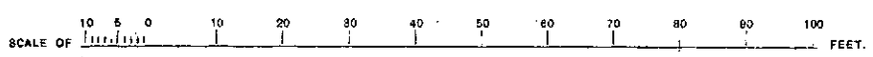
Show that if each edge of a tetrahedron be at right angles to the opposite edge, the mid points of all the edges will lie on a sphere.

PROVANSIDE SCHOOL, GLASGOW.—WEST ELEVATION.





PROVANSIDE SCHOOL, GLASGOW.—EAST ELEVATION.



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Trigonometry and Logarithms.

1902.—Honours Grade.

Time—1½ Hours.

All ordinary symbols and contractions are allowed. Additional marks will be given for neatness, good style, and accurately drawn figures. Candidates may try six questions—namely, Nos. 1, 2, 3, and one of the alternatives in each of Nos. 4, 5, 6.

1. Define the tangent of an angle of any magnitude.

Draw the graphs corresponding to the equations

$$y = \tan x, \text{ and } y = \cos x,$$

and from your diagram indicate in which quadrant the solution of the equation, $\tan x = \cos x$, is to be found.

2. If, in a triangle ABC, the sides b, c, and the angle A be known, and a be expressed in the form $(b-c)\sec\phi$, find $\tan\phi$ in terms of b, c, A, and state the advantage of this formula.

If a be also expressed in the form $(b+c)\sin\psi$, prove that

$$(b-c)^2\tan^2\phi + (b+c)^2\cos^2\psi = 4bc.$$

3. Find the trigonometrical ratios of 30°.

From the top of a cliff 150 feet high, the angle of depression of a boat due north of the observer is 30°, that of a boat in a direction 60° east of north is 45°; find approximately the distance between the boats.

Alternative Questions.

4*a*. Prove geometrically that

$$\cos A + \cos B = 2\cos\frac{A+B}{2}\cos\frac{A-B}{2}.$$

Prove that

$$\begin{aligned}&\cos 2(A+B+C) + \cos(2A+B+C) + \cos(A+2B+C)\\ &+ \cos(A+B+2C) + \cos(B+C) + \cos(C+A) + \cos(A+B\\ &= 8\cos(A+B+C)\cos\frac{B+C}{2}\cos\frac{C+A}{2}\cos\frac{A+B}{2} - 1.\end{aligned}$$

or

4*b*. In any triangle ABC prove that

$$2\left(1+\sin\frac{A}{2}\right)\left(1+\sin\frac{B}{2}\right)\left(1+\sin\frac{C}{2}\right) = \left(\cos\frac{A}{2}+\cos\frac{B}{2}+\cos\frac{C}{2}\right)^2.$$

5*a*. If $OABCD\ldots$ be a regular heptagon in which $OB=b$, $OC=c$, prove that $b(b+c)^2 = c^2(2b+c)$.

or

5*b*. Define an inverse function.

Prove that

$$\tan^{-1}\frac{a+b}{1-ab} + \tan^{-1}\frac{b+c}{1-bc} + \tan^{-1}\frac{c+a}{1-ca} = 2\tan^{-1}\frac{a+b+c-a}{1-bc-ca-ab}.$$

6*a*. Assuming De Moivre's theorem, prove that

$$\cos\theta = 1 - \frac{\theta^2}{\lfloor 2} + \frac{\theta^4}{\lfloor 4} - \ldots; \text{ and } \sin\theta = \theta - \frac{\theta^3}{\lfloor 3} + \frac{\theta^5}{\lfloor 5} - \ldots$$

AT is a tangent to a circle at A; and P is a point on the circumference, such that the arc $AP = AT$, T and P being on the same side of the radius OA. If TP meet AO produced in X, show that, when T moves up to A, the ultimate value of AX is $3AO$.

or

6*b*. Sum the series

$$\tan^2 x\tan 2x + \frac{1}{2}\tan^2 2x\tan 4x + \frac{1}{2^2}\tan^2 4x\tan 8x + \ldots \text{ to } n \text{ terms.}$$

Prove that, if $a = \frac{2\pi}{n}$,

$$\begin{aligned}&\cos\theta + \cos(\theta+a) + \cos(\theta+2a) + \ldots + \cos(\theta+\overline{n-1}a)\\ &= \sin\theta + \sin(\theta+a) + \sin(\theta+2a) + \ldots + \sin(\theta+\overline{n-1}a) = 0;\end{aligned}$$

and give a geometrical illustration.

CERTIFICATE OF MERIT.

A certificate of merit[1] will be granted to any scholar over 12 years of age who, being of good character and conduct, has been duly instructed in the subjects of Article 19 A, 4, 5, and 7,[2] and shows thorough proficiency in the three elementary subjects of reading, writing, and arithmetic.

To satisfy the conditions of this article, candidates must be able—

(*a*) To read clearly and fluently, with good pronunciation, a passage of moderate difficulty chosen from a modern author, a periodical, or a newspaper.

(*b*) To write, in a legible and regular handwriting, and with correct spelling, a letter, a description, or the summary of a narrative; or to reproduce orally or in writing the substance of the passage read.

(*c*) To understand the connection of words, clauses, and sentences in the passage read, and to have some knowledge of the composition and derivation of English words.

(*d*) To perform arithmetical calculations[3], both mentally and on paper, with facility and correctness, and to show a power of applying the rules of arithmetic in a way likely to prove useful in the common affairs of life.

(*e*) To satisfy the Inspector that they have been duly instructed in the subjects of Article 19 A, 7.

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[1] The same pupil may not, unless in exceptional cases expressly approved by the Inspector, be presented for examination for the Merit Certificate more than once within six months.

[2] Article 19 A 4—Drill, needlework, drawing, singing.
19 A 5—Reading, writing, arithmetic.
19 A 7—Nature knowledge, English, geography, history.

[3] Candidates will be expected to have a knowledge of the four simple rules (including vulgar fractions), with their application to calculations of money, weights, and measures; of proportion (simple and compound), and its application to interest and profit and loss; of decimal fractions treated *concretely*, as, *e g.*, in the metric system of weights and measures, and in the system of decimal coinage. A knowledge of the following English weights and measures only will be expected:—Weight (avoirdupois), length, area, capacity, time, in addition to some knowledge of the metric system.

CHAPTER XIII.

CHAPTER XIII.

The Elementary and Grammar Schools of the United States.

[J. W. TURNER.]

Introduction.—The American system of primary instruction was investigated in the towns and cities of Washington, Philadelphia, New York, Springfield (Massachusetts), Boston, Chicago, Detroit, San Francisco.

Buildings.—It has been said by some writers on education that America possesses the finest school buildings in the world, but, while admitting that its schools are beautifully constructed, and that the most careful attention has been given to all hygienic conditions—lighting, heating, ventilation, sanitary conveniences—they are not equal, either from the architectural or hygienic standpoint, to the schools of Switzerland. The schools generally are fine brick structures usually of several stories, the lower rooms being used by the younger children and the upper by the older pupils. In the design of the buildings there appears to be no fixed plan of construction. Each State has its own system of education, and its own ideas of school architecture, but even in the same State and city there is little uniformity in the character of the structures. The schools of San Francisco are an exception to this statement, for in that city one can see a great resemblance between one school building and another, both in external appearance and in the materials of construction. The school buildings in San Francisco are generally two stories in height, and are constructed of wood. The Commissioner was in some of these wooden buildings during the coldest and wettest months, and found them very comfortable. In one important feature of school construction the school architects of America are in complete accord, the principle of single class-rooms being universal in all large towns and cities. In no school visited was there one long room for teaching several classes, or a long room divided into teaching compartments by means of glass partitions. Each class-room is a distinct part of the building, and is constructed to hold about 50 pupils. In a few schools large rooms do exist, but not for purposes of class teaching. They are used as rooms for assembling the pupils at the commencement of school, and on such occasions as music rehearsals. In one of the finest schools in New York City the top floor is one great room, provided with movable gymnastic appliances, and large enough to permit of the winter game of basket ball which among American children is played indoors when the weather makes it impracticable as an outdoor pastime.

Playground accommodation in the majority of the large city schools is exceedingly limited, and very few of the schools are provided with a room for gymnastic exercises.

A stranger in America has very little difficulty in determining the position of a public school. In many of the towns the national flag flies from the highest pinnacle on the school building.

Furniture and Hygiene.—The long desk, in no sense hygienic, has been abolished and the class-rooms are supplied with the single or dual desk. The size of the class-room permits of an arrangement of the desks by which the teacher is able to give considerable individual attention. A dado or wainscoting surrounds the walls to a height of about four feet, and above that the rest of the wall is usually coloured with a grey or light brown tint. In some schools the tint on the walls is a cheerful red, and the window blinds are of the same colour; in other schools the window blinds are light green in colour. The hats and cloaks are never kept in the living rooms, provision being made for them in lobbies conveniently placed outside.

The best arrangements for the care of pupils' articles of clothing are seen in the Swiss schools, where cabinets specially constructed in roomy corridors are provided for the purpose.

In America the walls are panelled in part with rectangular slabs of slate which are used as blackboards.

In the best equipped schools in Europe, ground glass, which takes a splendid surface for coloured chalks, is much preferred to the ordinary blackboard.

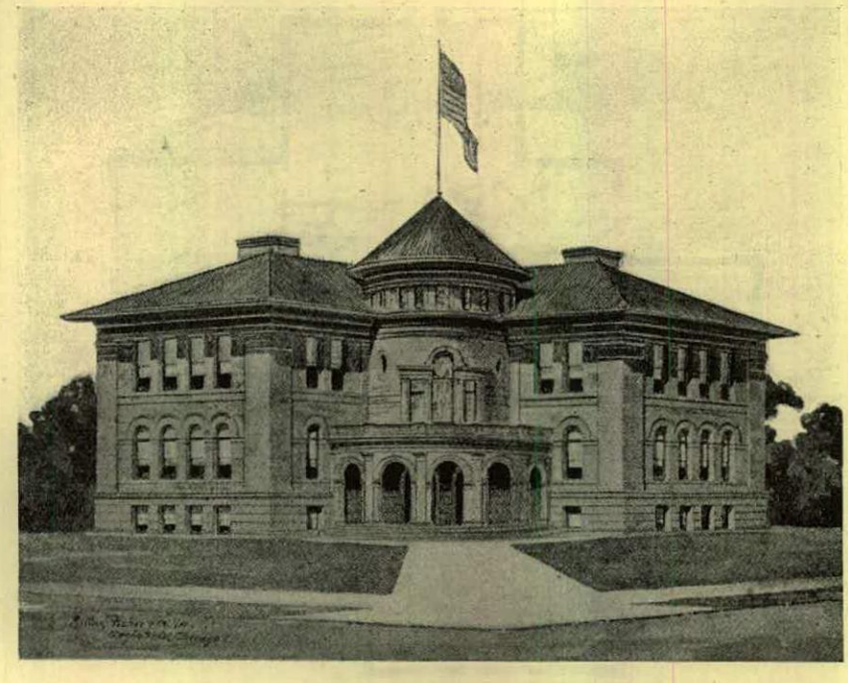
Medical inspection in America is very frequent in the large city schools. The medical officer seen examining the junior classes gives much attention to the teeth and eyes, and makes minute inspection of the pupils' throats.

In many of the class-rooms are small libraries containing a few choice books of biography and adventure, which the pupils are privileged to read if they finish their work before the time allowed by the teacher.

Small but serviceable museums, the work often of the pupils, are common in the schools, and the evidences of Nature study are numerous.

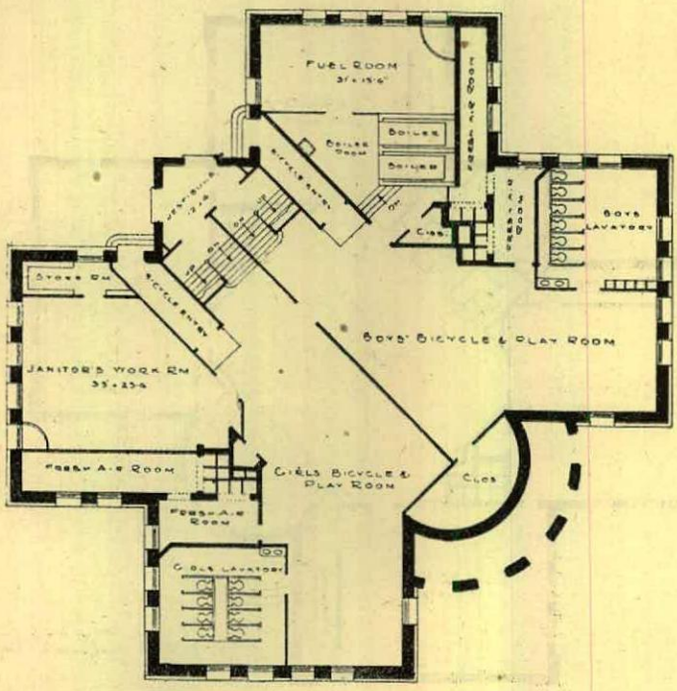
School maps and diagrams are not seen to any great extent, but the walls are frequently beautified with first-class pictures.

Several American publishing firms in the chief cities—for example, The Prang Educational Company, Elson & Co., make a special business of preparing pictures of the most valuable kind for school purposes, at the most reasonable rates. The Prang Educational Co., whose rooms in Chicago were visited, says, in one of its prospectuses, "The public-school-room is fast being transformed. Pictures, casts, and

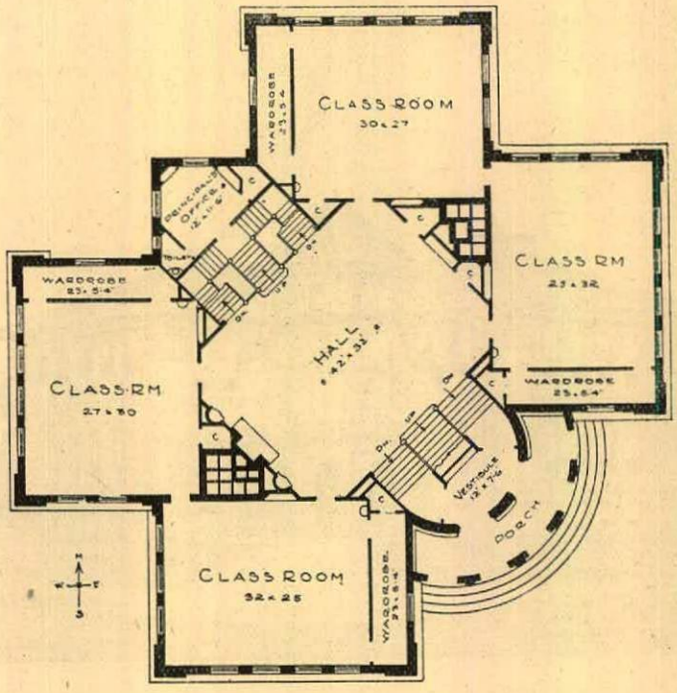


WASHINGTON SCHOOL, SOUTH EVANSTON.

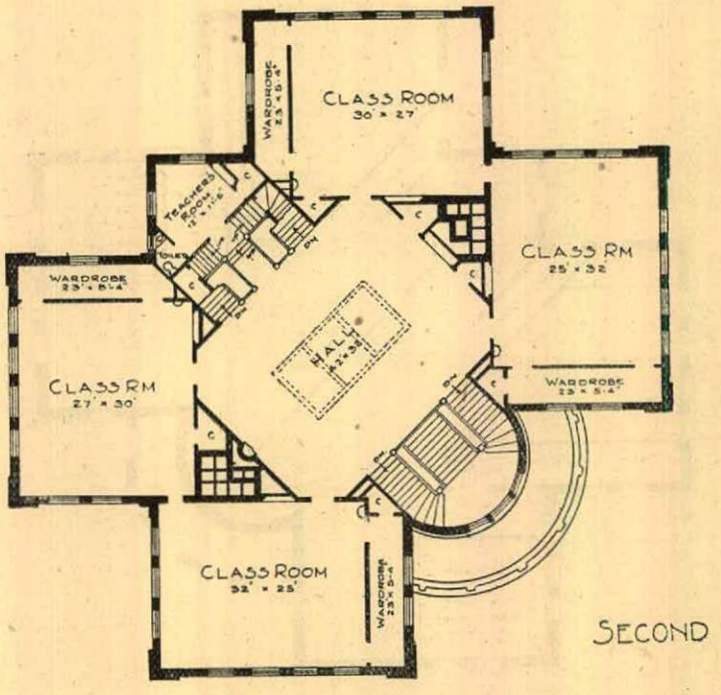
A unique and beautiful eight-room School. Opened February, 1901.



BASEMENT PLAN



First Floor Plan.



Second Floor Plan.

inexpensive ceramics placed against a pleasing background of colour are making it not only attractive and home-like, but are contributing a potent culture element which has heretofore been lacking. Of these art objects pictures are undoubtedly the most important, especially pictures by the masters which are suitable in subject, and which have been reproduced by some art process which insures permanency of colour or tone, preserves the essential qualities of the originals, and which renders the pictures relatively inexpensive."

The list of pictures which the Prang Co. supplies includes :—

(*a*) *Reproductions in fac-simile of finest carbon photographs.*—Print about 20 x 26 inches—cost in America, one dollar. Among the prints are such subjects as the Arch of Constantine, the Egyptian Pyramids, Fighting Temeraire, Sistine Madonna, St. Mark's, Venice.

(*b*) *Carbon Aristos* (size about 12 x 17 inches).—Such subjects as Christ before Doctors (Hoffman), and the Old Mill (Ruysdael)—cost, 2 dollars.

(*c*) *Carbon Prints* (having the effect of carbon photographs).—Print, about 18 x 26 inches—cost in America, five dollars. Among the subjects are Aurora (Guido Reni), Angel Heads, (Joshua Reynolds), Notre Dame, Paris, Venus de Milo.

(*d*) *Platinographs.*—Print about 15 x 24 inches.—cost, 2½ to 5 dollars.

(*e*) *Platino Prints* (having the effect of the platinum photographs).—Size about 12 x 17 inches—cost, one dollar and a quarter. Among the subjects are—Holy Night (Correggio), Infant Jesus and St. John (Rubens), Madonna and Child (Murillo), Rembrandt's Mother (Rembrandt), Holy Family (Van Dyck).

(*f*) *Large Platino Prints.*—Size about 18 x 22 inches—cost, 3 dollars, Among the subjects are—Ploughing (Rosa Bonheur), Reading from Homer (Alma Tadema), Sir Galahad (Watts), Wolf Dog (Potter).

Discipline.—The lady teacher predominates in America, sometimes in charge of the school, but more frequently in the capacity of assistant. Wherever she was seen she was doing her work quietly and effectively. In New York she is paid additional salary if the class under her charge contains 40 per cent. or over of boys. (It must be borne in mind that co-education in America is very general.) The reason for the extra emolument is said to be that lady teachers are subjected to a greater physical and mental strain in the management of boys. This belief is not general, and indeed the inference that boys give more trouble in the class than girls is scarcely correct. The Commissioner inspected many schools in which boys and girls were taught together, but saw no indication of the boys being more difficult to manage than the girls. In fact the general behaviour and attention of the boys created quite a favourable impression. Still, there must be something in the practice of New York, for on the attention of one headmaster being called to the splendid work one of his lady assistants was doing, he replied that the class was wearing her out. The class was composed of boys, everyone of whom, if appearances count, loved his teacher. They had won the badge for drill under her command, and they held the flag for greatest regularity and punctuality of attendance in the whole school. It would seem that the activities of boy life make great demands on the energies of the woman teacher devoted to her calling.

Corporal punishment is not unknown in the American schools, even where a lady is the principal, but it is judiciously applied. In a school of 600 pupils, ranging from 7 to 10 or 11 years of age, the mistress in charge stated that her corporal punishment amounted to about six cases in a month. In a Grammar School, in which boys and girls attend to the age of 14 years, the lady in charge resorted to corporal punishment in extreme cases only, and the state of her school at the time of inspection showed evidences of good training. The discipline in American schools is a very satisfactory feature of the school work. It is not difficult to obtain because the pupils are naturally obedient and earnest.

A good test of obedience was given during one of the weekly practices in "Fire Drill" by pupils in one of the New York schools, at the afternoon dismissal. The school is a three-story building without a playground, in the midst of a densely populated area, with houses abutting on each side. The school fire bell rang, and in three minutes 1,500 children had filed out orderly through the two wide portals on opposite sides of the building, on to the adjacent footpaths. There was no dismissal with military precision such as may be seen at four o'clock near any State School in New South Wales, but the children moved along quietly and promptly till they reached the cross streets, where those who had to pass over did so under the supervision of a policeman stationed there.

Morals and Manners.—The Commissioner was called upon some 10 or 12 years back to reply in his official capacity to a statement that the Americans were in advance of the people of New South Wales in the pride they took in the public institutions provided for their benefit. It was further stated that it was unnecessary to enclose flower beds in the public gardens of America or to provide rangers to look after them, and that neither children nor adults interfered with the flowers and plants placed therein for the pleasure of the citizens. The statements are largely true, but the Americans themselves would be glad if they were more generally so. The bad habit of scribbling on walls, which unhappily is far too common in New South Wales, is very rare, if not entirely absent in America. The gardens and parks intended for the benefit of all are frequently unenclosed, and the plants and flowers are not interfered with. Our pupils, we have to admit, are too often cautioned for the offence of plucking flowers intended to delight and gratify the public. The Commissioner is of opinion that America's high standard in this respect is due to a healthy public opinion in the first place, and in the second place to the special character of the moral teaching which is emphasised by the school authorities in all the States. The Board of Education for the State of California, in the 1900 report, says, in its instructions to teachers—"Good manners are intimately connected with good morals, and teachers should improve every opportunity to teach civility and courtesy. In the primary schools teachers should give particular instruction in the common rules of politeness. The manners of children in their intercourse with schoolmates should receive constant attention. No teachers can expect to make their pupils more civil or more courteous than they show themselves to be. In dress and manner they must be what they would have their pupils become."

Among its golden rules the Board includes the following :—"Strive to cultivate a spirit of true politeness in all your dealings and associations with youth. Remember that children cannot be properly educated until they catch the charm that makes the gentleman or the lady Take every opportunity of moral

moral training. Consider that it is better to make children *good than clever*. Let your intercourse with children be regulated with love. Remember that our Blessed Lord loved little children and 'took them in His arms and blessed them.'"

The splendid buildings of the High School, Springfield, Massachusetts, have been erected about seven years, and although the school is attended by hundreds of pupils, boys and girls, daily, and occupied by scores of youths in Continuation Classes held in the evening, there is not a cut in any part of the woodwork, nor a scratch on the walls. The public men of Springfield work for the good of their various public institutions, the citizens are with their public men, the School Superintendent is universally respected, and his teachers support him thoroughly. Education there is on a high plane, and the pupils with such examples before them catch the spirit of the place. The school teacher is a great factor making for moral development in the progressive town of Springfield. The attention of the headmaster was directed to the excellent state of preservation in which the buildings were seen. He proudly referred to the moral tone existing in the school, and to the healthy public opinion of the citizens, as an explanation of such a result.

The children's method of treating visitors is very pleasing. The question of how children should act towards a visitor when he comes into a school-room has often been considered by the Commissioner. There is no special instruction from the Chief Inspector of New South Wales on this point and so each teacher adopts the method he thinks best. Some of our teachers prefer to receive visitors without the participation of their pupils, performing the necessary courtesies themselves. They probably elect to act in this manner because frequent visits mean too great interruption of the regular class duties. Other teachers allow their pupils to give a formal reception by standing up on a word of command. In some schools on the Continent the salutation is given on the signal of a lad who is placed in a good position in his class-room to note the arrival of a visitor. In America the salutation is spontaneous. The pupils stand on the entrance of the visitor, and if he is accompanied by the headmaster or some well-known official a pleasant "Good morning, Mr. ————" greets the ears of the official. The official invariably introduces the visitor by name to the class, and without any further hint another hearty salutation is expressed: "Good morning, Mr. ————." The American teacher is deserving of great credit for the training he gives his pupils in politeness.

Closely interwoven with the splendid ideals of moral teaching is the sentiment of patriotism which is systematically cultivated in every school. Americans have been credited with carrying instruction in this subject too far, but nothing seen by the Commissioner in any one of the many schools visited points to this conclusion. Every class-room is supplied with a miniature national flag, which is saluted occasionally. Once a week in most of the States the salute is accompanied by the pledge: "I pledge allegiance to my flag and to the Republic for which it stands—one people, one language, one flag."

Civil Government, which is included with History, is part of the instruction given in the elementary schools of America, and in the lessons on that subject the significance of the flag and the pledge is made clear to the pupils. The ceremony of saluting the flag and repeating the pledge was witnessed in the Eastern States, the Western States, and the States on the Pacific Slope, and in every instance the action and the utterance were most impressive.

The American school boy is intelligent, earnest and self-reliant. In his class-room he impresses one with a thoughtfulness beyond his years. His attitude in school, both in the day and evening classes, gives the impression that he feels that he has no time to waste, that he must prepare for a future busy life, that education is a good equipment for the work of that life, and that, while good positions are to be had, competition for them is always keen.

The only scriptural instruction given is that which takes place at the daily opening of the school, when a hymn is sung, a passage from the Bible read by the head teacher, and the Lord's Prayer recited by the whole school.

Classes of Schools.—The Public Schools of America are classified under three heads—Elementary, Grammar and High. Kindergarten, which includes no direct teaching in reading, writing or arithmetic, is given to pupils from 3 to 6 years of age. On completion of the sixth year the primary course commences in the Elementary School. The complete course in the primary schools consists generally of eight grades, coinciding as a rule with the ages of the pupils, starting at the age of 6.

Elementary School—6 to 10 years—Grades 1 to 4.

Grammar School—11 to 14 years—Grades 5 to 8.

Curriculum.—The hours of attendance in the primary schools of America are usually from 9 to 12 in the morning, and from 1.30 to 3.30 in the afternoon on five days in the week.

An account of some of the important features of the class work is given in the following pages.

Reading is taught to beginners on much the same principle as seen in our own infant schools, that is, phonetically; but, judging from pictorial representations and short sentences and words in connection with these pictures, it is clear that the blackboard is much used by the American teacher in teaching this subject. The reading lesson of one of the junior classes was listened to. On one of the slate panels there was a picture in coloured chalks of a little girl with her doll. On another panel were such sentences as—"This little girl has a doll," "The name of the girl is Daisy," "It is a pretty doll." Round the room the important words occurring in the lesson, as "little," "girl," "Daisy," "name," "pretty," were written in several places. The portion of the lesson heard was actually revision of a lesson which had just been given. With the picture still present and the sentences and words still on the board, the children were called upon in turn to read the sentences or pronounce the words. The results were entirely satisfactory. The reading lesson by this lady is always centred round some little story which she illustrates by a well executed picture. The important words used in the verbal description are retained on the board for some days, and frequently revised until they are well impressed on the mind of the child.

Reading and recitation in the higher classes of the public schools are generally good. The nasal twang so commonly heard among American tourists is rarely met with in their schools.

Very intelligent reading was heard in Boston, U.S.A., in an ungraded school. This class of school exists in the immigrant quarters of several large American cities, and as the children are entirely ignorant of the English language when they enter the school, very litle else is done in the first two or three years

years besides making them acquainted with the new tongue. Unlike the American schools generally, where co-education of the sexes obtains, this particular school is set apart for girls. There is not an American-born girl, or, as the head-master put it, a "Plymouth Rock," in the school. They are natives of Southern Europe, from Hungary, Italy, and Portugal chiefly.

The reading lesson was intently watched from the lowest to the highest classes. In the lowest classes pupils from 6 to 14 years of age were bravely attempting to overcome the difficulties of the new language under the instruction of one of the kindest and most patient of teachers. These were children of the latest arrivals. In the senior class, consisting of pupils who had gone through the eight years' course, the reading was excellent. The naturally soft pure tone, the intelligent expression, and the pleasant modulation, were combined in a charming result. A supplementary reader, usually one of the standard authors, is used in this advanced class, and the pupils are trained, as a part of the regular lesson, to stand up in their class and give a description of the scenes and personages occurring in the book read.

Geography is taught with the aid of illustrated text-books which pupils use in their class. These text-books are only aids to the lesson, and do not take the place of the teacher's oral matter. The text-books seen here and in other countries give pupils, by means of the illustrations and letterpress, very good ideas of other parts of the world. There is a danger that the text-book in the hands of the perfunctory teacher, who would consider preparation unnecessary, would affect the usefulness of the lesson.

Geography is closely related to Nature study, and the impressions that the pupil gains from his surroundings are his first steps towards a knowledge of the world. The following scheme is adopted in the schools of San Francisco:—

First Grade.—Observation Lessons.

Position.—Placing of objects with regard to a fixed object.
Measuring.—Inch, foot, yard, correlating with arithmetic. Measuring objects in school, and in space. Measuring instruments under the children's eyes.
Direction.—Cardinal points.—Large arrow on the floor to show them—similar construction in the playground. Direction of buildings and places with regard to the school.
Simple Talks.—About simple things on the earth—in connection with the story of Hiawatha—pupils observing and asking questions about sun, moon, and stars.
Concrete Work.—Sand-board illustrations in school and playground, blocks of wood, and sand representing building &c., spoken of in lessons.

Second Grade.—Observation Lessons.

School-room.—Its geography. Cardinal points, &c.
Measuring.—General comparisons. Height of door, wall, width and length of school—correlating with arithmetic.
City.—Ground-plan on sand-board or out in the playground of school and its precincts. Develop idea of a city, locating some well-known public buildings and suburbs.
Simple talks on Land and Water.—Short simple talks on rock and soil found in neighbourhood of school. Simple talks about train-lines and their termini, using the sand model already constructed, about the harbour and the ferry. Boats and their termini. Robinson Crusoe and his island life explained.
Concrete Work.—Modelling hills, mountains.

Third Grade.

Study of the Locality.—Relief map of the surrounding region—natural features—using sand—similar map on blackboard—relief shown by shading. Side by side with this map, a map of the country. Children's knowledge gained by travel on train or ferry boat utilised—routes and cities marked in coloured chalks. Conversation with pupils on points of geographical interest. Correlate History with Geography.
Study of Natural Features.—This leads up to study of the principal natural features, and if pupils live in a seaport town they have many illustrations of the principal geographical types. Simple technical terms introduced. Concrete study so far. Children know chief land and ocean divisions, the effect of rain on a slope, the sources, courses, and mouths of rivers.
Conversations on City and Commercial Life. Differences between a city, a village, and the country. Kinds of occupation, life, and commerce in each. Interchange of products between city and country. Interdependence of modern life, and how the work of each one influences the lives of many others. Building of a house as a type of the union of country products with city labour. (If practicable take the class to the building.) Exports and imports from the city or place where school is located. Parks, churches, schools, libraries, police, city hall.
Pictures and Maps.—Pictures in this grade—idea of scale, very general only, as applied to drawing a map of the schoolroom. Teachers' maps, approximately accurate, drawn on blackboard, of surrounding places familiar to the children. All teaching so far oral and concrete.

Fourth Grade.

State elementary geography now in the hands of the pupil. Mapping on the blackboard frequent. Globe introduced to give good general ideas. Talks with pupils about climate and life in different parts of the world, races and government. Pictorial illustrations freely used in this grade. Books of travel and various series of geographical readers brought under pupils' notice. Relief maps, on a larger scale, using sand-board, coloured crayons, and the same scale, constructed in presence of pupils—children now acquainted with meteorological maps. Time of journeys of trains to nearest important places noted and marked in red chalk. Geographical scrap-books introduced. This information supplemented by a map study of (*a*) climate of the different parts of the State; (*b*) rainfall or snowfall in different parts of the

the State; (*c*) chief drainage systems of the State; (*d*) occupations of the people; (*e*) density of population. The shipping news in the daily papers explained. Topical study of the productions of the State made. Pupils' visits and experiences given in writing. Interchange of products and interdependence of modern life emphasised. Political geography as in text-book read by teachers and pupils. Correlated with history. Up to this point nothing, except in a very general sense, outside the State in which the child resides taught.

FIFTH GRADE.

Fall Term.—The earth and its motions. General study of North America from the State elementary geography. Construction of a model of the continent and relief maps. Study in connection with slopes of watersheds, land-slopes, drainage basins, harbours, agricultural and auriferous areas, sites for manufacturing centres, interdependence between various centres, and transportation facilities, distributing centres. Location of capitals and important cities on a map. Introduction of a production map showing distribution of chief products. Conversational lessons and pupils' oral explanations of their experiences. Supplementary lessons from publications of the industries of the Continent.

Spring Term.—State elementary geography. Reading the book and answering map questions, from the open map. General study of Grand Divisions of the earth. Map interpretation, relief maps and models. Commercial and industrial conditions as determined by the geography. Commercial interdependence with the world. Comparison of climate. Mode of life of the people, education, means of communication; forms of government. Names and locations of a few of the principal countries, cities, and physical features of each Grand Division. The early navigators, correlating with history.

SIXTH GRADE.

The State advanced geography in the hands of the pupils. Subjects: Rotunity of the earth and proofs, early voyages, motions of the earth, latitude and longitude, continent of North America in detail, progressive outline map by each pupil, relief map by teacher, drainage, climate, political divisions, production and industry map. Conversations on transportation facilities, products, fruit regions, raising of cattle, sheep, and hogs, fishing industry, mining, lumber industry.

SEVENTH GRADE.

Fall Term.—Study of Canada, Central America, West Indies, South America, Eurasia, and West Eurasia or Europe. State advanced geography. Names and locations of capitals and a few of the really important cities of each country, with points of interest. More important natural features. Important rivers and their commercial significance. The reason of agricultural and industrial conditions from a study of the map. Conditions and customs of the people. Geographical scrap-books for each country. Rough outline maps by each pupil. Routes of vessels. Extracts from shipping columns of daily papers.

Spring Term.—State advanced geography: The British Isles, South-Western Europe, Turkey, South-Eastern Eurasia, Japan, Africa, and Oceania.

EIGHTH GRADE.

Physical Geography. Work in both Geography and Nature study; clear-cut pictures great aid in this branch. Subjects: The earth in space; latitude and longitude; the atmosphere; the surface of the earth; mountains, earthquakes, and volcanoes; rivers, glaciers, lakes, oceans; erosion and sedimentation; climate; winds, air-currents, weather maps; rain, snow, &c.; waves, tides, currents in the ocean; distribution of animals and plants; mankind on the earth.

Arithmetic.—The Board of Education for the public schools of the city and county of San Francisco, California, in its courses of study in arithmetic gives its teachers some very practical suggestions.

In the youngest classes "the serial and ratio idea, counting and measuring, should go hand-in-hand. Some things, as four marbles or six boys, must be counted; other things, as the length of a leaf or the width of a board, must be measured. . . . . Numerical ideas are ideas of the relations of quantities or magnitudes, and must be taught through a comparison of them. The child must be taught first the idea of greater or less, which involves addition and subtraction; then the idea of how many times greater or less, which involves multiplication, division, and fractions; assuming any quantity as a basis involves the principle of ratio and proportion. . . . It clearly follows that numerical ideas are best developed by using objects that can be measured, and by actually measuring them. Even in counting, the fixed unit plan—that is, counting only by single things or objects—should be avoided. . . . In teaching let the teacher make liberal use of objects of the same kind, having different sizes in exact relation to one another, and of actual measurings, as with the foot-rule, six-inch rule, pint measure, quart measure, &c. . . . . Throughout the course there should be frequent short mental drills. . . . . Throughout the work, teachers should give a large number and a great variety of practical problems which will apply the principles learned. *Many of these should be solved mentally.* In giving such problems, care must be taken not to go beyond the common experiences of the class. The home and outdoor life of the children and city life of San Francisco offer the best of opportunities for arithmetical work. . . . Teachers should not make the mistake of trying to cover too much ground, or to solve too many problems. To secure the ability to do careful, continuous thinking should be the aim of the work. . . . Teachers should also not make the mistake of attempting too difficult problems. The basis of good arithmetical work lies in the accurate and rapid use of the four fundamental operations, both with whole numbers and fractions, and accuracy and rapidity in the use of the fundamentals can be obtained better by drill with small numbers than with large."

The

The Board lays down in very plain terms what it expects from supervisors, teachers and pupils, when five years of the course have been run. "It is to be expected that as a result of this year's work (the fifth year, pupils about the age of 11), there shall be accuracy and reasonable rapidity in the four fundamental operations, as applied to *small* common and decimal fractions, and thinking ability, as expressed in the power to give an oral analysis of such simple problems. No difficult problems or methods of solution will be expected. What is wanted is a thorough drill on a few fundamental operations, using only such problems as pupils can handle readily."

Grammar.—In teaching grammar in the Board Schools of England it was noticed that very little time was given in the daily routine to parsing, but that much attention was bestowed on composition and analysis. In the schools of the United States a great point is made, especially in the earliest stages, of using correct forms of speech. The teachers are urged to "eradicate common errors and to guard the children against the contagion of bad example." They are cautioned against putting before their pupils examples of false syntax to correct. In the higher grades of the school the danger of too great mechanical teaching of the subject is thus referred to:—"Grammar, as the subject is usually taught, is a piece of logic, and makes little appeal, except to the mature mind, and a prolonged grind on it alone is not likely to develop either ease or accuracy in the use of one's native tongue; while on the contrary, pupils ignorant of parts of speech, parsing or analysis, are able to use good English and give an intelligent reason for doing so, if they have good training in its use."

Object Lessons, taught in connection with Nature study, are strong features of the class work in American schools. As each teacher is provided with a separate class-room in which to carry on her work she is able, with the co-operation of her pupils, to mark out a certain line of study and to obtain the necessary concrete examples. On entering a class-room in an American school one is struck with the brightness, the cheerfulness, of everything in the room, and it will be surprising if there is not something to show in the way of preparation, for some Nature study—*e.g.*, a collection of twigs to teach something of the buds; the window garden, in which the children will take an interest in preparing the soil, planting the seeds watering them; planting similar seeds in a wet sponge so that the development of rootlets, etc., may be watched; collections of flowers and plants.

Euclid, Algebra, and Latin are not included among the primary subjects, but a modern language is taken in some schools. Manual Training and Drawing are systematically taught. Specialisation does not take place until the Grammar School course is completed.

CHAPTER XIV.

The Public Schools of Toronto, Canada.

[J. W. TURNER.]

Schools and School Methods.—The Public School in Church-street, Toronto, among others, was visited in company with Inspector Hughes, and the teacher's usual work was watched with considerable pleasure. The relations existing between inspector and teacher and between inspector and pupils were very pleasing. It did not take long to understand the good feeling between the former. Mutual trust was apparent. There was no assumption of authority on the one hand or sign of subordination on the other. Two friends had met, one happened to be the inspector, the other the teacher, and each respected the other's position. The spontaneous welcome given to the inspector by the 50 little ones assembled in the class room showed the relationship existing between Inspector and pupils. The visitor was introduced and received a cordial greeting too. This phase of good manners appealed to the Commissioner as a fine trait in both American and Canadian schools.

Singing was the subject set down on the time-table, and the little folks, about 9 or 10 years of age, were to be exercised in intervals from Curwen's Modulator, and in voice production. The Commissioner was very much impressed with the true spiritual feeling and the great sympathy manifested by the lady teacher. Christmas was just past and as an introduction she made a loving little address to her care, stating that she had heard that Santa Claus had made them all very happy during the glad season. Holidays, she said, are occasions for happiness, and school is a place where happiness can be found. Then she asked her little ones to show their happy feelings and use the sweet voices that God had given them. And in this manner this teacher reached the hearts of her little children. What a response she received to her sweet appeal! The singing was beautiful. The tones were pure and soft. The scale was sung to various syllables for proper voice production. The intervals, which introduced the "Old Hundredth" hymn, were sung from manual signs and also from the Modulator. The whole effect was characterised by cheerfulness, brightness, and earnestness. This young teacher, with many other women seen in American schools, had caught the true teaching spirit and realised some of the noblest ideals of the teacher's calling.

The Commissioners are inclined to the opinion that women with these qualifications would prove valuable assistants in charge of the lower classes in our own boys' schools.

Cadet

Cadet Corps.—One of the most interesting features of the public schools of Canada is the Cadet Corps, numbering 1700, in the city of Toronto. The lads are uniformed by private enterprise, drilled by military instructors, and commanded by the Inspector of Schools. The Cadet movement in primary schools is not known either in the United Kingdom (although some of England's military men have made public reference to the great necessity for early military training), or the United States, but seems to make fair progress in Canada and Australia. The only Cadet Corps seen on the Continent was attached to a primary school in Lucerne, Switzerland. A well-kept armoury in that school, which was inspected, contains a fine little weapon for target practice. There are good rifle ranges in the vicinity of most of the large towns in Switzerland, which are used both by the regular forces and the school boys.

The Cadet system in Toronto is very popular with the citizens and military authorities, who see in it a benefit to the lads physically and morally, and a good training for the future soldiers of the Dominion.

Buildings.—The Canadian schools vary in size from structures of two rooms on a ground floor to eighteen rooms in a building of three stories, and each room is separate. The schools are built of brick on a uniform plan. The architecture in the Toronto buildings is simple but attractive, and the rooms are lofty, well lighted and ventilated, and heated by means of currents of warm air ascending from the basement, where the fires are placed, through ventilating shafts between the walls of the rooms. A screen about 8 feet high is placed near the entrance end of each class-room to provide a recess for hats, cloaks, etc. This arrangement is not in accordance with hygienic conditions obtaining in the schools of Switzerland and Germany and many other parts, but the architect defended it by saying that the hats and coats did not render the rooms unpleasant. The door of each class-room opens outward, and is so placed and hung that the teacher may engage in conversation with a parent or other person who may wish to interview him, without distracting the pupils' attention, at the same time that he can fully supervise his class. The desks are either simple or dual of the same pattern as the Canadian desks which may be seen in a few of the large schools in Sydney. Some of the desks and seats are fixed, but a wise provision is made in every room for a sufficient number of adjustable single desks and seats in the interests of children who are above or below the average physical development. Such an arrangement detracts from the orderly appearance of a room, but this is a very small matter in comparison with the comfort and health of the pupils. The necessary conveniences for the pupils are situated in the basement. In such a severe climate as Canada experiences in the winter months there would be a positive danger to health in exposing the children from an indoor temperature of about 60° or 70° to that of an outdoor temperature of some degrees below freezing point.

A fairly large portion of the playground in city schools in Canada is boarded. Flower beds are generally laid out near the fences which enclose the schools, and for a good sized space immediately round the school buildings the surface of the ground is floored with stout pine planks, ten inches in width and of uniform length, resting on cross planks. When the planks wear, which they usually do at the ends or edges, the portion worn is cut out and a new piece inserted. The school architect in Toronto is of opinion that for Canada, timber as a surface for playgrounds wears best and is safer than asphalt or gravel, while equally hygienic. He also says, that owing to the vast amount of suitable timber procurable in the country the cost of laying down this kind of floor is very small comparatively.

The Newsboys' School, Toronto.—This school is a unique institution. It is under the control of the City Inspector of Schools, and is attended by about eighty boys, most of whom are employed in selling newspapers. No boy is allowed to sell newspapers in the streets of Toronto without a license, and no boy of school age can obtain a license unless he attends the Newsboys' School or one of the elementary schools of the city. A lady teacher is in charge, and the curriculum is a very much modified form of the elementary school syllabus. The pupils attending are compelled to spend not less than two consecutive hours daily in the School, and are allowed the option of choosing the time for study, so as not to clash with their business arrangements outside. Reading, writing, composition, and arithmetic—practical examples helping them in their little money transactions and mental operations—receive most attention. Letter-writing is well taught. Time is also found for a little manual training in wood-work. Most of the newsboys attend in the forenoon, the shoeblacks in the afternoon. The boys, in nearly every case, help to support widowed mothers. The working of this school was carefully watched. Considerable freedom is allowed, yet nothing approaching the slightest disorder was noticed. Love is the ruling principle in the management, and earnestness, attention, and general good conduct are the results. It is no matter for surprise that the City Inspector is proud of this institution. A similar school, conducted on similar lines, is wanted in Sydney. The form of license is as follows :—

POLICE DEPARTMENT, CITY OF TORONTO.

LICENSE FOR BOOTBLACKS, VENDORS OF NEWSPAPERS AND SMALL WARES.

THIS License is issued to , aged , living at , subject to the conditions printed hereon.

Recommended,
(Signed) D. ARCHIBALD,
Staff Inspector.

Approved,
(Signed) H. J. GRASETT,
Chief Constable.

No. 110. Date.

Rules and Regulations for Children engaged as Bootblacks, Vendors of Newspapers and Small Wares.

1st. No license shall be issued to any child under 8 years of age.

2nd. All applications for license shall be made at the office of the Staff Inspector by the parent, guardian, or nearest friend, accompanied by the applicant; and every child licensed shall attend school not less than two hours each day during the school year.

3rd. Every child so licensed shall exhibit, or cause to be produced, the license when required to do so by the police, and the same shall not be transferred, exchanged, borrowed, or lent, under the pain of the forfeiture of said license.

4th. Every license shall extend to the close of the year in which it is issued.

5th. Every child so licensed may be required to reside with his parents or guardian, or in lodgings to be approved of by the Staff-Inspector,

6th. Licenses will be issued without charge; but if the license be not forthcoming when required it will not be replaced except on payment of 25 cents.

Time-tables

Time-tables of Higher Grade School, England; Upper Primary Schools, France; Superior Public Schools, New South Wales.

Chapter XIV concludes the section of this Report devoted to a description of Primary School Systems. In order to allow of comparisons between the curricula of the schools of other countries and our own the Time-tables of the Higher Grade School, Leeds (England), the Upper Primary Schools of France, and of three of the Superior Schools of this State, are subjoined :—

SYNOPSIS OF TIME-TABLE, HIGHER GRADE SCHOOL, LEEDS.

TOTAL NUMBER OF HOURS PER WEEK.

Subjects of Instruction.	Classes.																				
	I.										II.						III.				IV.
	Boys.						Girls.				Boys.				Girls.		Boys.		Girls.		Boys and Girls.
	A	B	C	D	E	F	A	B	C	D	A	B	C	D	A	B	A	B	A	B	
Physics	2¾	3¼	3¼	3¼	3¼	3¼	3¼	3¼	3¼	3¼	3½	3¼	3¼	3¼	3¼	3¼	3½	3½	3½	3½	4½
French	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3½	3½	3½	3½	3½
Chemistry	3¼	3¼	3¼	3½	3¼	3¼	3¼	3¼	3¼	3¼	3¼	3¼	3½	3¼	3½	3½	3¾	3½	3¾	3½	4½
English	2¼	2¼	2¼	2¼	2½	3	3	2¼	2¾	3	2¾	2½	3	2¼	2¼	2¾	2¼	2½	2¼	2½	1½
Shorthand	½	¼	½	½	½	½	...	...	...	...	½	½	½	½	...	...	½	½	½	½	...
Scripture	¾	¾	¾	...	1	...	½	½	...	1	...	...	...	...	...	...	...	...	...	...	...
Latin	1¾	1¼	1¾	1¾	1¾	2	1¾	1¾	2	1½	2¼	1½	2½	2	2	2	2¼	2½	2¼	2½	5
Mathematics[1]	4	4	4	4¼	4	4	4	4	4¼	4	4	4	4	4	4¼	3½	4	4½	4	4½	5
Geography	1½	1¾	1¾	1¼	1	1	1¾	1½	1¼	1½	1½	1	1	1	2	1½	1	1	1	1	½
History	1¼	1	1¾	1½	1½	1½	1½	1¼	1½	1¼	½	1	...	1½	1½	1½	1	1½	1	1½	2
Geometry	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	1½	...	...	...	...	...
Gymnasium	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½	½
Art	1	1	1	1	1	1	1	1	1	1	1½	1½	1½	1½	1½	1½	2	2	2	2	...
Manual Instruction	2	2	2	2	2	2	...	...	...	...	2	2	2	2	...	...	2	2	...	...	...
Dressmaking and Cookery	...	...	...	...	...	...	2	2	2	2	...	...	...	...	2	2	...	...	2	2	...
Book-keeping	½	½	½	½	½	½	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Business Methods	...	...	...	...	...	...	...	...	...	...	½	½	½	½	...	...	...	...	...	...	...
Totals	26	26¼	27¾	27	27¼	27	27	27¾	26¼	26¾	27¼	26	26¾	26¾	27¼	26¼	26¼	27¼	26¾	27¼	27

[1] Mathematics includes Arithmetic, Algebra, and Euclid in 1st year, with Trigonometry in 2nd, 3rd, and 4th years, and Conics and Calculus for a few in 4th year.

GENERAL TIME-TABLE, 1901-2—HIGHER SECTION, CENTRAL HIGHER GRADE SCHOOL—LEEDS, ENGLAND.

X., X. p. = Chemistry, Theoretical and Practical. I. = Practical, Plane and Solid Geometry. V. Means Mathematics (Arithmetic, Algebra, Euclid, in 1st Year, with Trigonometry in 2nd, 3rd, and 4th Years, and Conics and Calculus for a few in 4th Year). Intl. = Interval.

I A Boys.

	9·0	9·30	10·0	10·30	11·0	11·30	12·0
Mon. ...	Practical Physics.			Intl.	Dictn.	French.	
Tues....	X. p.			Intl.	English.		Shorthand.
Wed....	Scripture or Latin.		Physics.		Intl.	V.	
Thurs..	V.		English.		Intl.	X. Dem.	
Fri. ...	Geography.		Latin.		History.	Intl.	X.

	2·0	2·30	3·0	3·30	4·0	4·30
Mon. ...	V.		I.			
Tues....	Physics Dem.		History.	Gym.		Geography.
Wed....	Art.		French.			Geography.
Thurs..	English.		Manual Instruction.			
Fri. ...	V.		French.			Book-keeping.

I B „

	9·0	9·30	9·45	10·0	10·15	10·30	11·0	12·0
Mon....	Scripture or Latin.		History.	Intl.			Practical Physics.	
Tues....	English.		Physics Dem.		Shorth'd.	Intl.	V.	
Wed...:	V.		Dic.	Intl.			X. p.	
Thurs..	Scripture or Latin.	Dic.		X. Dem.			French.	
Fri. ...	Latin.	English.		Manual Instruction.				

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	French.		Geography.		Art.	
Tues....	V.		English.	Gym.		Geography.
Wed....	French.		I.			
Thurs..	V.		Physics.			History.
Fri. ...	English.	Book-keeping.	Geography.		Chemistry.	

I C „

	9·0	9·45	10·0	10·30	11·0	12·0
Mon....	X. p.			Dictn.	Intl.	V.
Tues....	Scripture or Latin.	History.	Intl.	Practical Physics.		
Wed....	French.	History.	Latin.	V.		
Thurs..	Geography.	Physics.		Intl.	V.	
Fri. ...	English.	Manual Instruction.				

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	French.		Art.			Book-keeping.
Tues....	V.		Geography.		X. Dem.	
Wed....	Physics Dem.		English.		X.	
Thurs .	Latin.	Gym.	French.			History.
Fri. ..	Shorthand.	Geography.	I.			

I D „

	9·0	9·30	9·45	10·0	10·30	11·0	12·0
Mon....	French.			Latin.		Intl.	V.
Tues....	English.		Geography.		X. p.		
Wed....	Latin.	History.	Geography.	English.		V.	
Thurs..	French.			X.		V.	
Fri. ...	Latin.	V.			Intl.	French.	

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	Physics.		English.			History.
Tues....	History.	Manual Instruction.				
Wed....	Art.		X. Dem.			Shorthand.
Thurs..	Book-keeping.	Gym.	Practical Physics.			
Fri. ...	I.		Dictn.	Physics. Dem.		

I E „

	9·0	9·30	10·0	10·30	11·0	12·0
Mon....	Scripture or English.		Manual Instruction.			
Tues....	Latin.	History.	X.	Intl.	V.	
Wed....	Latin.	Geography.	English.	Intl.	V.	
Thurs..	I.		History.	Intl.	Physics Dem.	
Fri. ...	Latin.	V.		Intl.	X. Dem.	

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	V.		Practical Physics.			
Tues....	English.		French.			Book-keeping.
Wed....	French.		Shorthand.	Gym.		History.
Thurs..	X. p.			French.		
Fri. ...	Physics.		Geography.		Art.	

I F

	9·0	9·30	10·0	10·30	11·0	12·0
Mon....	V.		Manual Instruction.			
Tues....	V.		Latin.	Intl.	French.	
Wed....	French.		English.	Intl.	X.	
Thurs..	Latin.	History.	Geography.	Intl.	V.	
Fri. ...	Latin.	Physics.	X. p.			

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	English.		History.		X. Dem.	
Tues....	English.		Practical Physics.			
Wed....	V.		Book-keeping.	Gym.		Geography.
Thurs..	Physics Dem.		I.			Dictn.
Fri. ...	French.		Shorthand.		Art.	

GENERAL TIME-TABLE, 1901-2—HIGHER SECTION—LEEDS, ENGLAND—*continued.*

I A Girls.

	9·0		0·0	10·30	11·0	12·0
Mon....	French.		Dic.	Intl.	X. p.	
Tues....	X. Dem.		V.		French.	
Wed....	Physics.		Art.		French.	
Thurs..	Practical Physics.			History.	V.	
Fri. ...	Scripture and Latin.		Geography.	Gym.	V.	

	2·0	2·30	3·0	3·45	4·30
Mon....	V.		Geography.	History.	
Tues....	Latin.		Dressmaking and Cookery.		
Wed....	English.	Intl.	I.		
Thurs..	English.		X.	Latin.	
Fri. ...	English.		Physics Dem.	Hist. or Geog.	

I B ,,

	9·0		10·0	10·30	10·45	11·0	12·0
Mon....	French.		Dic.	History.	Intl.	English.	
Tues....	V.		Geography.		Intl.	French.	
Wed....	English.		V.			French.	
Thurs..	Art.		Dressmaking and Cookery.				
Fri. ...	Practical Physics.			Gym.		English.	

	2·0	3·0	3·45	4·30
Mon....	Physics Dem.	Intl.	X. p.	
Tues....	X. Dem.		Physics.	Latin.
Wed....	Scripture and Latin.		I.	
Thurs..	V.		History.	Latin.
Fri. ...	V.		Geography.	X.

I C ,,

	9·0	9·45	10·0	10·30	11·0	12·0
Mon....	French.		Dressmaking and Cookery.			
Tues....	Physics Dem.		English.	Gym.		French.
Wed....	V.			X.	Intl.	French.
Thurs..	X. p.				Intl.	V.
Fri. ...	Latin.	English.	Intl.	Practical Physics.		

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	V.		Geography.		Art.	
Tues....	English.	Latin.	V.			Dictn.
Wed....	English.		Latin.		History.	
Thurs..	Physics.		I.			
Fri. ...	Geography.	History.	X. Dem.			

I D ,,

	9·0	9·45	10·0	10·30	11·0	12·0
Mon....	French.			X.		V.
Tues....	Latin.		X.	Gym.		French.
Wed....	Scripture or Latin.		History.		Intl.	French.
Thurs..	English.	History.	Intl.	Physics Dem.		English.
Fri. ...	X. p.			Intl.	English.	

	2·0	2·30	3·0	3·30	4·0	4·30
Mon....	Geography.		Physics.			Latin.
Tues....	V.		I.			
Wed....	V.		Practical Physics.			
Thurs..	Geography.		Dressmaking and Cookery.			
Fri. ...	V.		Dictation.		Art.	

II A ,,

	9·0		10·0	10·30	11·0	11·30	12·0
Mon....	Geography.			Physics.		V.	
Tues....	V.			Dressmaking and Cookery.			
Wed....	V.			Latin.		X.	
Thurs..	Art.				History.		Latin.
Fri. ...	X.		History.	Physics Dem.		Intl.	V.

	2·0	3·0	3·30	4·0	4·30
Mon....	English.	I.			
Tues....	French.	Practical Physics.			
Wed....	French.	Gym.		English.	
Thurs..	Geography.	X. p.			
Fri. ...	French.	Arithmetic.	Dictn.	Latin.	

II B ,,

	9·0		10·0	10·30	11·0	12·0
Mon....	English.			French.	V.	
Tues....	V.			Dressmaking and Cookery.		
Wed....	Latin.		Geography.	X. p.		
Thurs..	English.		Geography.	Art.		
Fri. ...	V.		X.		Intl.	Physics Dem.

	2·0	3·0	3·30	4·0	4·30
Mon....	Latin.	Practical Physics.			
Tues....	X.	I.			
Wed....	History.	Gym.		Physics.	
Thurs..	Arithmetic.	French.			English.
Fri. ...	French.	Dictn.	History.	Geography.	

GENERAL TIME-TABLE, 1901-2—HIGHER SECTION—LEEDS, ENGLAND—*continued.*

II A Boys.

	9·0		10·0	10·30	11·0		12·0
Mon. ...	V.			Latin.	Intl.	English.	
Tues....	V.			X.		English and History.	
Wed....	Art.					Practical Physics.	
Thurs..	V.			English.		French.	
Fri. ...	Bus. Methods.	Shorthand.		V.		French.	

	2·0	2·30	·0	3·30	4·0	4·30
Mon. ...	X. p.			French.		
Tues....	Physics.			Geography.		Gym.
Wed....	X.	Dictn.		I.		
Thurs..	Latin.			Manual Instruction.		
Fri. ...	Physics Dem.			Latin.		Geography.

II B ,,

	9·0	9·30	10·0	10·30	11·0	12·0
Mon. ...	Dictation.	Latin.		English.		French.
Tues....	Physics.		V.		Intl.	X.
Wed....	Practical Physics.			Geography.	Intl.	X.
Thurs..	I.			Latin.		V.
Fri. ...	V.			French.		English.

	2·0	2·30	·0	3·30	4·0	4·30
Mon. ...	Bus. Methods.	Shorthand.		V.		History.
Tues....	French.			History.		Gym.
Wed....	Latin.			Manual Instruction.		
Thurs..	Art.			Physics Dem.		
Fri. ...	X. p.			Geography.		Latin.

II C ,,

	9·0	9·30	10·0	10·30	11·0	12·0
Mon. ...	Geography.	Bus. Meths.		Physics Dem.		V.
Tues....	French.		Latin.		I.	
Wed....	V.			French.		English.
Thurs..	English.		Latin.		X. p.	
Fri. ..	French.		English.	Latin.		Arithmetic and V.

	2·0	2·30	3·0	3·30	4·0	4·30
Mon. ...	X.			Art.		
Tues....	Shorthand.			Manual Instruction.		
Wed....	Geography.		Physics.		Latin.	
Thurs..	V.			English.		Gym.
Fri. ...	X. Dem.			Practical Physics.		

II D ,,

	9·0	9·30	10·0	10·30	11·0	12·0
Mon. ...	English.			French.		Physics Dem.
Tues....	Geography.	Latin.				X. p.
Wed....	History and Geography.			X.		V.
Thurs..	V.		Latin.			I.
Fri. ...	Practical Physics.			Latin.		French.

	2·0	2·30	3·0	3·30	4·0	4·30
Mon. ...	V. and Arithmetic.			X.		English.
Tues....	V.			Art.		
Wed....	Shorthand.	Bus. Methods.		Geography.		French.
Thurs..	Physics.	Dictn.		History.		Gym.
Fri. ...	English.			Manual Instruction.		

III A

	9·0	9·30	10·0	10·30	11·0	12·0
Mon. ...	X. Dem.				Art.	
Tues....	Geography.	Shorthand.		French.		Physics Dem.
Wed....	Physics.			English.		V.
Thurs..	X.		Dic.	Intl.		Practical Physics.
Fri. ...	Latin.			French.		V.

	2·0	2·30	3·0	3·30	4·0	4·30
Mon. ...	Gym.			Manual Instruction.		
			Dressmaking.			Gym.
Tues....	V.			English.		History.
Wed....	Latin.			X. p.		
Thurs..	French.			V.		Latin.
Fri. ...	V.			History.	Latin.	Geography.

III B

	9·0	9·30	10·0	10·30	11·0	12·0
Mon. ...	Latin.		V. and Arithmetic.			X.
Tues....	Latin.			French.		V.
Wed....	X. p.			Shorthand.		Physics.
Thurs..	Latin.			V.		English.
Fri. ...	History.	Geography.		Art.		

	2·0	2·30	3·0	3·30	4·0	4·30
Mon. ...	Gym.			Manual Instruction.		
			Dressmaking.			Gym.
Tues....	English.			Physics Dem.		Dictation.
Wed....	French.		Geography.		History.	
Thurs..	Practical Physics.			X.		
Fri. ...	V.			French.		

IV

	9·0	9·30	10·0	10·30	11·0	12·0
Mon. ...	Physics.			French.		Latin.
Tues....	French.	History.			Latin.	Gym. for Girls.
Wed....	XI. or X.			French.		V.
Thurs..	French.	General Physics.			Latin.	Gym. for Boys.
Fri. ...	French.	Physics Dem.		Latin.		V.

	2·0		3·0	3·30	4·0	4·30
Mon. ...	Arithmetic.			Latin.		
Tues....	V.			XI. p. or X. p. (Adv.)		
Wed....	History.			Practical Physics.		
Thurs..	XI. or X.			V.		English.
Fri. ...	V.		Geography.		English.	

SYNOPSIS OF TIME-TABLE—UPPER PRIMARY AND PROFESSIONAL SCHOOLS OF FRANCE.

TABLE OF HOURS DEVOTED TO EACH SUBJECT PER WEEK.

Subjects of Instruction.	Minister of Public Instruction—Upper Primary Schools.									Minister of Commerce—Practical Schools.					
	General Instruction.			Agricultural Section.		Commercial Section.		Industrial Section.		Industrial.			Commercial.		
	I Year.	II Year.	III Year.	II Year.	III Year.	II Year.	III Year.	II Year.	III Year.	I Year.	II Year.	III Year.	I Year.	II Year.	III Year.
Morale	1	1	1	1	1	1	1	1	1	...	...	...	...	...	...
French	5	5	4	2	2	2	2	2	2	3	3	1½	4½	3	3
Writing	1	1	1	1	1	1	1	1	1	...	...	...	3	1½	1½
History and Civic Instruction	1	1	2	1	1	1	1	1	1	1½	1½	...	1½	1½	...
Geography	1	1	1	1	1	2	2	1	1	1½	1½	...	1½	3	3
Modern Languages	3	3	2	...	...	4	4	...	...	...	...	...	6	6	6
Mathematics	4	3	3	2	2	2	2	3	3	3	3	4½	3	4½	4½
Book-keeping	...	1	1	1	1	3	3	2	2	...	...	1½	6	6	6
Physics and Chemistry	2	2	2	2	2	2	2	2	2	1½	3	1½	3	3	3
Natural History and Hygiene	1	1	1	2	2	1	1	1	1	...	1½	1½	...	1½	...
Agriculture and Horticulture	1	1	1	3	3	...	...	...	...	...	...	...	...	...	...
Common Law, Political or Industrial Economy	...	...	1	...	1	...	1	...	1	...	...	1½	...	...	4½
Drawing and Modelling	3	3	3	1½	1½	1½	1½	4½	4½	6	6	6	1½	1½	1½
Manual or Agricultural Work	4	4	4	6	6	2	2	6	6	30	30	33	...	...	...
Gymnastics	2	2	2	2	2	2	2	2	2	...	...	...	...	...	...
Singing	1	1	1	1	1	1	1	1	1	...	...	...	...	...	...
Hours apportioned according to the needs of the work	...	...	...	3½	2½	4½	3½	2½	1½	...	...	...	...	...	...
Total	30	30	30	30	30	30	30	30	30	46½	49½	51½	30	31½	33

Nine hours' additional work is provided for in the Commercial Schools.

SYNOPSIS OF TIME-TABLE, MODEL PUBLIC SCHOOL (BOYS), FORT-STREET, SYDNEY, NEW SOUTH WALES.

Subjects—	University Senior Examination Class.	Public Service Examination Class.	Matriculation Classes—University Junior Examination.				Modern Classes—University Junior Examination.			
			5D	5C	5B	5A	5D	5C	5B	5A
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Latin	5 0	.....	7 40	7 0	3 50	3 45	.....	.....	.....	.....
French[2]	3 50	2 35	6 25	6 30	5 35	4 15	6 20	6 0	5 45	3 45
English[2]	2 30	4 40	2 20	2 45	4 45	5 0	2 40	2 30	3 0	3 55
History[1]	5 40	4 20	2 30	2 30	3 0	3 30	2 30	2 15	4 30	4 0
Arithmetic	1 40	3 30	3 20	3 20	4 35	4 0	3 50	4 30	4 15	4 35
Algebra	2 25	3 35	3 15	3 20	3 0	4 15	4 15	5 0	3 30	4 10
Geometry	1 45	2 15	3 15	3 20	3 0	4 0	4 50	5 0	4 15	4 10
Geography	.....	3 25	.....	.....	.....	.....	3 20	3 30	3 30	4 10
Trigonometry[4]	2 35	2 40	.....	.....	.....	.....	.....	.....	.....	.....
Mechanics[4]	3 20	3 5	.....	.....	.....	.....	.....	.....	.....	.....
Précis and Letter-writing	.....	2 30	.....	.....	.....	.....	.....	.....	.....	.....
Geology[5]	.....	3 20	.....	.....	.....	.....	.....	.....	.....	.....
Hours per week	28 45	28 45	23 45	28 45	28 45	28 45	28 45	28 45	28 45	28 45

[1] Ancient and Modern for Senior Class—English History only for other classes.
[2] Includes Composition and Dictation
[3] Includes French Conversation.
[4] Trigonometry and Mechanics are taken in Public Service Class only by those preparing for Professional work.
[5] Geology is alternative to English author.

UNIVERSITY SENIOR EXAMINATION CLASS—GENERAL TIME-TABLE (BOYS).

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9 to 9·55 a.m.	Trigonometry.	Geometry.	Latin.	Latin.	Mechanics.
9·55 to 10·50 a.m.	Latin.	Latin.	Algebra.	English.	Latin.
		Recess for ten minutes.			
11 to 11·45 a.m.	Algebra.	Latin.	European History.	Mechanics.	Algebra.
11·45 to 12·30 p.m.	French.	English.	French.	French.	European History.
		Recess for Dinner.			
1·30 to 2·20 p.m.	European History.	Arithmetic.	Mechanics.	Geometry.	French.
2·20 to 3·10 p.m.	French.	Greek History.	English Literature.	Roman History.	Trigonometry.
3·10 to 4 p.m.	Roman History.	Mechanics.	Trigonometry.	Arithmetic.	Greek History.

PUBLIC SERVICE EXAMINATION CLASS—GENERAL TIME-TABLE (BOYS).

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday
9 to 9·55	Algebra. Trigonometry.	Algebra.	Arithmetic.	Algebra.	Mensuration.
9·55 to 10·45.....	English Composition.	Précis Writing.	History. Mechanics.	History.	History. Mechanics.
		Recess.			
11 to 11·55	History.	History.	Dictation.	Trigonometry.	Geography.
11·55 to 12·30	French. Mechanics.	French.	French.	English Composition.	Geometry.
		Recess.			
1·30 to 2·20	Arithmetic.	Geometry.	Letter-writing.	Geometry.	Arithmetic.
2·20 to 3·10	Geography.	Geography.	Algebra.	Geography.	French. Trigonometry.
3·10 to 4	Geology. English.	Geology. English. Mechanics.	Geology. English.	Précis-writing.	Geology. English.

Trigonometry and Mechanics are taken by pupils studying for the Professional Division.
Geology and English are alternative subjects for this examination.

MATRICULATION CLASS V D—GENERAL TIME-TABLE (BOYS)

(Same Time-table for V A, B, C.)

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9 to 9·55	Arithmetic.	Latin.	Latin.	Euclid.	Latin.
9·55 to 10·45.....	Latin.	Algebra.	French.	Latin.	Arithmetic.
		Recess for ten minutes.			
11 to 11·45	Euclid.	Arithmetic.	English.	Algebra.	English.
11·45 to 12·30	French.	French.	Latin.	French.	Euclid.
		Recess for Lunch.			
1·30 to 2·20	English.	History.	Algebra.	History.	French.
2·20 to 3·10	Latin.	Euclid.	French.	French.	Algebra.
3·10 to 4	French.	Latin.	Arithmetic.	Latin.	History.

MODERN CLASS V D—GENERAL TIME-TABLE (BOYS).

(Same Time-table for V A, B, C.)

Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9 to 9·55	English.	Geography.	English.	Algebra.	Algebra.
9·55 to 10·45.....	Algebra.	Arithmetic.	Algebra.	Geometry.	Arithmetic.
		Recess.			
11 to 11·45	Arithmetic.	Geometry.	Arithmetic.	Arithmetic.	Geometry.
11·45 to 12·30	French.	Algebra.	French	French.	Geography.
		Recess.			
1·30 to 2·20	Geometry.	History.	History.	Geography.	Geometry.
2·20 to 3·10	Geography.	Geometry.	Geometry.	English.	History.
3·10 to 4	French.	French.	French.	French.	French.

SCOPE OF WORK FOR UNIVERSITY SENIOR CLASS.

History.—European—From 1789 to present time. Ancient History of Greece from B.C. 510 to 404. Ancient History of Rome from B.C. 133 to 31.
English.—Structure of words and origin of language. Study of work of specified author. Outlines of English literature.
French.—Study of specified works, with composition, grammar, and translation of passages at sight.
Latin.—Study of specified works, with composition, grammar, and translation of passages at sight.
Arithmetic.—Whole theory and practice, including mensuration.
lgebra.—Including the three progressions, binomial theorem for positive index, and properties and use of logarithms.
Euclid.—Euclid Elements, Book I, II, III, IV, VI, XI (Problems 1 to 21) with deductions.
Plane Trigonometry.—Up to solution of triangles, De Moivre's theorem, limits, and simple series.
Mechanics.—Elements of statics and dynamics.
Applied Mechanics.—Mechanical powers with combinations, simple mechanisms, water power and strength of beams.

SUBJECTS OF STUDY OF PUBLIC SERVICE EXAMINATION CLASS.

Clerical Division.

Compulsory.

(1) Handwriting.—As valued for neatness, simplicity, and legibility; judged in answers to examination papers of dictation and arithmetic.
(2) Dictation.
(3) English.—Composition, précis-writing, and letter-writing.
(4) Arithmetic.—The full course, such as is usually contained in a standard treatise.
(5) Geometry.—Euclid, Book I, including easy exercises.
(6) Geography.—Outlines of physical and political geography, and the geography of the Australasian Colonies in moderate detail.
(7) English History.—From the middle of the 18th Century to the present time, especially with reference to the Colonies and Dependencies.

Optional subjects (two only to be taken).

(*a*) Mathematics.—Euclid Books II to IV and VI, including easy exercises on these Books and Book I. Algebra up to and including quadratic equations.
(*b*) English.—A prescribed author, the same as that examined at the Junior Examination of the current year. (Richard II.)
(*c*) French.—Including easy translation, easy composition, and grammar.
(*d*) Elementary Geology.—The elements of physical geography and geology.

Professional Division.

Compulsory.

(1) Handwriting.—As in Clerical Division.
(2) Dictation.— ,,
(3) English.— ,,
(4) Geography.— ,,
(5) Arithmetic.— ,, and in addition, elements of mensuration.
(6) Algebra.—Up to and including quadratic equations, together with the theory of indices and the use and properties of logarithms.
(7) Geometry.—Euclid Books I to IV and VI, with easy deductions.
(8) Plane Trigonometry.—Up to and including solution of triangles.

Optional subjects (two only t be ken).

(*a*) English Author.—As in Clerical Division.
(*b*) French.— ,,
(*c*) Geology.— ,,

SCOPE OF WORK FOR UNIVERSITY JUNIOR CLASSES.

English History.—General outlines from 1485 to present time, and special period for more detailed study.
Geography.—Knowledge of situation of principal towns of world, trade winds and ocean currents, and chief physical features of all countries.
English.—Language generally, and a special author for detailed study.
French.—Study of work of special author, with composition, grammar, and translation of passages at sight.
Latin.—Study of work of special author, with composition, grammar, and translation of passages at sight.
Arithmetic.—Whole theory and practice, including the elements of mensuration,
Algebra.—Up to quadratic equations of two or more unknown quantities, ratio, proportion, fractional indices and surds.
Geometry.—Three books of Euclid, with deductions.

SYNOPSIS OF TIME-TABLE, PETERSHAM SUPERIOR PUBLIC BOYS' SCHOOL.

TOTAL NUMBER OF HOURS PER WEEK.

Subjects.	Public Service Class.	Commercial.		High School (preparatory).	—
		Upper.	Lower.		
	V D.	V C.	V B.	V A.	IV B.
Arithmetic	4½	5	5	4	4
Mental Arithmetic	.....	1¼	1¼	1	1
Mensuration	.....	¾	¾	¾	.....
Geometry	5½	3	2½	3	2½
Algebra	3¼	2	2	2¼	2½
Writing	.....	.....	.....	¼	¾
Latin	.....	.....	.....	2	2
French	.....	.....	.....	2	3½
Reading	.....	.....	.....	.....	2¼
English (author)	3¾	3¾	3¾	1½	.....
Do (composition)	2½	1½	1½	1½	1
Do (grammar)	.....	.....	.....	2	1½
Dictation	1	1¾	2¾	2	2¼
Science	.....	1½	1½	1½	1½
History	[1]A 1 / [2]E 2½	1 / 2½	1 / 2½	1½	1¾
Geography	3¾	3¼	3¼	1½	1¾
Do (physical)	1	.....	.....	.....	.....
Drawing	.....	1	1	1¼	1½
	28¾	28¾	28¾	28¾	28¾

NOTE.—French introduced into V A and IV B will be continued next and following years in V B, V C, V D, and form one of the subjects taken for Commercial and Public Service Examinations. Physics similarly will be an examination subject when sufficient progress has been made. [1] A = Australian. [2] E = English.

GENERAL

GENERAL TIME-TABLE—CLASSES V D, V C, V B—SUPERIOR PUBLIC SCHOOL, PETERSHAM (BOYS).

	Monday.			Tuesday.			Wednesday.			Thursday.			Friday.		
	V D.	V C.	V B.	V D.	V C.	V B.	V D.	V C.	V B.	V D.	V C.	V B.	V D.	V C.	V B.
9 to 9·30	Geog. / Arith.	Arith.	Arith.	Geog.	Long Tots.	Long Tots.	Geog.	Geog.	Geog.	Geog. / Arith.	Arith.	Arith.	Geog.	Geog.	Geog.
9·30 to 11				Hist.	Hist.	Hist.	Eng.	Eng.	Eng.				Arith.	Dictn. Ml. Ar.	Dictn. Ml. Ar.
11·15 to 12·30	Author.	Author.	Author.	Arith.	Mens. Ml. Ar.	Mens. Ml. Ar.	Author.	Author.	Author.	Geog.	Geog.	Geog.	Author.	Author.	Author.
1·30 to 2	Geom.	Geog.	Geog.	Geom.	Geog.	Geog.	Geom.	Geom.	Geom.	Geom. / Phys. Geog.	Science.	Science.	Geom.	Geom.	Geom.
2 to 3	Dictn.	Dictn.	Dictn.	Alg.	Geom.	Alg.	Geom.	Geom.	Dict.				Compn.	Geom.	Drwg.
3 to 4	Hist. of Aust.	Hist. of Aust.	Hist. of Aust.	Geom.	Alg.	Geom.	Hist.	Hist.	Hist.	Alg.	Alg.	Alg.	Geom.	Drwg.	Geom.

GENERAL TIME-TABLE—CLASSES V A AND IV B (BOYS).

	Monday.		Tuesday.		Wednesday.		Thursday.		Friday.	
	V A.	IV B.	V A.	IV B.	V A.	IV B.	V A.	IV B.	V A.	IV B.
9 to 9·30	French.	Latin.	Ml. Arith.	Geom.	Menstn. (¾ hour)	Algebra.	Geom.	Geom.	Geom.	Arith.
9·30 to 10·15	Writing.	Reading.	History.	Arith.	Latin (1¼ hour).	Latin.	Latin.	Dictn.	Algebra.	Aust. Hist.
10·15 to 11	Arith.	Geom.	Geog.	Dictn.		Arith.	Arith.	Reading.	Science.	Science.
11·15 to 12	Words for Compn.	Drawg.	Eng. Author.	French.	Dictn.	Writing.	Eng. Author.	Arith.	Geog.	Dictn.
12 to 12·30	Arith.	Geog.	French.	Ml. Arith.	Algebra.	Compn.	French.	Compn.	Ml. Arith.	Geog.
1·30 to 2	Gram.	Arith.	Gram.	History.	Gram.	Gram.	Gram.	French.	French.	Algebra.
2 to 2·45	Science.	Science.	Geom. (1 hour).	French.	Compn. (oral).	Geog.	Geom. (1 hour).	Drawing.	Drawing.	Reading.
2·45 to 3·30	Dictn.	Geom.		Algebra.	History.	Algebra.		Latin.	Drawing.	Arith.
3·30 to 4	Arith.	French.	Alg. (1 hour).	Gram.	Comp. (written.	History.	Arith. (1 hour).	Ml. Arith.	Dictn.	Gram.

STANDARDS OF WORK.

Public Service Class or V D.

Arithmetic.—The full course, such as is usually contained in a standard treatise.
Geometry.—Euclid, Books I, II, III, IV, VI, and deductions thereon. Hall and Stevens' Euclid.
Algebra.—Up to and including quadratic equations of one or two unknowns, fractional indices and surds.
English Author.—Richard II. To understand the subject matter, grammar, metre, etc., of the play. The history of the time—the characters (1) as portrayed by Shakespeare, (2) as they existed according to historians.
English.—Composition of essays (1) from headings supplied, (2) on subjects of general interest. Précis-writing—condensation of (1) historical extracts, (2) letters, (3) series of letters.
Dictation.—Difficult extracts from standard authors.
Letter-writing.—Official letters from Government Departments to civic correspondents, etc.
Geography.—General knowledge of the world, and a detailed knowledge of the colonies of Australasia. General knowledge of physical geography from elementary work, such as Davis' "Physical Geography."
History.—History of Australasia, as per Jose's "Short History of Australia." History of the Empire—Jose's "Growth of the Empire." History of England—Angus and Robertson's School Histories, Part VI, and Oman's "England in the Nineteenth Century."

Upper Commercial Class or V C.

Arithmetic.—Long tots and mental arithmetic as set for the Junior Certificates of the Sydney Chamber of Commerce: Decimal arithmetic, the metric system, conversion of foreign weights and measures into their English equivalents, conversion of foreign money into their English equivalents, contracted multiplication and division and use of approximations. Profit and loss. Alligation. Dealings in shares.
Mensuration.—Areas of surfaces and contents of regular solids as far as required in ordinary business calculations.
Algebra.—Up to and including simple equations of one, two, or three unknowns. Easy problems involving the same. Factors and fractions.
Geometry.—Euclid, Books I, II, III. Exercises on Book I and easy deductions on Book II.
English Author.—Shakespeare's Richard II in conjunction with Public Service Class.
English.—Composition of essays (1) from headings supplied, (2) on subjects of general interest. Précis-writing—condensation of (1) historical extracts, (2) lengthy business communications.
Dictation.—Difficult extracts from daily papers or monthly magazines. Letter-writing—business letters in answer to customers, prepared for the signature of the head of the firm.
Geography.—The commercial aspects and peculiarities of different countries. Their products, manufactures, and extent and nature of their trade. Special attention to Australasia.
History.—History of Australasia with V D. History of England from 1750 to present time, with special study of commercial and industrial history. (Text-book, "British Commerce and Colonies," Gibbins.)
Drawing.—Model drawing, as required for the Junior Certificate of the Sydney Chamber of Commerce, to draw from a model some article or piece of machinery, and describe the same, for the purpose of ordering a similar object from London.

Lower Commercial Class or V B.

Arithmetic.—Long tots and mental arithmetic as set for the Junior Certificate of the Sydney Chamber of Commerce: Decimal arithmetic, the metric system, conversion of foreign weights and measures into their English equivalents, conversion of foreign moneys into their English equivalents, contracted multiplication and division.
Mensuration.—Areas of surfaces as far as required in ordinary business calculations.
Algebra.—Up to and including simple equations of one unknown. Easy problems involving the same. Factors and easy fractions.
Geometry.—Euclid, Books I and II. Exercises on Book I (Hall and Steven).
English Author.—George and Sidgwick's "Poems of England." Subject matter, meanings and derivations of difficult words, parsing and analysis of difficult passages, prosody, recitation of beautiful or stirring passages.
English.—Easy essays. Condensation of passages and letters.
Dictation.—Difficult extracts from daily papers or monthly magazines. Letter-writing—formal business letters.
Geography.—In conjunction with V C.
History.—In conjunction with V C.
Drawing.—In conjunction with V C.

Class V A.

Arithmetic (Lock, Hargreaves, Loney).—Compound interest, finding interest, amount, time, rate; profit and loss. Metric system (complete). General practice in previous work—decimals, fractions, proportion, practice, L.C.M., etc.
Mensuration.—Areas of surfaces, papering, carpeting, paving, etc.
Mental Arithmetic.—Percentages, profit and loss, decimalisation of money, metric system, decimals. Practice in previous work.
Geometry.—Book I (Hall and Steven)—associated with practical geometry—constant application to deductions.
Algebra (Hamblin Smith).—First four rules, factors, simple equations. H.C.F. (by detached co-efficients).
Writing.—Chamber's Government hand.
Latin.—Via Latina, to exercise twenty-two.
French.—Macmillan's progressive French course, first year. Mrs. Boyd's "Causeries Familières."
English.—Richard II. Subject matter; parsing and analysis; prosody.
Composition.—Dalgleish's composition, Meiklejohn's "Art of Writing."
English.—Imitative model passages from authors—R. L. Stevenson, etc.—to be reproduced. Constructive essays on subject of general interest.
Dictation.—Unseen passages as from daily press.
Science.—Elementary physics (experimental). Deducing principles.
History.—Angus and Robertson's History, Part VI, William III to George III, inclusive.
Geography (commercial).—Trade routes, products, forms of government, industrial centres.
Drawing.—Free-arm, ambidextrous, and brushwork.

Class IV B.

Arithmetic (Lock, Hargreaves, Loney).—Vulgar fractions and decimals. Simple interest, finding interest, amoun principal, rate, time.
Mensuration of surfaces, walls, floors, &c. Metric system (length and surface).
Mental Arithmetic.—Vulgar fractions, decimals, interest, metric system. Practice in past work.
Geometry.—A school geometry (Hall and Steven), 1903. Definitions, etc., theorems 1 to 7, and problems 1 to 8. Exercises on theorems 1 to 7.
Algebra.—Addition, subtraction, multiplication, evaluation.
Writing.—Chamber's Government hand.
Latin.—Via Latina, first declension.
French.—Macmillan's progressive French course, first year to Exercise XV.
Reading.—Australian Reading Book, Reader V.
Composition.—Rearranging sentences; use of words, etc. Short essays on subjects of interest.
Grammar.—Parsing and analysis of ordinary passages. Practical instruction in accidence and syntax.
Dictation.—Unseen passages of ordinary prose, and words previously given.
Science.—Physics, elementary (experimental). Deducing principles.
History.—Biographies, from Angus and Robertson's Part VI.
Geography.—Africa in outline. Latitude and longtitude. Day and night. Zones.
Drawing.—Free-arm and ambidextrous.

SYNOPSIS OF TIME-TABLE AND COURSE OF STUDY, CLEVELAND-STREET SUPERIOR PUBLIC SCHOOL (BOYS).

Subject.	A (1) Public Service.	A (2) Classical.	B Commercial.	C Junior University.
Arithmetic (full course as in Lock)	5¼	5	5	5¾
Algebra to quadratics, surds, and proportion	4¾	2¾	.....	5¼
Geometry—Books I, II, III, with deductions	1¾	3	.....	4
Geometry—Books IV–VI, with deductions	2	.....	.....	.....
English Author (Richard II)	2¾	.....	.....	3¼
Grammar and General English	1	1	3	1½
Composition	1	1	2	2
Dictation	1½	1½	1	1
Reading	.....	.....	2	.....
Writing	1	1½	2¼	1
Drawing (Model and Freehand)	.....	.....	2½	.....
English History	4¼	.....	4¾	2¾
Geography—Political, Commercial, and Physical	4	.....	5	3
Physics—Heat, Light, Sound	.....	.....	.....	1½
Précis Writing and Indexing	1¾	.....	2	.....
French	.....	4	.....	.....
Latin	.....	4	.....	.....
German	.....	2½	.....	.....
Greek	.....	2½	.....	.....
Roman History	.....	¾	.....	.....
Greek History	.....	1	.....	.....
Hours per week	31	30½	29½	31

REMARKS.

The times are from 9 to 12·30 and from 1·30 to 4 Monday to Friday, 9 to 12 Saturday.

The Classical Section of Fifth A take Greek and German from 8 to 9 a.m. on Monday, Wednesday, and Friday, and from 10 a.m. to 12 noon on Saturday.

Special work for Fifth Class A (2)—Classical.

French.—McMillan's Courses I and II—Primer of Composition "Au Pôle en Ballon" (Patrice).

Précis of continuous prose composition other than Primer.

Latin.—Via Latina to the end. De Amicitia (Cicero)—Précis of unseen prose composition.

German.—Otto's German Grammar—"Herman der Cherusker" (Goebel).

Greek.—"Hellenica," Book II (Xenophon). North and Hillard's Greek Prose Composition.

Note.—Reading is included with English author when not specially noted.

Writing is taken into consideration in all written work, so that the time set down for it might at the very least be trebled.

GENERAL TIME-TABLE FOR FIFTH CLASSES (BOYS)—SUPERIOR PUBLIC SCHOOL, CLEVELAND-STREET, SYDNEY.

	Monday.				Tuesday.				Wednesday.			
	A (1).	A (2).	B.	C.	A (1).	A (2).	B.	C.	A (1).	A (2).	B.	C.
8 to 9	.....	Greek and German.	.....	.....	.....	.....	.....	.....	.....	Greek and German.	.....	.....
9 to 10	English History.	Arithmetic.	Reading.	Grammar.	History (Jose)	Composition.	Writing.	Writing.	Arithmetic.	General English.	Reading.	Composition.
10 to 11	Arithmetic.	Arithmetic.	Geography.	Algebra.	Algebra.	Algebra.	Commercial Geography.	Special History.*	Précis and Indexing.	Arithmetic.	Composition.	English Author.
11·15 to 12	Précis and Indexing.	Geometry.	Arithmetic.	English Author.	Geometry.	Geometry.	Arithmetic.	Algebra.	English Author.	Roman History.	Arithmetic.	Arithmetic.
12 to 12·30	Geometry.	Dictation.	Commercial History.	Arithmetic.	Dictation.	Dictation.	Dictation.	Dictation.	Geometry.	Geometry.	Commercial History.	Physics.
12·30 to 1·30	.....	.....	.....	Recess for Dinner.				.....	.....	.....	.....	.....
1·30 to 2	Grammar.	.....	English.	Geography.	Writing.	.....	Australian History.	English Author.	Grammar.	.....	English.	.....
2 to 3	Arithmetic.	French.	English History.	Composition.	English Author.	French.	Composition.	Geometry.	Algebra.	Algebra.	Geography.	Algebra.
3 to 4	Geography.	Latin.	Précis and Commercial Correspondence.	Physics.	Algebra.	Latin.	Commercial History.	Arithmetic.	Geography.	Latin.	Commercial Forms.	Geography.

	Thursday.				Friday.				Saturday.			
	A (1).	A (2).	B.	C.	A (1).	A (2).	B.	C.	A (1).	A (2).	B.	C.
8 to 9	.....	.....	.....	.....	.....	Greek and German.	.....	.....	.....	.....	.....	.....
9 to 10	Arithmetic.	Arithmetic.	English.	Arithmetic.	History (Jose)	Writing.	Arithmetic.	Geography.	Algebra	French Conversation.	.....	Arithmetic.
10 to 11	Composition.	Greek History.	Commercial Geography.	Special History.*	Geometry.	Arithmetic.	Geography.	Arithmetic.	Geography.	German.	.....	Geometry
11·15 to 12	Algebra.	Algebra.	History.	Algebra.	Written Examination.	Written Examination.	Writing.	History.	Arithmetic.	Greek.	.....	Algebra.
12 to 12·30	Dictation.	Dictation.	Dictation.	Dictation.			Writing.	Geometry.	Dictation.	.....	.....	.....
12·30 to 1·30	.....	.....	.....		Recess for Dinner.			.....	.....	.....	.....	.....
1·30 to 2	Writing.	Writing.	Model and Freehand Drawing at the Technical College.	Grammar.	Arithmetic.	.....	Australian History.	Algebra.	.....	.....	.....	.....
2 to 3	Geometry.	Geometry.		Geometry.	English Author.	French.	Arithmetic.	English Author.	.....	.....	.....	.....
3 to 3	History.	Latin.		Algebra.	Geography.	Latin.	English.	Mapping and Written Geometry alternate weeks	.....	.....	.....	.....

Fifth A (1).—Public Service Class. Fifth A (2).—Matriculation Class. Fifth B.—Commercial Class. Fifth C (University).—Junior Class. * Puritan Revolutio

CHAPTER XV.

Ethical and Religious Instruction and Education.

[G. H. KNIBBS.]

1. *The significance of morals in an educational system.*—No one who has given the slightest degree of attention to the ethical aspect of education has failed to be profoundly impressed with its significance. Whether for the individual or for the State, the great question must ever be, not merely "what are the children to know," or "what technical skill are they to develope," but "in what spirit are the acquired knowledge and skill to be used in after life." Whether authorities admit that the teaching of religion is desirable or not, there is an absolute consensus of opinion that all education must be grounded in the ethical bases of our being. Integrity of character, and a courteous bearing, are things of light moment only to the thoughtless; they are in reality among the great factors of national development. Rectitude, fortitude, courage, patience, veracity, kindliness, and politeness, are graces that no educationist dare neglect to systematically consider, and it is as much a part of pædagogic duty to attend to these as to the purely intellectual elements of education. There can be no doubt that the exigencies of everyday-life in the school, and *the routine of the daily school-tasks, lend themselves to an unobtrusive moral education that is none the less real because it is not didactic.* There can be little doubt also that much of the most powerful moral stimulus is that which asserts itself unperceived. Doubtless too, the high ideals that tincture the mind, that give their colour to each and every effort of a teacher, are the real, or are among the most real, factors involved in the growth of character in the pupils. *The tone of the master inevitably affects that of the pupil.*

However much may be done by maintaining a due regard to the tone and traditions of a school, it is recognised by all educationists that *specific moral instruction* is absolutely requisite, and it is also very widely believed that unless this is founded on a religious basis it will be inadequate. It was incumbent on the Commissioners, therefore, to at least observe the attitude of the various scholastic authorities in the countries through which they travelled to this momentous question. This attitude, as regards the religious side of the question, naturally presents different aspects, but as above stated, the conviction that an educational system must take serious account of the moral element is universal. It alone possesses the necessary unifying and controlling influence.

It has been pointed out in a previous chapter, that in the infant-schools of Geneva, a large part of the instruction of children of from three to five years of age consists of simple little stories, the whole purpose of which is to awaken the moral sense of the little ones in a healthy kind of way, and to establish them in good habits. And from five to seven the conversations are designed to develope in them the feelings of affection, to arouse the conscience, and to create a love of work and of duty. What is of still greater interest is, however, that the text of other lessons is to be drawn from these little stories, so as to "give a certain unity to the instruction," viz., through its ethical element. In some form or other it is, as far as the Commissioners could judge, universally held that the unifying principle of education should inhere in this element. It is also very significant that the great personalities in the history of pædagogy have been men who were profoundly affected with this view. And it may be mentioned in this connection that the tremendous stimulus which is derivable from a study of this history is mainly due to the fact that their splendid labours were inspired by high ideals, viz., their lives and work were founded on ethical bases.

What is significant for the pupil, must be significant also for the teacher. One of the most serious defects of the pupil-teacher system is that the instructor enters on his work before he has any sufficient conception of its serious nature, and before he has been made cognisant of the history, philosophy, and psychology of the world's pædagogic effort. With any person having the natural qualification for a teacher, such knowledge completely transforms the mind, and keeps alive what is absolutely necessary, an effort which rises above perfunctoriness. Wherever the moral interest of the teacher was keen, there was unmistakable evidences of the results upon the children, and this is true of every country visited by the Commissioners. Perfunctory teaching fails to embrace the highest elements and consequently all teachers must be capable of appreciating the higher view of their work. For pupil and teacher alike, therefore, the subject of this chapter is important.

2. *Moral and religious instruction of New South Wales.*—By the Public Instruction Act of 16th April, 1880, 43 Victoria No. 23, Section 17, it is enacted that:—

"In every public school four hours during each school-day shall be devoted to secular instruction exclusively, and a portion of each day not more than one hour shall be set apart when the children of any one religious persuasion may be instructed by the clergyman or other religious teacher of such persuasion; but in all cases the pupils receiving such religious instruction shall be separated from the other pupils of the school. And the hour during which such religious instruction may be given shall be fixed by mutual agreement between the Public School Board in consultation with the teacher of such school and the clergyman of the district or such other person as may be duly authorised to act in his stead, and any class-room of any public school may be used for such religious instruction by like agreement. Provided that if two or more clergymen of different persuasions desire to give religious instruction at any school, the children of each such different persuasion shall be so instructed on different days. Provided also that the religious instruction to be so given, shall in every case be the religious instruction authorised by the Church to which the clergyman or other religious teacher may belong. Provided further that in case of the non-attendance of any clergyman or religious teacher during any portion of the period agreed to be set apart for religious instruction such period shall be devoted to the ordinary secular instruction in such school."

In order to cover conscientious objections to religious instruction Section 18 provides that:—

"Notwithstanding anything to the contrary in the last preceding section no pupil in a public school shall be required to receive any general or special religious instruction if the parents or guardians of such pupil object to such religious instruction being given."

Since

Since the educational system of a State, in which there is no recognised State Church, must perforce avoid the introduction into the general curriculum of the tenets of any particular denomination, the same Act enacts in Section 7 that:—

"In all schools under this Act the teaching shall be strictly non-sectarian *but the words 'secular instruction' shall be held to include general religious teaching as distinguished from dogmatical or polemical theology*, and lessons in the history of England and in the history of Australia shall form part of the course of secular instruction."

The general religious teaching in the state schools of New South Wales is placed on exactly the same footing as any other subject. So far is this true that at the customary annual inspection of the schools failure of a class to reach the departmental standard in "Scripture" would be regarded under the system of the state as evidence against the efficiency of the teacher, just as success would tell in his favour in that respect. In the junior classes, when children are unable to read, all lessons are given orally in the form of lectures, and generally cover a complete course of Old and New Testament history. In classes above the second the Irish National Board Scripture-lesson books are regularly read. The standards, pages 34 to 43, under the heading "Scripture," shew how the lessons are distributed.

All teachers, irrespective of the denomination to which they belong, are required to teach these Scripture lessons, and the Commissioners are informed that in no case has any refusal to do so taken place, nor has there, so far as they are aware, ever been a complaint that the lessons have been otherwise than reverently given.

It is enacted by Regulation 109 of 30th June, 1898, "that nothing must ever be said or done by any teacher, in a pupil's hearing or presence, calculated to offned the religious views of that pupil, or of any other in the school, or of the parents of any pupil." There is no doubt that this regulation is on the whole respected.

Regulations 117 and 118 prescribe that:—

117. No pupil is to be required to receive special religious instruction if the parents or guardians of such pupil object to such religious instruction being given.

118. Where any parent or guardian objects to a pupil receiving the general religious instruction prescribed in the course of instruction, notification to this effect shall be made to the teacher *in writing*, who shall thereupon exempt such pupil.

The Commissioners are informed that as a matter of fact notifications under Regulation 118 are so rare that for statistical purposes they may be said to be non-existent.

The outcome of such instruction is that the pupils of the state schools receive some degree of knowledge of Biblical history, and incidentally are made acquainted with the moral teaching of the Bible.

With the view of obtaining a wide expression of opinion upon the question as to whether the Irish National Board Scripture lessons are advantageous in promoting the moral and intellectual education of the pupils in schools of the State, a circular was addressed to all school inspectors under the Department of Public Instruction requesting them to state their views upon the matter. A large majority of these officers declared that, in their opinion, the Scripture lessons are calculated to exercise a beneficial effect upon the pupils, both morally and intellectually. The following extracts from the report of one of the most experienced inspectors may be taken as representing the Departmental conception of the value of the lessons:—

"In cases where teachers deal with the books as they would with ordinary class books, giving an intelligent exposition of the subject-matter of the lessons, testing by examination to what extent the pupils comprehend its scope and meaning, and dwelling with judicious force and impressiveness upon such points of religion and morals as these lessons inculcate, there can be no doubt whatever of the benefits accruing. I believe that, in about 50 per cent. of our schools, these lessons have been so treated."

The special religious instruction by any recognised clergyman, or other teacher duly authorised by his church, may consist of religious worship and purely denominational teaching. It is, as above indicated, given during school hours; and it has been found that where two or more clergymen of different denominations desire to give such instruction the parties concerned have been so far able to make all necessary arrangements. It is rare that a teacher of special religious instruction desires to visit more than once a week.

So far as can be ascertained there seem to be no denominational difficulties arising from the provisions for special and general religious instruction. The system has for many years formed a regular part of the school routine, and there is no evidence that parents would prefer a change, at least in the direction of giving less religious teaching.

In order to safeguard children of one denomination against the influence of the special tenets of any other, Regulation 119 provides that—

119. The teacher in all schools under the superintendence of the Minister shall see that the religious books employed in the classes for special religious instruction are confined to the time and place of such instruction, and not left in the way of children whose parents may object to them.

It may be observed that, according to Section 17 of the Public Instruction Act, it would appear from the first part that any clergyman might appropriate one hour *every day* for religious instruction in the tenets of his denomination; but the provision that when "two or more clergymen of different persuasions desire to give religious instruction . . . . the children of each such different persuasion shall be so instructed on different days" certainly implies some, but an indefinite, limitation of such a right. Regulation 111 prescribes that the hour from 9·30 to 10·30 shall be devoted to special religious instruction, but that when no special religious teacher is present the time shall be devoted to ordinary school work.

It must be admitted that the clergy of various denominations have availed themselves of this provision only to a limited extent, and, speaking generally, the religious instruction in the State of New South Wales is, so far as the State schools are concerned, largely confined to the general religious instruction above referred to. Clearly, under section 17, it would have been possible in almost all schools throughout the State for any denomination to have obtained in most cases several hours a week for the purpose of instructing pupils belonging to their denomination. Consistently with the Act, it is possible for two denominations to appropriate (on an average) one hour on two and a half days per week, or for three denominations to get one hour, on an average, on one and two-thirds days per week, and so on. Such an encroachment on the already very limited time devoted to ordinary instruction in this State, as compared to the time devoted in Europe, would be serious. Owing to the fact, however, that the religious bodies have not availed themselves of their opportunities of special religious instruction, this question has never yet arisen for practical settlement.

In

In the instructions to teachers, which are said to have equal force with the Regulations under the Act, it is prescribed in No. 34 that "no sectarian or denominational publications of any kind shall be used in school, nor shall any denominational or sectarian doctrines be inculcated"; and in Instruction No. 35, it is declared that "it shall be the duty of all teachers to impress on the minds of their pupils the principles of morality, truth, justice, and patriotism; to teach them to avoid idleness, profanity, and falsehood; to instruct them in the principles of a free government; and to train them up to a true comprehension of the rights, duties, and dignity of citizenship." Undoubtedly this last direction, liberally interpreted, covers a very wide range, and is in fact as comprehensive as might be desired; but the interpretation of the instruction is apparently left to the individual teacher, and the mode of carrying it into execution has not been systematically developed. In the absence of any developed system of lectures on these subjects during the training of teachers, this is, in the opinion of the Commissioners, unsatisfactory.

In the kindergarten teaching in this State, the moral elements undoubtedly receive considerable attention, both in the State schools and in the private schools, as well as in the subsidised kindergarten, as it was very gratifying to observe, where kindergarten was seen by the Commissioners, that the moral element in the teaching had undoubtedly produced a favourable transformation in the manners of the little pupils. As previously observed, kindergarten in the State schools is not kindergarten in a European sense, but belongs rather to the transition period between the kindergarten proper and the primary school. What has been already achieved in the improvement of the manners of the little children is a splendid testimony as to the inestimable value of kindergarten teaching; and it promises well for the future of the State if such type of teaching be extended. This is much to be desired, for one cannot fail to be struck with the amiable and polite manners, and the respect of authority, which is to be found among almost all European children.

3. *Moral Education in France.*—As is well known, the public instruction system of France aims at being absolutely secular. The conceptions of moral education of that country might appear to stand therefore at the opposite pole to that which marks what might be called the purely religious conception of moral development; and to that of countries which base their system upon what is known as a revealed religion. France, therefore, and its experience, must have for everyone who attempts anything like an impartial consideration of the question of moral education, special interest.

The International Jury of the "Exposition Universelle Internationale" of 1900 awarded its "Grand Prix" to the primary public schools of France for their teaching in morals. It has already been mentioned in the chapter on kindergarten teaching that the fundamental idea of French moral education is "to fortify and to ground in the soul of the pupil for life, those essential notions of human morality which are common to every doctrine and to all civilised men, and this to be done by daily exercise."[1] They aim at "causing to grow and at developing in every child a horror of all that is low and vile and an admiration of what is noble and generous," at giving it a "clear idea and feeling of good and evil," at "cultivating benevolent emotions," at awakening in the soul "a love of liberty and of country."[2]

The attempt to establish the whole national education in morals on substantially an ethical foundation had its origin in the effort of the Government to vindicate itself against the charge that their supposed purely secular system led to godlessness and immorality, and was responsible for an increase in juvenile crime which was alleged to exist. M. Jules Ferry vigorously affirmed that he intended to make these schools satisfactory ethically, and when created Minister for Public Instruction in 1879, he at once appointed M. Buisson as Director of Primary Education, establishing also in the same year the normal school at Fontenay-aux-Roses to prepare teachers for the primary normal schools for women. This he placed in the charge of M. Pécaut. Shortly after M. Ferry placed M. Marion in the Chair of Pædagogy at Sorbonne. The distinguished reputation of these three appointees as masters of ethical doctrine compelled general recognition of the earnestness of the Government.

The following statistics as to the frequency of juvenile crime, though not conclusive in themselves with regard to any particular deduction as to the influence of education, or as to the effect of the introduction of purely ethical instead of religious teaching, are worthy of note. It ought to be mentioned that the State secular schools were not thoroughly organised until the year 1886, and could hardly be accounted as an efficient factor in national tendency until five or six years later at least.

The report published in 1889 relating to criminal statistics gives results up to the year 1896. These are as follows:—

Year.	1866.	1876.	1886.	1892.	1893.	1894.	1895.	1896.
Accused under 16, Males	29	30	23	24	24	29	19	17
,, ,, Females	15	16	4	11	3	3	6	6
Accused 16 to 21, Males	637	686	535	541	601	558	465	477
,, ,, Females	95	129	106	111	79	115	89	72

Minors, brought before what are called "Correctional Tribunals," corresponding practically to our Police Courts, charged therefore only with minor offences, shew for the period 1892–1896 also a somewhat similar decrease, as is evident from the table hereunder:—

Year.	1892.	1893.	1894.	1895.	1896.
Males under 16	6,118	5,719	5,967	5,680	5,635
Females under 16	1,030	981	934	960	938
Males 16 to 21	27,744	28,350	28,701	27,261	27,044
Females 16 to 21	3,479	3,532	3,616	3,502	3,366

The total number of convictions for the years 1872–1876 for criminal offences was 17,811, while for the period 1892–1896 it had fallen to 13,154.

4.

[1] M. Jules Ferry. [2] M. L. Bourgeois.

4. *Scheme of Moral Instruction in Primary Schools in France.*—The following synopsis will give a practically complete idea of the official conception of what is necessary by way of specific moral instruction in the primary schools of France:—

(*a*) *General Idea.*—The moral instruction is intended to complete and ennoble the general instruction of the school. Other branches tend to develope special aptitude or to increase knowledge; this, on the contrary, tends to develope the man himself, viz., his heart, his higher intelligence, and his conscience. Moral education, therefore, stands on a different plane from instruction in general subjects. It depends less upon precision and logical relation of the truths inculcated than upon intensity of feeling, vividness of impression, contagious ardour of conviction. It aims at evoking the will rather than the intellect; it governs action through feeling rather than through reasoning, and seeks to establish such habits of thought, feeling, and action as will favourably tincture the whole life.

(*b*) *The Function of the Teacher.*—In a democratic and secular society, it is important that all members should be early initiated by ineffaceable lessons into a sense of their dignity and of their personal responsibility. The teacher, regarded as the representative of society, must, assuming that the children have from some source at least an idea of good and evil, take this and also any conceptions they have of God, of a Christian or other religion, as a basis on which he is to operate. He is, as previously stated, to fortify and to enroot in their mind through daily practice those essential notions of morality common to civilised humanity. He is to do this without conflicting in any way with the ideas that they have obtained from their parents and others, making it his care that they shall derive that which, it is alleged, is most precious from the social standpoint, the precepts of a high morality. It will be seen, therefore, that his mission is subject to certain limitations, which need not be more fully specified.

(*c*) *Objects and Limits of Instruction.*—It is required that the teacher shall take care that the teaching be distinguished from religious instruction, without contradicting it. He is to insist upon the duties which tend to unite men rather than upon the dogmas which tend to separate them; and he should aim at making the children pass through as it were an apprenticeship in moral life. If in later life they become separated through dogmatic opinion, they will at least be in agreement in having life's aim as high as possible, and in having a similar horror for what is base and vile, a similar sensitive appreciation of duty, and of aspiration after moral perfection; they will be united in fealty to the good, the beautiful, and the true, which is a form, and one of the purest, of the religious sentiment.

(*d*) It is required that the character and conduct of the teacher should constitute a powerful stimulus through example, realising that in moral education that which does not come from, does not go into, the heart. *The teacher who recites precepts and speaks of duty without warmth and conviction does worse than waste the time of his pupils: he does wrong*; for a course of moral doctrine, cold, common-place, and dry neither teaches morals nor awakens moral feeling. The simplest recital in which the child can perceive the accent of seriousness, a single sincere word, is of higher value than any series of mechanical lessons however good. The teacher is required to carefully avoid any reflection, either by language or expression, on the religious beliefs of the children; and he must not in any way betray lack of respect or of due regard for the opinions of others. He is expected to watch in a practical and paternal manner the moral development of the scholars with the same solicitude which he should have for their progress in general instruction, regarding himself responsible as much for the education of their characters as for that of their intellects. At this price alone will, it is said, the teacher have merited the title of educator, and elementary instruction deserve the name of liberal education.

The detailed programme is developed as follows:—

Infant-section, age 5–7 years.—Simple little conversations, entering into all the class-exercises and the recreation. Simple poems, explained and learnt by heart; stories and songs. It may be mentioned that the greatest care is taken in the selection of the poems and songs. Special care is also to be taken by the teacher in regard to children shewing any particular defect in character or a vicious tendency.

Primary-section, age 7–9 years.—Familiar conversation, and reading containing examples, precepts and allegory. Practical exercises tending to develope moral activity in class—1. By observation of individual character, gentle correction of faults, development of good qualities. 2. By intelligent appreciation of school discipline as a means of education. 3. By appealing to the feelings and moral judgment of the child. 4. By correction of vulgar notions, prejudices, and superstitions. 5. By instruction drawn from facts observed by the pupils themselves.

Intermediate-section, age 9–11 years.—Familiar conversation; illustrative examples with comment; practical exercises as in preceding section more developed as to method and precision. The following conception of duty is developed methodically:—

I. (*a*) Child in family—duty toward parents and grand-parents; obedience; respect, love, recognition; aiding parents in work; tending in sickness; caring-for in old age. Duties of brothers and sisters—mutual love, watchful care of elder over younger; effect of example. Duties towards servants—to treat them with politeness and kindness.

(*b*) Child in school—earnestness, docility, industry, civility, duty toward teacher and toward comrades.

(*c*) Country—grandeur and misfortunes of France; duty toward country and society.

The treatment of the conception of fatherland is very fine. The children are taught that it embraces the past, present, and future; that to all good hearts the 'fatherland' is very dear; they read the hymn of Hugo: "Ceux qui pieusement sont morts pour la patrie . . . "; and Bouchor's "Aux morts pour la patrie"; they are taught to love France, to be ready to serve her, and to die for her if necessary; the duties of mothers to the fatherland, and, especially their duties in time of war, are also taught.

II. Duty to one's self—care of body, cleanliness, sobriety, temperance; dangers of drunkenness; value of physical culture, gymnastics.

Use and care of property, economy, avoidance of debt, effects of gambling, prodigality, avarice, etc.

The soul.—Veracity, sincerity, personal dignity, self-respect, modesty, recognition of one's faults; evils of pride, vanity, coquetry, frivolity; shamefulness of ignorance, idleness; courage in peril, in misfortune, patience; personal initiative; evil of anger.

Attitude to animals; kindness; society as protector of.

Duty to neighbour; justice, charity; golden rule; kindness, fraternity, tolerance, respect for others beliefs.

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In teaching these subjects, the teacher is required to *assume* the existence of the conscience, of the moral law, of the sense of moral obligation, and to appeal to the feelings and ideas of duty and responsibility; and he is enjoined not to attempt their demonstration theoretically.

III. *As to God.*—The nature and attributes of God are not to constitute a part of the course in morals, the instruction being limited to two points alone, viz., (*a*) the name of God is not to be used lightly; (*b*) the conception of a first cause and of a perfect being is to be associated with sentiments of respect and profound veneration. The teacher is to make the child feel and comprehend that the duty he owes is to the laws of God as revealed to him in his conscience and understanding.

Higher section; age, 11 to 13 years.—The earlier conceptions are enlarged and expounded, and the conception of social morality is developed.

The family, society, justice, the social conditions, solidarity, fraternity, development of the ideas of patriotism, the duty of the citizen, taxes, the ballot. The danger of alcoholism is explained; its slow destruction of the social sentiment by relaxing the will, and the sense of personal responsibility. So also is obedience to law, the necessity of military service, discipline, devotion, fidelity to flag, the wrong of fraud against the State, the moral obligation of the ballot, freedom, liberty of person, of conscience, to work, to associate, security of life and property, national sovereignty, significance of the motto, "Liberté, égalité, and fraternité."

Throughout the teacher is required to avoid anything in the nature of metaphysical discussions, but to explain clearly the difference between duty and interest, distinguishing between the two when they are likely to be confounded, so as to make the pupil realise the imperative nature of the former, and the difference between the moral and written law; the one affixing a penalty as regards violation of the prescriptions of society, the other imposing on us, in our inner conscience, a duty which no one obliges us to fulfil, but which, nevertheless, we cannot neglect or contravene without a sense of wrong to ourselves and to God.

It ought to be said that, in interpreting these general indications as to what the moral instruction should be, *much depends, as is always the case, on the personality of the teacher.* The French, as a nation, have a very high conception of the duty of the teacher, and what teaching was seen in France was of a high character. In an article by M. F. Buisson, "L'école primaire en France et sa part de responsabilité dans l'éducation morale du pays," the limitations of the system are recognised. Put broadly, they are that, in the case of the classes who leave the school for ever when they leave the primary school, the moral education ceases at a time when its continuance is sorely needed. The classes who are able to send their children for a longer period naturally have some advantage, therefore, in this respect.

Some idea of the real conception of French moral education, as it presents itself to its greater men, may be had from the words of M. Buisson, which may be freely rendered thus:—

> As the ages roll on, and society advances from the savage to the civilised state, so grows the moral conscience. Respect for justice is opposed to respect for mere force, and two grand ideas, essentially human, the ideas of right and duty, illumine the darkness of the animal world . . . . . Each holds himself bound by the unwritten yet no less imperative law within, the feeling of moral obligation grows ever more and more intense, more exact, severe, scrupulous, and delicately refined, until the full splendour of the ideal of moral perfection bursts upon the soul; that ideal which, though it despair of attaining, it must evermore pursue . . . . .
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> This is exactly the position of the secular schools of France on the question of Moral Education. . . . Its work is neither religious nor philosophic, but moral and true in the fullest sense. They utter nonsense who accuse it as destitute of faith; . . . it is faith in human nature, in conscience, in the absolute validity of the moral law, faith in the good and true, in duty without regard to reward or punishment, in the sanction of our conscience. . . . The school takes the child . . . it does not reason about, but it fills him with the spirit of morality, and impels him to its exercise. . . . The secular school teaches Morals as *something to be lived rather than as something to be learned*, . . . something diffused in the air we breathe, the language we speak, in everything that expresses the public thought and conscience.

This is the conception which holds in its power the finer minds in the French educational world; this is the conception which is infused in the mind of the young aspirant who would become a teacher, during the time he is, as an intelligent student, systematically studying the art which afterwards he is to put into practice.

It would not be just to close this comment on French moral education without bearing testimony to the zeal, kindliness, and active sympathy of the French teacher as we found him or her, and to the grace of manner in the children, which no doubt flows therefrom; and it may at once be said that wherever the moral ideas seemed vivid, and the sympathy broad, there was the same gratifying result in the children that came under their generous influences.

5. *Moral Education in Switzerland.*—In the chapter on kindergarten, and in that on the Swiss system of education, the outline of the moral element has been to some extent indicated. The leading idea is that previously enunciated, viz., "Never put in the child-mind any but the most exquisite things," as Fénelon so well said. Rousseau's Emile has perhaps given a certain mildness and sweetness to the Swiss ideas of discipline and moral teaching generally; but the moral education, it is unnecessary to say, is not as with Emile, left till sixteen years have passed over the children's heads. As with the French in the kindergarten period, the children are influenced through simple little stories.

In the Canton of Geneva it is declared by Art. 126 of the Regulations for Primary Education (of the 11th September, 1900) that "the religious instruction provided by the Constitution (for primary schools) is given exclusively by the ecclesiastics of the two creeds," and that "it is optional." Art. 127 provides that "this instruction, and also that intended for the catechumens, *must not encroach* upon the hours devoted to the ordinary teaching, nor prevent the pupils from being punctual in their entry into their classes."

In the adjoining Canton, Vaud, the official programme sets forth a definite programme for "Religion," and it will be observed that in passing through the seven classes the pupils obtain a comprehensive view of the important parts of biblical history.

By Art. 14, Chap. II, of the Law concerning Public Instruction, dated 1889, it is enacted that "optional religious teaching, conformed to the principles of Christianity, and distinct from the other part of the obligatory programme, shall be given in each school." The teaching is to be so arranged as not in any way to interfere with pupils who do not elect to follow the course (of religious teaching). It is placed under the surveillance of the pastors of the national church. If a teacher ask to be relieved of the task of giving this instruction, the Commune, with the clergyman of the parish and the authorisation of the "Department of Public Instruction and Worship," shall take steps to provide for it. The religious instruction given to the catechumens *shall encroach as little as possible* upon the ordinary school hours. It will be observed that this is less peremptory than the Genevese rule. In

In some of the Swiss Cantons the provision for religious instruction has been made in a manner very similar in principle to that adopted by this State. What has been indicated above is fairly representative of the general attitude; but it does not convey any realistic idea or adequate impression of the Swiss attitude to the elements of moral education. First, it must be observed that Switzerland makes sacrifices for her educational system, beside which those of this State and those of England pale into insignificance. Secondly, good education has become a species of religion with the Swiss, to the great advantage of the children of that country. Thirdly, Switzerland has seen some of the grandest examples of the personal devotion of teachers which are to be found in all history. Fourthly, the ideals of the country as to the nobility of the calling of the teacher, of the sacredness of his work, are very high. Fifthly, no one commences his or her career as a teacher without hearing much of the history of the great men who have won so much for modern ideas of education, of their nobility and self-sacrifice, and of the moral elevation which was characteristic of their every effort. All this is in the pædagogic atmosphere, so to speak, and the traditions of pædagogic history are therefore all favourable to high development.

We translate freely some passages from Articles 10–20 of a series of rules and maxims for the use of teachers, having relation to the development of the mind, heart, and physique of the pupils.

The teachers are required, besides impressing upon the children the duties of cleanliness and propriety, "to give the greatest care to their health," seeing that they are properly arranged in the school, that it is well aired, "and inviting them to take part in gymnastic games in the recreation hours." Art. 12 says: "Teach your pupils to love all that is good, beautiful, true, just, honest. You have not only to transmit the exact knowledge required by the school-law; you have, *before all*, to make, through civil and religious education, a man, a citizen, and a Christian—a man for society, a citizen for the State, a Christian for God and the other life." Exhorting the teacher that his example should never conflict with his precepts; that, seeing that children are imitative, *what he does is vastly more important than what he says*. Art. 13 says: "Let your conduct, in every particular, be irreproachable, and worthy of your mission." And Art. 14 continues: "Be for your pupils a friend, a father; above all, let your heart be open to the poorest, to the orphans, to the little abandoned children, and to those who are exposed to evil examples under the domestic roof. A master without heart is unworthy of the noble functions consecrated by our Divine Master Jesus Christ, who was a child to children, and who uttered these sublime words: 'Suffer little children to come unto Me.'"

The importance of evenness of temper; of guarding oneself against the rudeness which arises from anger or bad humour; of uniformity in the treatment of pupils; of affability, without familiarity; of indulgency that does not degenerate into weakness; of severity that is never capricious; of the necessity of calmness and dignity in the infliction of all punishments; of taking care never to merely threaten; and of knowing how to forgive such faults as are natural to the inexperience and levity of youth,—is referred to in Art. 15. Art. 16 reads: "At all times, and particularly in the presence of the young, carefully avoid all triviality of expression, nicknames, and, still more, all injurious and coarse expressions. Similarly avoid all possibilities of becoming mixed up with the discussions and quarrels which too often exist between the people and families in the midst of which you are called upon to live." The necessity of the strictest impartiality; of never forgetting that the clear-sightedness of little children let slip no case of partiality or injustice, with its tendency to develope jealousy and hate; and the need of remembering that respect and love are never accorded by children to a master who who is not strictly equitable; these are the subjects dealt with by Art. 17. In Art. 18 the essentially religious character of the ideas of suitable moral education, in some parts of Switzerland, is seen: "Commence and terminate the class by lifting up to God the hearts of the children confided to you. Avoid mere routine in the prayer and the religious exercises of the school. Prayer from the bottom of the heart, and a beautiful hymn, lift up the soul of the child to heaven."

The remaining two Articles deal with the repression of certain vices contrary to good manners, and the necessity of regarding the age and sex of the pupils in the matter of the discipline and general management of the school. Respecting the former matter, it may be pointed out that stress is laid upon the great need of observing the last degree of prudence in dealing with the unfortunates afflicted with a disease, moral and physical at the same time, and that the revelation of the matter may only make it contagious.

Both boys and girls have two and a half hours a week instruction in religion and sacred history in the Canton of Fribourg; in Lucerne, three hours, in Berne, two hours; and it is much the same for the other Cantons of Switzerland.

The systematic regard of the needs of the poor, which is a feature in the school-life not only of Switzerland, but also of a very considerable part of Europe, admits of the children seeing something of the real side of benevolence, and gives definite point to the ethical and moral teaching.

6. *Moral education in Germany.*—Throughout Germany, the system of education is declaredly based upon religion as its fundamental element. In general, about three hours per week are devoted to religious instruction in the lowest classes in the schools, and about two hours in the others. The two dominant "confessions" in Germany are the Evangelical and the Roman Catholic. In the case of the former, the religious instruction (Lutheranism) in the schools has for its declared general aim the building up of a Christian character through a knowledge of the Old and New Testaments, and thorough instruction in the Lutheran Creed. Through this, and through imparting a knowledge of, and through promoting participation in, the life and duties of the Christian community, it is believed a wholesome influence will be exercised upon the national life.[1]

The declared aim of the Roman Catholic instruction in religion is to develope in the Catholic children, both in respect of their inner and outer life and action, their spiritual nature; to make them really understand the Roman Catholic Church; to convince them of the Divine origin of Christianity, and to make them disposed to remain, through life, "in and with Christ and His church."[2] This, it is contended, must be done, not by dealing merely with individual items of instruction, *but by keeping the spiritual end in view throughout the whole organisation of the school, and its programme of studies.*

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[1] *See* "Die höheren Schulen in Preussen und ihre Lehrer," von Adolf Beier. Halle, 1902; pp. 37–41.
[2] *Ibid*, pp. 41–45.

In the evangelical schools the general development of the teaching is practically what is known as Evangelical Christianity. For example, in the "Lehrplan" of the folk-schools of Dresden, it is affirmed that: "The religious instruction shall train the children, by an introduction to Christian history and Christian teaching, in the true fear of God in speech and conduct, in pure philanthropy, and in the firm belief in Jesus Christ, so that they may become glad and certain in their deliverance from evil."

In their progress through the school the pupils get a fairly complete outline of Biblical history, which is in some measure repeated each year. For example, the Creation is dealt with in four successive years, each time in greater development. Selected verses are learned, and also hymns. In some cases as much as two hours weekly is given to Biblical history, and also two hours in the smaller Lutheran catechism. The opinions of individuals differ very materially as to the value of the denominational portion of the teaching, viz., the instructions in the catechism. One hears occasionally the method of teaching the special denominational tenets strongly animadverted upon; it has even been alleged that to some extent they oppose the beneficial effects of these elements which inculcate philanthropy. This, of course, is the French view, and it is held by many Germans also. It is almost unnecessary to say that nothing short of a long stay in the several countries would enable one to judge with any degree of accuracy on such matters as these. The military organisation of Germany tends, probably, in all the details of its national institutions, to develope the spirit of officialism, a spirit which must inevitably operate adversely in such matters as we are now considering. On the other hand, it must also be remembered that Germany is a country of very high ideals, and that these ideals have profoundly influenced its educational traditions and educational developments. If it appear that ethical ideals are treated more formally, and apparently with less warmth than characterises some of the adjoining countries, this is probably in appearance only, for the German teacher is highly trained, and is systematically taught the significance of the elements of ethical teaching. Probably in no country in the world have the whole range of educational questions been more conscientiously and profoundly discussed than in Germany, and the noble aspirations and philosophic temperament of the people are reflected in the serious way in which this element, among others, is regarded.

It may be pointed out that the German youth gets some instruction as to the tenets of the various denominations, and of the modern history of religion.

The following translation from the "Organisation and administration of higher education in the civilised countries of Europe and North America"[1] will give a more definite idea of the matter.

The general aim of the religious instruction is, harmoniously and through every activity of the school, to educate the youth in the Word of God, to qualify him, so that hereafter, through confession and conduct, and especially through a living interest in the life of the Christian community, he may set a good example.

In the successive classes the instruction is as follows for *Protestants* (Lutherans) :—

vi. Biblical history (Old Testament). Before the Church festivals, the corresponding New Testament history. Catechism, with explanation of words, etc. Inculcation of some articles of the Catechism, hymns, etc.

v. Biblical history (New Testament). Explanation of the Catechism. Articles of the catechism and four new hymns. Recapitulation of what was earlier learnt.

iv. The principal divisions of the Bible, the series sequence of the books. Reading of important sections of the Old and New Testaments. Recapitulation of the Catechism. Explanation of Luther's catechism. Inculcation of doctrine of Catechism, hymns, etc.

iii B. The Kingdom of God in the Old Testament. Reading of the Bible; also the Psalms and Job. Recapitulation of Catechism, new hymns, etc. Instruction regarding an ecclesiastical year, and of the order of Divine service.

iii A. The Kingdom of God in the New Testament. Bible-reading. Sermon on the Mount, parables. Recapitulation of hymns, etc. Explanation of some of the Psalms. History of the Reformation. In conclusion, a biographical sketch of Luther.

ii B. Bible-reading. Explanation of the Synoptic Gospels. Recapitulations of Catechism, of passages from the Bible, hymns, Psalms.

ii A. Explanation of the history of the Apostles. Reading of other sections of the New Testament, and recapitulation as before.

i B. Church history, confined to that which has immediate significance for youth. Jewish Christianity. The Pauline conception of the work of Christ. Augustine. Pelagius. The development of the Romish Church. The Reformation. The most important circumstances in the development of the Evangelical Church (Pietism, etc.), and newer sects, as Methodists, Baptists, Irvingites, etc. Explanation of the Gospel of St. John, and the easier Epistles.

i A. Theology and moral philosophy in the form of an explanation of Articles i-xvi, xviii, and xx of Augustine Confessions, etc. Explanation of the Epistle to the Romans.

In the *Roman Catholic religion* the instruction is :—

Old and New Testaments. The Catechism, with the most important illustrations from Holy Scripture, and tradition. Explanation of the ecclesiastical year. Impression on memory of some important Church hymns.

The principal contents of Holy Writ, particularly the New Testament (from which passages in the original are recommended for the highest classes), and the certain facts in respect of particular books. Principal points of theology and moral philosophy. The principal epochs of Church history, and her prominent supporters, especially the lives of the saints.

The authorities, as far as could be learnt, are in earnest about the necessity for religious instruction.

7. *The moral interest of teachers in their pupils, in Germany.*—The teacher in Germany is taught that he should have a very real interest in the pupil; in fact, should be practically his moral guardian. This appears in the instructions to the students in teaching, at the practice-school of Jena.

The point of view appears in such Regulations as the following :—

"Discipline, like instruction, must aim at the development of *a moral religious character* in the pupil."

The teacher studies each pupil, and, for the purpose of habituating him to such study, he is obliged to prepare biographical sketches for the "Individuality-book" (Individualitätenbuch). He is recommended to endeavour to win, in a proper way, the pupil's confidence, for the purpose of assisting him in the formation of his character. He is to avoid the necessity for disciplinary corrections by using his opportunities

[1] Die Einrichtung und Verwaltung des höheren Schulwesens in den Kulturländern von Europa und in Nordamerika. Dr. A. Baumeister. München, 1897, pp. 38-9.

opportunities of conversation, and by discussing things from a moral standpoint, stimulating the activity of the nobler sentiments, gratitude, pity, loyalty, and so on. Punishment is to be administered with moral earnestness; and cold discipline never to take the place of kindly treatment.

Cases have come under the direct observation of the Commissioners, shewing that this *interest is real*; and that, wherever it exists, it has a most beneficial effect. But to proceed to the deeper question—that which goes beyond the merely ethical.

8. *Moral-religious Education as Presented at Jena.*—Pointing out that, according to Kant, the great secret of fully perfecting human nature lies behind education, and that it is delightful to represent human nature as being ever developed into something better thereby, Professor Rein, of Jena, says: "How gladly would one dwell upon the thought that inspired Plato's outburst, 'There is nothing more divine than education.'" And it may be stated that this is the keynote of German pædagogy and German pædagogic effort. This will appear from the following passage, translated from the introduction of Professor Rein's "Pædagogy in Outline."[1] It is unnecessary to comment on that gentleman's world-wide reputation as an educationist:—

Without the feeling of inspiration, and without so sublime a purpose ever before the eyes, it would be hardly possible for educators to maintain their constancy, in the continuous sacrifice involved in constraining themselves to bend the virile mind to the world of the child. . . . They could hardly overcome the chill of the thought that the world will remain as it is, in spite of education, was it not that they are ever animated by the hope that their efforts will bear fruit in one and all. . . . In eloquent words is portrayed how vain is every hope of better times if man himself is not bettered. 'The cultivation of humanity must proceed from within. What is gained by agricultural, commercial, and industrial development, if man is not worthy to inhabit so splendid an earth, and incapable of finding upon it a heaven?

The schools . . . . should therefore so work as to develope able citizens, so that the people shall not fail of national force, nor the Church of those who honour God. This, their position (*i.e.*, the schools) in human institutions, is founded upon the conception of a gradual inspiration of society, as the highest grade of moral development, for which it must strive.

Upon this highest stage of development the community may be represented as even inspired. The whole of society is pervaded with a clear insight into those ethical ideas which govern the whole social organism, and inspired by a fixed purpose to obey this insight, and to present, as the highest problem of life, a uniform, and, as far as possible, complete embodiment of these ideas. To gradually approximate to this ideal of an inspired society, various institutions are requisite. The indispensable basis of all moral progress is a thorough, well-grounded, legal order.

9. *The Building up of Character, the Recognised Basis of Education in Germany.*—The German point of view as to the significance of the ethical and religious element of education is set forth in perfectly definite terms by its educationists. Thus, in the Section Methodology of Professor Rein's "Pædagogy," he indicates that the points which should be brought out in designing a curriculum are[2]:—

(1) The ultimate moral-religious purpose.
(2) The psychological and historical grading of the instruction, each part being harmonised with the other.
(3) The correlation of the material of instruction.

In discussing the aim of instruction, under the subject of general didactics, he says:—

The instruction will operate as *truly educative*[3]:—
(1) If it beget in the pupil a deeply penetrating, many-sided, and lasting interest.
(2) *If it secure for the moral-religious interest the necessary strength.*
(3) And thereby guarantee unity of consciousness as a foundation for the development of *a personality, of strong character.*

This, he says, "is the highest aim of instruction, viz., its function in character-building. And earlier, in discussing the teleology of Education, he endeavours to define the supreme purpose under which all educational effort must be subsumed. Thus he says:—

But unity of plan without unity of purpose is unthinkable. For only when the idea of a plan appears as system of forces, pursuing for years always the one end, can the hope of becoming master of the situation exist.[4] . . . If Kant and Herbart are right, that the will is to be regarded as the proper object of all ethical estimation, then it follows with absolute certainty that the *moral culture of the will must be viewed as the highest purpose of education.* If a constant and good will in the youth is placed as the end of education, one indisputably possesses therein an absolutely estimable aim, and through idealistic ethics *this aim will stand forth as the highest, universal, and necessary purpose of human existence.*[5]

Passage after passage could be added, shewing the high tone of German conceptions of education, all in the same strain.

10. *Ethics and Religion in Schools in other parts of the World.*—Speaking generally, it may be said that, in almost every country of Europe, the ethical and religious elements are seriously considered in relation to school-life. Educational matters are discussed with an earnestness to which we are yet somewhat foreign, and the conviction is intensifying that *manly traditions, noble ideals, and the instinct of reverence must, above all things, be awakened in children.*

Modern educational thought recognises that education which aims *merely at informing the mind* fails in the most important particular; and that a *fine, manly, generous, purposeful, and reverent nation cannot be reared on merely intellectual elements.*

In some places it is true, there is a lack of religious freedom, church attendance becoming a necessity of official relationship with teaching. This is perhaps somewhat marked in parts of Canada. For example, in the prospectus of the McGill Norman School, Montreal, page 10, the following rule is laid down as to attendance on religious instruction:—

Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the students connected with each denomination shall be furnished to one of the ministers of such denomination resident in Montreal, with the request that he will meet weekly with that portion of the teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church, at least once every Sunday.

Such regulations are of doubtful value, and are calculated to sometimes produce quite a different result to what is intended.

In England the necessity of the inclusion of the moral element has, in some form or other, long been recognised; and though the finer elements of moral feeling have not always been so adequately represented as might be desired, yet in the great public schools traditions of honour and manliness have held their place, and have given British character its tone.

The *vigour* of Scottish character is also a testimony to the *force* of the moral elements of training, and so also is the politeness and amiability, often coexisting with marked strenuousness of purpose, that was seen in children in many parts of the world. These are all testimonies as to what ethical and religious ideals are capable of doing to raise the character of a people on its proper plane. Reviewing

[1] Pädagogik im Grundriss. Leipzig, 1900, p. 8. [2] *Op. cit.*, p. 105. [3] *Ibid*, p. 86. [4] *Ibid*, p. 67. [5] *Ibid*, p. 72.

Reviewing widely the trend of educational experience as to the necessity of ethical and religious instruction being systematically provided in connection with school education, it may be said that—

(*a*) Educationists of eminence agree that education must make the *building of character* the foundation and unifying principle of all instruction.

(*b*) The creation of *noble ideals* in the child mind is essential to the formation of good character, and this must be taken account of in the scheme of instruction.

(*c*) By wise direction, the educator must endeavour to afford opportunity and assistance for the *ideal to find expression in conduct.*

(*d*) The ideals must embrace the *personal, social, and national virtues.*

We shall later deal with these matters more fully.

11. *Children's National Guild of Courtesy.*—An excellent movement exists in England known as the "Children's National Guild of Courtesy," the object of which is to develope in the rising generation amiable and courteous manners. Their sketch of good manners, given hereinafter, can be had in the form of wall-sheets from an English publisher, and contains many undoubtedly good recommendations. Unfortunately some of the details cannot be commended, and such an *ad misericordiam* appeal as, "Be respectful to your teachers, and help them as much as you can; their work is very difficult and trying," while aiming at the right thing, viz., the creation of a sympathy as between pupil and teacher, misses wholly the right attitude, and is unmanly in its solicitation of sympathy. Some such set of rules could, however, easily be drawn up, which would be free from that and other similar defects. The rules are quoted merely as an example of a systematic attempt to cultivate good manners. To recommend them in their present form is of course impossible.

The following is a copy of the wall-sheet above referred to:—

GOOD MANNERS.

Based upon rules of the Children's National Guild of Courtesy.

Courtesy, Politeness, or Good Manners, means kindly and thoughtful consideration for others. A celebrated writer has said that a boy who is courteous and pure is an honour to his country. Brave and noble men and women are always courteous. Three of the bravest and greatest men who ever lived—the Duke of Wellington, General Gordon, and General Washington—were distinguished for their courteous behaviour.

Courteous boys and girls will always be careful to observe the following rules.

As to themselves ...	Be honest, truthful, and pure. Do not use bad language. Keep out of bad company. Keep your face and hands clean, and your clothes and boots brushed and neat.
At home	Help your parents as much as you can, and do your best to please them. Be kind to your brothers and sisters. Do not be selfish, but share all your good things.
At school	Be respectful to your teachers, and help them as much as you can: their work is very difficult and trying. Observe the school rules. Do not "copy," nor cheat in any way. Do not cut the desks, nor write in reading books, etc. Never let another be punished in mistake for yourself; this is cowardly and mean.
At play	Do not cheat at games. Do not bully; only cowards do this. Be pleasant and not quarrelsome. Do not jeer at your schoolmates, or call them by names which they do not like.
In the street	Salute your Ministers, Teachers, and acquaintances when you meet them; they will salute you in return. Do not push or run against people. Do not chalk on doors, walls, nor gates. Do not throw stones or destroy property. Do not annoy shopkeepers by loitering at their shop doors and windows. Do not make slides on the pavement, nor throw orange peel there. Dangerous accidents often result from these practices. Do not make fun of old nor crippled people, but be particularly polite to them as well as to foreigners and strangers.
At table	Always wash your hands and face before coming to table. Do not put your knife to your mouth. Look after other people; do not help yourself only. Do not be greedy. Do not speak nor drink with food in your mouth. Turn your head away from the table, and put your hand or handkerchief before your mouth, when you sneeze or cough. Do not sit with your elbows on the table.
Everywhere	Never be rude to anybody, whether older or younger, richer or poorer, than yourself. Remember to say "Please," or "Thank you," "Yes, sir," or "Yes, madame," "No, sir," or "No ma'am." Before entering a room it is often courteous to knock at the door. Do not forget to close the door quietly after you. Always shew attention to older people and strangers by opening the door for them, bringing what they require (hat, chair, etc.), giving up your seat to them if necessary, and in every possible way saving them trouble. Never interrupt when a person is speaking. Always mind your own business. Be punctual. Be tidy.
Remember	All these rules respecting your conduct towards others are included in the one Golden Rule "Always do to others as you would wish them to do to you if you were in their place." Whenever, therefore, you are in doubt as to how you should act towards others, ask yourself this question, "How should I like them to act towards me if I were in their place?" and then do what your conscience tells you is right.

Children's National Guild of Courtesy.—Inaugurated October, 1892.

President, Professor Meiklejohn, M.A.; Hon Secretary, H. E. Norton., Esq., 56, Old Bailey, London, E.C.

12. *Cultivation of Patriotism.*—A similar wall-sheet may be had, the aim of which is to develope the spirit of patriotism, and is issued by the same publisher. An excellent feature in all schools of the United States of America, is the saluting of the flag, and the declaration of personal fealty to the Constitution.

There can be no doubt whatever that the development of an instinct of national solidarity is of great importance to any people, so long as the nations of the earth are not living in a state of assured peace; and therefore the recital of stories and historical incidents, capable of producing emotional reaction of a patriotic character, should be recognised as an essential part of school education. So also should the fact that we are banded together to resist aggression from any source whatsoever, and that in this matter the interests of rich and poor, of learned and unlearned, are all identical.

The following is the wall-sheet referred to, which also is susceptible of improvement:—

PATRIOTISM.

Dulce et decorum est pro patria mori.[1]
Dieu et mon droit.[2]
"Breathes there the man, with soul so dead,
Who never to himself hath said,
'This is my own my native land!'"[3]

What is Patriotism?	Patriotism is a sincere love for, and pride in, one's country and countrymen. Loyalty is faithfulness and willingness in serving the Sovereign and the Constitution. Patriotism is a feeling; loyalty is a duty: the one flows from the other. Why

[1] Horace Odes, Book III, Ode 2, verse 13—"Sweet and glorious it is to die for one's country." (Smart's translation.)

[2] French, "God and my right." This was the watchword of Richard I at the battle of Gisors (near Rouen) in 1198, when he defeated Phillip of France. Richard meant that he was not a vassal of France, but that he owed his kingly position to God's providence alone. The words were afterwards adopted as the battle-cry of England, and as the motto on the Royal Arms.

[3] Scott's "Lay of the Last Minstrel," Canto 6, Stanza 1.

Why we should be Patriots.

1. On account of our Sovereign, who rules with justice, equity, sympathy, and kindness, over a contented and happy people, and over an Empire on which the sun never sets. 2. On account of our laws, which are, on the whole, the best in the world and, to the rich and the poor are alike just. 3. On account of the liberty we enjoy. This has been won for us by our forefathers after many hard struggles, and is the growth of ages. We have liberty of opinion, liberty of speech, liberty of worship, and liberty of the Press. 4. On account of our past history; the activity, energy, intelligence, and enterprise of the British Nation have made themselves felt in every continent; they have created an immense Empire, and carried truth, justice, and liberty to all parts of the world. 5. On account of our great men: statesmen, warriors, sailors, explorers, writers, and scientists, past and present; these have all been mighty in deeds and words; they are our pride, and are worthy of our emulation.

Our duty as Patriots.

1. To render cheerful and willing obedience to the law and to those in authority, so as to—(1) Preserve our rights; (2) Maintain our liberties; (3) Protect our morals; (4) Promote our interests. Strict obedience to those in authority is (as a guiding principle) essential to success, either as individuals or as a nation.

"Their's not to make reply,
Their's not to reason why,
Their's but to do and die.[1]

2. To preserve national and social peace; to hand on the noble traditions of the past, and to do nothing to sully the good name of Britain, so that our beloved country may maintain its greatness, increase in power, influence, and glory, and in all that "exalteth a nation[2]—

"Be just and fear not;
Let all the ends thou aim'st at be thy country's,
Thy God's, and truth's."[3]

GOD SAVE THE KING!

13. *Scheme of Ethical and Religious Education for New South Wales.*—The provisions relating to religious education of the Public Instruction Act are not availed of by the clergy of the various religious denominations as it might have been hoped. It would be well, therefore, if a circular were issued, calling attention to the provisions of the Act, and inviting the co-operation of the clergy in providing for the moral-religious education of the people of this State.

The giving of such education should not however be left entirely to them, for they have many other calls on their time; and it must also be remembered that, in the country, visitation of the schools would often be impossible.

A scheme for ethical instruction on very similar lines to the French, which is at once noble, and, as regards religious differences, neutral, is much to be desired.

Such a scheme should be developed on the following lines, already suggested in section 10 of this Chapter:—

Ethical instruction in school ought to embrace the relation of the child or person to—

(*a*) Himself (Personal ethics).
(*b*) His fellows (Social ethics).
(*c*) His country (National ethics).
(*d*) The world (Philanthropy).

And he should be so taught to recognise something of the reality of such relationships through the cultivation of—

(i) Personal ideals and character.
(ii) The social virtues.
(iii) Patriotism, loyal response to the just claims of his country, and the wish to see its institutions perfected.
(iv) The love of mankind, without regard to racial or religious differences.

All these elements should, in the actual instruction, as far as possible be united, not dissociated—that is to say, the above represents only the logical order, and not the pædagogical.

On these outlines a text-book for the guidance of teachers should be written, not by an ordinary pædagogue but a specialist in moral philosophy, having in addition a thorough grasp of modern theory of instruction and of the child mind in its different stages of development.

Then, with wall-sheets containing the fundamental points of the text-book, something more worthy of an effort to create noble ideals could adorn the walls of every school in our State.

Those elements of good manners which depend upon nobility and generosity of heart ought to be assigned a far higher place than matters of mere etiquette; and it will then not be difficult to get children to understand that the forms of etiquette are after all of some moment, as expressing the degree of cultivation attained in our social relationships. They will then understand that *politeness, and grace of manner*, when the natural expression of a good heart and of sensitive regard for the personality of others, are among the *finest adornments of the human being*.

It is not sufficient, however, to know merely the right terms in which to convey ethical and similar instruction. The devoted teacher understands perfectly well that it is through sympathy and example that the communication of ideals becomes possible.

His instincts will often direct him aright with gratifying results. When such teachers reach, through better education, a wider outlook, and, through the systematic study of ethics and religion, know better how to direct their efforts, their deeper and more wisely directed enthusiasm will unfailingly write itself on the future history of our people in traditions and ideals worthy of the nation from whence we sprung, and worthy of human aspiration.

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[1] Tennyson's "Charge of the Light Brigade.

[2] Prov. xiv, 34.

[3] Shakespeare, Henry VIII Act iii, Scene 2, line 444. Wolsey to Cromwell.)

CHAPTER XVI

CHAPTER XVI.

Education of the Will.

[G. H. KNIBBS.]

1. *Introductory.*—According to Immanuel Kant, the normal education of mankind should not commence with the improvement of morals, but with the reforming of their mode of thinking, and the founding of their character.[1] All systematic study of education has ended in recognising the essential difference between informing the mind, and developing the character; though of course each element reacts upon the other. Character differs in respect of (*a*) energy, (*b*) kind. The *energy* with which it is manifested depends upon the will; and the *efficiency of the manifestation* of the will is limited by the knowledge or intellectual culture which is, as it were, at its command. The *formation* of good character, and its confirmation by the establishment of good *habits*, in such a way that its spontaneous expression may ultimately become of the desired kind, is dealt with in the preceding chapter.

Leaving now the qualitative ethical element out of consideration, education may be said to fall under two heads, viz., it takes the form either of—

(*a*) Instruction, or the imparting of knowledge, which *tends* to develope the critical or judicial faculty.
(*b*) Exercises of the will, which *tends* to develope the practical or executive faculty.

The highest cultivation of the former (critical faculty), involving the complete neglect of the development of the latter (practical skill), although of the greatest value, is a rare requirement, and may be disregarded in reviewing a national system of education; not only because such special development is really needed, but also because persons with the necessary intellectual endowment are practically independent of ordinary forms of education.

2. *Necessity of development of Will through the Educational System.*—The strength of character of an individual or nation depends upon the intensity of its will; and, therefore, to systematically develope it in the individual is to develope it in the nation, inasmuch as the national life will reflect the vigour of the component individuals.

In its inception, will depends upon *purpose*. Purpose is really manifested will; and purpose, when strong, tends to discharge itself in external acts. It is that strong *impulse to action* that gives *force* to a character.

It may be pointed out that, in itself, will is neither good nor bad. Will expresses the *force*, not the quality of action; and it is here assumed that the latter has, for the present purpose, been already adequately discussed.

Both in individual and in national life, vigour of will is of great value; and, consequently, the evoking of the idea of purpose, or, what is the same thing, the cultivating of the mode that leads to habitual activity, is a matter of national importance. This is recognised by all educationists.

Dr. Laurie, Professor of Education in the University of Edinburgh, in a conversation during the occasion of the Commissioners' visit to that city, laid great stress upon all elements of education which develope *this idea of purpose*, and which habituate the pupil to practically express it. That self-expression, which must have outlet, and discharge itself in external acts—or, to put it in other terms, that assertion of the will, which is made whenever purpose is realised—is to the soul what physical exercise is to the body.

School-life which fails to find, either through play or through school exercises, opportunity for such acts of self-expression, tends to produce weak or flabby characters.

The intellect may be good, and the character may be amiable and kindly inclined, but it does not follow that the will will be strong. The value of the two former elements may, in real life, be practically annihilated by irresolution. Every school-teacher, therefore, should see that in the mechanical elements of his discipline opportunity for the self-expression of the pupil should be given; and he should be extremely careful not to destroy that self-expression through overpowering the personality of the pupil by his own maturer and stronger development.

There are two things to which attention may here be drawn: one is, that high intellectual culture may exist without individual or national strength of character; the other is, that in the narrower and more mechanical forms of school-discipline, liable to be highly approved by administrations, in the attempt to achieve merely mechanical perfection, much that passes for good discipline is nothing more than disastrous repression of the individualities of the children, and the true nature of education is completely lost sight of. Such types of administration often plume themselves upon this perfection, and yet, from the individual and national point of view, they are nothing short of calamitous. The two elements will be separately dealt with.

3. *Insufficiency of Intellectual Culture.*—It has long been recognised that the cultivation of the knowing faculty of the human being does not in itself tend to make a vigorous and useful life. Knowledge in the service of the will, and guided by character, is what constitutes *manhood* in the true sense. It has been recognised that, in some countries, the intellectual elements have been pushed so far as to produce what might be called human encyclopædias—that is to say, persons splendidly informed, able to criticise and to see the advantages and disadvantages of almost everything, but quite incapable of self-activity in practical directions. For practical purposes, therefore, such persons are often decidedly inferior, compared with

[1] "Pädagogik. Professor Dr. W. Rein, Leipzig, 1900, p. 81.

with those who are relatively ignorant, but who are endowed with a natural tendency to action. It is, perhaps, this that has given rise to the somewhat common but *false* opinion that intellectual capacity usually coexists with practical incompetency, and has led in so many places, especially where the general education is on a low plane, to the appointment of persons who are supposed to have, and who often, according to their lights, really *do* have, the genius of administration. The granting, however, of administrative powers to people badly equipped intellectually, and, therefore, possessed of very limited horizons, must necessarily lead to injurious consequences, which, however, are not always readily perceived. This is a point to which we shall later recur.

4. *Foreign Testimony of the importance of maintaining Robustness of Will and Self-reliance.*—Thoughtful educationists all over the world have taken account of the practical success of indifferently-informed people, and of the failures of people well equipped intellectually. In endeavouring to understand our own position—that is, the position of the British race—in this respect, it is well to have regard to the testimony of foreigners rather than to that of ourselves; at least, if we desire to escape from the blinding effect of national prejudice.

It may be said that, rightly or wrongly, we are regarded as, on the whole, an ill-informed people. At the same time, however, there are large numbers of educationists in other nations who recognise *the great vigour of English character*, and who realise also that any scheme of education which fails to maintain this is nationally fatal.

On this point, the following testimony of Dr. Emil Reich, in a letter written to an English lady, Miss Catherine I. Dodd, the letter bearing the date, August, 1901, is of interest. Speaking of the higher Hungarian education, he affirms as follows:—

It aims at making of Hungarian young men of 18 years types of those strange creatures whom the Germans aptly call "bildungswüthig" (culture-rabid).

No doubt, many of them know a good deal about various things; nay, I have no hesitation in saying that the average young Hungarian disposes of a far greater amount of book knowledge than does the average young Briton. My experience of the purely intellectual aspects of the better-class British youth has been both extensive and intensive. I have taught hundreds of Oxford and Cambridge men, also younger men from Harrow, Eton, Wellington College, etc., and I cannot help noting that they excel neither in knowledge acquired nor in the powers of acquiring it. Their memory is indifferent; their imagination cold; their power of mental co-ordination or *rapprochement* feeble. They are by no means *gebildet* (educated); nor do they really care to be so. If anything, some know Greek and Latin well; others know Mathematics. That is the *Ultima Thule* of their *Bildung* (education).

But with all these deficencies in point of book knowledge, no sane man can for a moment hesitate to prefer the *ungebildete* (uneducated) British youth to the *hochgebildete* (highly educated) Hungarian young man. The latter speaks fluently, glibly, and on Wagner's operas as well as on the English Cabinet. He is often brilliant and witty, and no mean versificator. He is naturally a good journalist, and no country has, relatively, better journals than has Hungary. Languages he learns with great facility, and of the literatures of the western nations he has a wide knowledge. Not so the Oxford or Cambridge man. Quite the contrary. He speaks with difficulty, and seldom knows more than one language; for, being a man at 18, he shares also the well-known incapacity of adults for the acquisition of foreign languages.

I said the British young man is a *man* at 18. Here is the whole difference. The Hungarian educational system makes rhetoricians; the British makes men. There is, to my lights, no possible choice between the two systems. Permit me to put my view on a somewhat broader basis.

It seems to me incontrovertible that the modern State cannot develope with equal success all the three great groups of forces inherent in all civilised human beings—the emotional, the intellectual, and the volitional. . . . . The intellectual forces the State ought to cultivate, indeed, but surely not at the expense of the volitional.

Thus, *e.g.*, take Hungary. There the State developes the intellectual forces at the expense of the volitional, monopolising all the latter for its own use and benefit. Well, has that colossal amount of works of intellectual supererogation ed to any startling feats of the intellect? Does Hungary surprise the world with great inventions, great philosophies, great mercantile enterprises, or great musical compositions? Consider the last alone. Everybody knows how musical the Hungarians are; but nobody can point to first or, for the matter of that, to second or third class musical works written by contemporary Hungarians. Whence that discrepancy? Whence that incongruity between cause and effect?

The answer is simple, indeed, to the students of British civilisation. Great inventions, great philosophies, great mercantile enterprises, no less than great musical compositions, require considerable intellectual powers, indeed; however, in addition to that, and, paramountly, they require great volitional powers too. In Leonardo da Vinci, or Mozart, in Newton or Leibniz, or Edison, there were not only great brain powers, but chiefly immense powers of self-reliance, self-control, of will, of perseverance, of manly independence. Now, the Hungarian educational system does not cultivate these volitional forces. The British games, these the chief agency in the formation of the British youth's character, are totally absent; in fact, people have no time for such "silly" things in a country where the young man has to toil away eight hours a day over innumerable theories and endless book lore. The consequence is, that all the intellectual masses in the head of a young Hungarian remain inert, or are frittered away in journalism and lower *belles lettres*. The young Briton in playing his games, steels not only this muscle or that, but first of all his volitional forces. The puny gymnastic exercises at Hungarian gymnasia may indeed strengthen one or another muscle. The volitional forces they leave entirely uncultivated. Nor is there in Hungary any other means of systematically nerving the volitional powers of their youth. I cannot here enter on an examination or suggestion of such means. One thing, however, is certain: the Hungarian system has no such means for the bracing and steeling of will power, self reliance, independence, and perseverance, and hence utterly misses its aim. The forces just mentioned are *the* world-moving forces. Can anyone studying English history fail to wonder at the curious fact that England played a decisive rôle in the world's history even at a time when her population, as at the beginning of the eighteenth century, scarcely equalled one-fourth of the population of France, and one-third of that of Germany? But owing to the English system of making men, and not rhetoricians—and that at a very early age too—at 18 or 19—England always possessed as many men as did France or Germany, where manliness is developed only after the age of 30 or 35.

"The Hungarian system of education makes rhetoricians, I said. And in that one circumstance my countrymen ought to find the explanation of many a puzzle for the solution of which they have so far vainly advanced a motley description of theories, laws, and essays. The better class Hungarian has, up to his 18th year, hurriedly gone through so many sciences as to disgust him for the rest of his life with all serious reading. Moreover, as the rhetorician that he is, he does really think himself sufficiently instructed. He has categories and phrases ready cut for all emergencies. I defy anyone to impress the average Hungarian gentleman of 30 with any new idea on science or philosophy at all. All novel instruction is diluted by the waters of rhetoric; and it may be said in sober truth that the very scientific over-training of Hungarian youths renders them absolutely indifferent to serious reading in after life. Taine is very much admired in Hungary. Let me quote his words as to the ultimate effects of that over-training of the youthful mind.

"' . . . . lorsque l'acquisition des cadres généraux est aisée et précoce l'esprit court risque de devenir paresseux . . . . . souvent, au sortir du collège, presque toujours avant vingt-cinq ans, il possède ces cadres, et, comme ils sont commodes, il les applique à tout sujet; *désormais il n'apprend plus*, il se croit suffisamment muni. Il se contente de raisonner, et fréquemment il raisonne à vide. Il n'est pas au fait; il n'a pas le renseignement spécial et concluant; *il ne sent pas qu'il lui manque*, il ne va pas le chercher, il répète des idées de vieux journal." . . . . . "(Taine, Notes sur L'Angleterre, 9e éd., 1890, p. 335.)"[1] 5.

[1] When the acquisition of generalities is easy and premature, the mind runs the risk of becoming idle. Often on leaving college, nearly always before 25 years of age, he possesses these generalities, and since they are easy, he applies them to every subject; from that time on he learns no more, regarding himself as sufficiently equipped. He is content to reason, and often to reason in a void. He is not *au fait*; he has no special and decisive information about anything; he does not feel what he lacks, nor does he seek to discover it; he simply repeats the ideas of the old journal. (Taine, Notes upon England).

5. *The injurious discipline of Repression.*—In the disciplinary arrangements of the merely mechanical educationists—*i.e.*, those whose practice is based on the assumption that a school system is mainly concerned with *instruction*—great value is assigned to the externals of conduct. Thus, physical smartness, the ability to "sit up straight," and the appearance of almost preternatural attention (which is often a make-believe) are regarded as evidences of excellent discipline, and are supposed to have a high pædagogic value. The fear of punishment and of the teacher's authority are means by which the impulses to activity are *inhibited*. This repression of the self-assertion of the pupil is believed to be *good discipline*, and tyrannical teachers, whose overbearing personalities are, with their other advantages of strength and position, equal to this repression, are regarded as *good disciplinarians*. This conception of discipline is not wholly extinct, either theoretically or practically, in this State, as is known to the Commissioners; and it *is a conception to which any mechanical administration is peculiarly liable.*

In no country in Europe, nor in America, is this conception of discipline tolerated. On the contrary, *the habitual maintenance of discipline by coercive methods is recognised as evidence of failure.*

The attitude of respect towards the pupil's individuality commences in the kindergarten, where every child is taught to respect his own and every other child's individuality; and success in this direction is reached to an extent that is hardly credible in countries where the kindergarten is not properly organised, or where it so completely deviates from true kindergarten as to introduce the *repressive discipline.*

Again, the teacher also respects the child, and strengthens also in the child the sense of self respect, thus leading to good discipline, not of the mechanical kind, but without repression; that is to say, the pupil himself elects to preserve good conduct.

6. *The Psychology of Repression Discipline.*—The acquisition of the power of inhibiting impulses irrelevant to the ends desired, and of initiating movements contributory thereto, constitute the education of the will.[1] This inhibition or initiation ought both to be exercises of the will. Self-repression with purpose is as truly an activity of the will as self-expression, and both develope the *will-power*. In good school-discipline both are attended to, and they are both developed in suitable games and in free gymnastics.

Where, however, the inhibition, and so also the initiation, comes from the outside—*e.g.*, from the teacher—then the activity of the child is *externally directed*, not internally. That is not only useless, but injurious to the will development. The activity or even repose must be directed from *within*; it must be directed by the child himself or herself; it must be *self-expression*, the exercise of one's own will.

Just in proportion as discipline is wise, so will it be careful about overpowering the children's personalities, for the life of a vigorous nation depends upon *strength of personality*, or the vigorous will of its individuals. And to have vigorous wills, *school-life should not be a long experience of repression* by an overbearing school-master, but a kindly leading of the pupils to proper self-expression.

7. *Qualifications of the Teacher for Educating the Will of the Pupils.*—What has been above affirmed is thoroughly understood, and is practised, according to their capacity, by all teachers who have mastered the contributions which psychology has to make to pædagogy. Teachers who are really *trained*, by preparatory instruction as to what teaching implies and demands of the teacher, are well acquainted with these matters, and to them the above are truisms; but to those who have *not* had the teaching in the psychology of education, they are not truisms, and it may be said also that school regime is often a violation of them.

It is at once evident what are the real qualifications of the true teacher.

(*a*) He must be *prepared by previous knowledge* of what is called pædagogic psychology.
(*b*) He must have a strong respect for individual self-expression, a delicate regard for the feelings and opinions of others.
(*c*) He must be tactful, so as to be able to suggest the direction of the self-activity of the pupils, without the direction being observed.
(*d*) He must be sympathetic to appreciate exactly the effect of his attitude, and to recognise when he is in touch with a pupil.

All this may be summed up by saying that a teacher should be a properly educated *gentleman* or *gentlewoman*; and to be this, the office must command public respect.

Teaching by pupil-teachers, who are not sufficiently matured to appreciate these matters, is followed by the consequence that the will development is not well guided, and is often subjected to improper repression.

8. *Play and its Function.*—Great attention has been given to the function of play in Europe and America. In a conversation with the Director of the Oberrealschule of Heidelberg, the Commissioners learnt of the introduction, among others, of English games into German schools; and in Norway and Sweden games are also splendidly developed, as may be seen from their "Series of Games for Folk Schools"[2]; and Scandinavian educationists attach a high value thereto, both from the moral and volitional points of view, as well as the patriotic, for the games often have reference to myth and history calculated to maintain the love of country.

On the scientific side there are two very fine monographs, one on the "Play of Animals," the other on the "Play of Human Beings,"[3] by Karl Groos; and in American Universities the matter has been carefully studied.[4] There is already a considerable literature on the subject. It has been learnt, not merely that play keeps alive what may be called *elasticity of spirit*, but also that it fulfils the very important function, that of increasing the *adaptability* of the human being to the various circumstances which surround him; or, as it is said technically, the function of play is the acquirement of physical and psychical facility in self-adaptation.

The important elements are the education of the child in *initiative* and *self*-control; hence, *variety* and *freedom* are two points to be considered. Gymnastic serves the purpose of systematic training, and has been brought to a high pitch of perfection.[5] 9.

[1] Principles of Psychology. Wm. James, Professor of Psychology, Harvard University. Vol. 2, p. 580. Macmillan. 1890.
[2] Stockholms Folkskolors Lekserie.
[3] Die Spiele der Thiere. Die Spiele der Menschen.
[4] *See* for example, "Play," by Arthur Allin. Univ. Colorado Studies, I, pp. 59–73. 1902.
[5] For a very complete Gymnastic, *see* "Handbook i Gymnastic för Arméen och Flottan." 1902. (Military and Naval Handbook of Gymnastics.)

9. *Difference between Play and Gymnastic.*—It is important to draw the distinction between play and gymnastic exercise. Physiological researches have shewn that physical exercises are not necessarily restorative. By calling the mind away from fatiguing tasks, they may relieve mental attention; and, inasmuch as the physiological injury of severe mental tasks is more easily pushed beyond the health limit than is the case with physical exercises, the latter on the whole are less dangerous. The essential differences between systematic physical exercises and play are that—

(*a*) In the latter, the physical element intervenes.
(*b*) Play is free—that is, it is directed by the child himself.

It has long been known that the *feeling* of fatigue, as well as actual diminution of muscular power, is due to the presence of organic nerve poison, when produced during the use of the muscles at such a rate that its rate of elimination cannot keep pace therewith. It is also known that this feeling of fatigue is *enormously reduced by the psychical interest.* Neither animals nor human beings tire readily when interested. This has given rise to a widespread recognition among educationists, that, instead of giving gymnastic the first place, and play the second, the order should generally be reversed. This, however, will be more fully discussed under Physical Culture and Gymnastics (Chap. XVII).

The exhilaration of play, a type of excitement which, when not pushed to extremes, seems to be decidedly beneficial; and, still more, the opportunities that play affords for self-control and for self-expression, are really the elements in which inhere its highest value.

As fully recognised, not only by ourselves but also by foreign pædagogic authorities who have had experience of the English play-ground, there is no doubt that *manly and robust games*, in which, however, brutal and brutalising elements are carefully avoided, are among the most splendid factors in the production of character at once forceful, kindly, and upright; and from this point of view, it is easy to understand the dictum, that the battles of England were really won on their cricket fields. As long as play is not over-done, and is recognised as *subordinate* to all-round development, it is excellent. Rightly used, play is an important factor in the education of the will.

10. *Coercive and Directive Discipline.*—Teachers, who for a long time, if not theoretically, have practically, regarded the school merely as a place where literary, mathematical, or scientific instruction is given to children, and who, consequently, have failed to recognise the commanding importance of its function in promoting the development of goodness and of force of character, are known to be frequently partial to what may be called the purely mechanical view of school-discipline. This may be called the *coercive* view. The good that play does, may be counteracted by such teachers, who imagine the constrained respect and apparent good conduct, in which the heart takes no part, is something worthy of achievement. They do not believe that milder discipline can possibly lead to good results. Coercing the children in their charge into an *affectation* of good conduct, they imagine the end is gained; whereas the good conduct is a sham. The teacher who is in command of the higher form of discipline, on the other hand, not only secures a *real*, as contrasted with an *affected*, good conduct and obedience, he also receives the highest respect of his pupils, which, in turn, evokes their own self-respect. Never repressing them, they come to look on him as a friend, and thus, through suggestion, he becomes capable of inciting them to act on their own initiative, and so to develope their will-power. Such a teacher may do much by suggestion as to games, which will call into exercise the child's initiative. In this way he will be, and is, building up their and the national character.

11. *Conclusions.*—The following are the most important conclusions in regard to the subject matter of this chapter:—

1. An educational system that fails to take account of the training of the human will as the fundamental element in developing personal and national force of character, utterly fails in one of its most important functions.
2. All teachers should, before commencing to teach, receive such psychological and other instruction as will enable them to appreciate and discharge this part of their task.
3. The mechanical discipline should be recognised as injurious, as tending to diminish force of character.
4. The only satisfactory discipline is that which secures obedience and good conduct through the pupil's own self-directed response to the personality of the teacher.
5. A strong respect for the individuality, and for the self-expression of a child, is to be expected of every teacher, since only by the tact and sympathy therewith associated, can the personal influence be *directive*, and not *coercive*.
6. The disciplinary relationship between teacher and pupil should always be regarded from the double standpoint, viz., that the development of character, and the securing of good conditions for instruction, are the real aims of all truly educational discipline.
7. Teachers, who fail to recognise this, should be required to first thoroughly inform themselves as to the theory of discipline, and then introduce the directive in lieu of the coercive form thereof.

CHAPTER XVII.

CHAPTER XVII.

Physical Culture, Gymnastics etc.

[G H. KNIBBS.]

1. *Introductory.*—Physical education, according to the French official programme for primary schools, has a double aim, viz. :—

(*a*) On the one hand, to strengthen the body of the child, to harden his temperament, to place him under the most favourable hygienic conditions for his general physical development.

(*b*) And, on the other hand, to bestow during his early life those qualities of address and agility, and that promptitude and certainty of movement, which, while valuable to all, are *specially* important for those who are for the most part destined to engage in callings involving manual dexterity.

And in the French view there are three classes of exercise that together indicate the range of physical education, viz. :—

(1) Observances of rules of hygiene, cleanliness, etc., and the development of habits conformed thereto.

(2) Gymnastic exercises.

(3) Manual work.

It is, of course, true that in each of these lie elements of physical education, but the conception is by no means exhaustive, nor does it convey any adequate idea of its importance.

2. *Two types of Physical Education.*—There are two types of physical education, viz. :—

(*a*) The *Empirical*, which does not concern itself with the physiological reasons for each exercise; and

(*b*) The *Rational*, which proceeds in every detail under the guidance of scientific knowledge, viz., human physiology, aiming at definite results, and utilising the data of anatomy and physiology to secure those results.

The former, viz., empirical physical culture, is often interested in questions of mere acrobatic gymnastic; its exercises may be graceful as far as movements are concerned; it may or may not dangerously tax the physical powers, heart, etc.; and may or may not produce exhilaration or great fatigue.

That such forms of physical education still exist is not mere imagination, and gymnastic exercises have in many places fallen into disrepute through their prevalence.

Thus in the 1897 Report upon Education and Instruction, Geneva,[1] reference is made to the fact that the earlier complicated apparatus, and too-clever exercises which inspired distaste with all children, are disappearing, in order to give way to *a rational medical gymnastic, and to school games in open air.*

This old gymnastic consisted in a series of researches, refinements, and efforts, and ended in transforming the gymnastic lesson into a school of acrobats.[2]

3. *Athletic Gymnastics.*—Athletic and acrobatic gymnastics belong to the empirical type, and the school-programmes of lessons therein, aimed at purely athletic, and sometimes even at acrobatic results.[3] In the case of the vigorous these were not good, while for the weak they were decidedly bad.

It is important to bear in mind that physical exercises, as such, are not necessarily corrective of mental fatigue; and Griesbach's and other researches[4] by means of the Æsthesiometer, in regard to fatigue effects, shewed that it may even be the reverse of beneficial. In both mental and physical efforts producing fatigue, a poison is generated, the accumulation of which, when not eliminated as rapidly as generated, produces a decrease of energy, or absolute loss of physical power, and also a sense of fatigue.[5] That this enfeeblement of the muscles, and feeling of weariness, are produced by the direct result of the presence of the poison, has been abundantly demonstrated.

Subjectively it is readily recognised that, when one has undergone great physical exertion, the ability to do mental work is enormously reduced, or, if done, it is at a great expenditure of effort. And although, subjectively, the induced bodily fatigue and muscular weakness following on mental effort are not readily recognised, they can easily be demonstrated experimentally.

It will be seen from the above, that the very common opinion that physical exercise may always be invoked, by way of relaxation, when mental fatigue has supervened, is seriously challenged.

Two things are at once suggested, viz :—

(*a*) The expediency of requiring, as advocated by Wagner,[6] a knowledge of school-hygiene on the part of teachers.

(*b*) A qualification of the merely athletic view of gymnastics.

Experiments have shewn that the severer forms of gymnastic exercises, such as may occasionally be seen in the German Turnhalle, are often as exhausting as mathematics—one of the most mentally exhausting of school-subjects. Thus, the rational study of the whole matter, has, it is easy to see, led to considerable modification of the attitude of educationists to the matter of school-gymnastic, and has forced a recognition of the fact that physical education, to achieve its purpose, must be subject to careful scientific development, in which it will avail itself of all that anatomy and physiology have to teach by way of guidance. 4.

[1] Rapport sur le Groupe XVII, Education et Instruction. Lausanne, 1897, p. 165.
[2] *Ibid*, p. 166.
[3] *Ibid.*
[4] Energetik und Hygiene des Nervensystems in der Schule. München, 1895. Hygienische Schulreform, Hamburg.
[5] Kraepelin, Professor of Psychiatry at Heidelberg, regards the effect of all severe mental exertion as identical in action with that of physical exertion. *Vide* "Zur Hygiene der Arbeit," und "Ueber geistige Arbeit." Jena, 1896-7.
[6] Unterricht und Ermüdung. Berlin, 1898.

4. *Rational Physical Culture.*—The object *par excellence* of rational physical education may be said to be the *increasing of human vitality*, since that is the foundation of all human effort, or, to change the figure, the credit balance on which we are continually drawing. Rapidity and precision of movement and muscular strength, while very important, are yet really subordinate, muscular power in itself being worth very little sacrifice. In certain types of gymnastic, the training a special set of muscles by, as it were, concentrating the whole effort of the human organism upon them, has often, while succeeding in its special aim, seriously impaired the organism as a whole. It is well known that athletes have permanently injured both heart and lungs in their training. Rational gymnastics specially avoids, therefore, *mere athleticism*.

The main sources of human energy are the carbon in food, and the oxygen in the atmosphere, the actual production of the energy arising from chemical combination of these two elements.[1] Viewed from this standpoint, it is at once evident that large lung capacity, and a vigorous circulatory system, are the secrets of an abundance of energy, and consequent power to accomplish such tasks as may be imposed upon us, and also healthy activity of the nutritive functions. Hence, rational gymnastic aims at their improvement. But other conditions also contribute to the result. In order to get rid of poisonous products generated in the organism, the efficiency of the excretory functions must be assured, so that physical education has regard also to the functions of the skin.

The object, then, of rational gymnastic may be more fully set forth in general terms as the development of the physical organism in such a way that its vitality and response to the will shall be as perfect as possible; in a word, that all its functions shall be maintained in their highest efficiency. It is at once obvious that, to achieve this, the whole treatment must be intelligent, every exercise having an absolutely definite aim, and contributing in the best possible manner to the desired end.

Unfortunately the best development of the human body does not, apparently, take place spontaneously. Injurious physical habits and postures are only too easily developed. Consequently, rational gymnastic must be not only *educative*, but also to some extent *corrective*. This is a further reason why the instructor must have the trained eye and specially informed mind to recognise the defects—why his knowledge of anatomy and physiology must be equal to guiding the scheme of gymnastic exercises by which defects are eliminated or improved.

5. *Various conceptions of Physical Education.*—Physical training of boys in London commenced about 1889 under the London School Board. Two systems were in vogue, viz., the Swedish and English. Although the former is generally admitted to be the most perfectly developed, it was decided in about 1893 to adhere to the latter. In the report on Physical Education in the School Board of London, by Mr. Thomas Chesterton, Organising Teacher of Physical Exercises under the Board, the objects are declared to be—

> To provide a means of recreation under discipline, and to raise the general standard of health by quickening the circulation, increasing the breathing capacity, promoting nutrition, facilitating the elimination of waste products from the system, and increasing the volume and power of the voluntary and the functional capacity of the involuntary muscles, thereby promoting all-round bodily development and growth.[2]

It is said that systematic physical training renders the senses more acute, and that there is a reaction on the muscular activity through which the body in general is much benefited. In common with all authorities on rational gymnastics, it is recognised that, as far as possible, the exercise should be relaxation, though of course it should not be wholly so, and, therefore, it should avoid all unnecessary mental strain, especially in the case of children whose school tasks have already fatigued them.

In designing the exercises, it was endeavoured to proceed on anatomical and physiological lines, with a view to counteracting "the prevalent *one-sidedness* of school life, from a physical point of view," and to correcting "the cramped positions assumed in the schoolroom"; hence, "the exercises may be considered as remedial movements."

It will be observed that the specialist in physical education recognises at once the unhygienic character of the position of the child during his school tasks in the English school. This position is exactly as it is with us, and the comment applies to every country that does not follow the Swiss system of using adjustable school desks.

Swedish gymnastic owes its present development to P. Henrik Ling (1776–1839), who was nominated in 1805 as Master of Arms to the University of Lund, and to whose initiative the founding in 1813 of the Central Institute of Gymnastic was due.

In this institution the gymnastic exercises are developed in a regular and continuous manner, and with regard to their functional influence, the choice of exercises being determined by the special needs of the body. They aim at absolute adaptation to the disposition and faculties of each individual, so as to produce perfect development and perfect self-mastery, nervous tranquillity, and equal and steady action. The scheme of movements has been developed with regard to every need of the human organism, so that, in adapting it to the individual, the health, strength, and necessary aptitude of the pupil or subject may be thoroughly developed.

Pædagogic gymnastics on the Swedish system have been developed at institutions in Norway, Denmark, England, Switzerland, the United States of America.

The work was actually seen by the Commissioners at the Central Institute in Stockholm, with classes of both sexes.

There is a general consensus of opinion that the details of the Swedish system have been elaborated with a degree of thoroughness as yet unexampled, and that the scientific basis of the whole is perfect. It does not follow, however, that a complete Swedish gymnastic should be introduced into schools, for reasons that will hereinafter appear. In order to understand the question, its general theory needs statement. Before passing to this, however, its importance may be outlined. 6.

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[1] Hæmoglobin, to which is due the red colour of blood, is contained in the red blood corpuscles, and readily becomes oxidised in the lungs to oxyhæmoglobin. This is carried in the arterial circulation to the various parts of the body, where (in the tissues themselves) it combines with carbon and carbon dioxide is formed. On return by the venous circulation to the lungs, the carbon dioxide is eliminated in the respiratory processes. These chemical combinations are associated with the production of heat, and are the main source of human energy.

[2] Special Reports on Educational Subjects. Vol. 2, p. 186.

6. *Importance of Gymnastic and Physical Culture generally.*—Statistics show that good gymnastic undoubtedly developes the human frame. An interesting illustration of this came under notice at the Drexel Institute, Philadelphia, where a statue representing the mean of the measurements of a large number of young American women exists. Since it was executed, physical education has made great progress in America, and the somewhat narrow-shouldered and flat-chested figure no longer represents the type of American women, their shoulders being broader and chests deeper. The splendid development of the Swedes is a further testimony to its value. It is affirmed, also, that predisposition to phthisis is combatted by developing, through suitable exercises, the chest capacity in childhood. The increase of breathing, however, that can be developed is very great, and the tone and strength thus given to the physical system appear to endow it with powers of resistance to the attack of injurious micro-organisms.

Physical culture, also, that leads to consciousness of precision and power in muscular effort, that engenders good habits as regards posture of body, that guides the whole life in regard to good physical habits, will build up the physique of our people. Viewed aright, it will be recognised as the complement of the other elements of education. That is evident in the following scheme shewing the theory of development.

Human duality.

Body needs—		Result—		*Soul* needs—
Nutrition (food).	Physical.	Growth.	Mental.	Experience (Knowledge).
Proper nourishment.	,,	Normal growth.	,,	Right education.
Physical training.	,,	Power.	,,	Mental training.
Physical precision.	,,	Skill.	,,	Mental precision.
Physical excellence and grace of form.	,,	Ideal manliness.	,,	Intellectual and moral excellence and grace of spirit.

Recollecting that there is an interaction between all these elements, such that any one can be made to contribute to and assist the other, and that the whole leads to the ideal human being of all-round development, it will then be realised that physical education is, throughout, the counterpart of mental education, important as making self-expression possible in its highest forms.

Reference has already been made to some of the misconceptions of physical culture and the dangers which result therefrom. One of the commonest misconceptions is that great muscular strength implies perfection of the human organism. As a matter of fact muscle-development may be pushed so far as to be actually injurious to the organism as a whole. The reason of this may be readily understood when one remembers that the enlargement of the muscle involves the supply of blood thereto, and if pushed too far the withdrawal from other parts may involve impoverishment of the vital organs.

7. *Outline of the theory of physical culture.*—Physical culture may be said to range over three elements, viz.:—I. Physical. II. Psycho-physical. III. Psychical.

These may be sub-divided as follows:—

I. Physical—(*a*) Health. (*b*) Strength. (*c*) Endurance. (*d*) Muscular control. (*e*) Muscular flexibility. (*f*) Muscular co-ordination.

II. Psycho-physical—(*a*) Physical courage. (*b*) Presence of mind. (*c*) Decision (will).

III. Psychical—(*a*) Expression of the soul through the physical organism. (*b*) Gesture. (*c*) Posture. (*d*) Reaction of the organism on the soul.

Physical culture may also be said to have two sides, viz., *Educational* and *Recreational*. The former proposes to develope both unconscious and conscious self-control and self-expression, by invoking continually the intellect and will.

The second is concerned with those elements that lead to psychical interest, and sense of physical or mental exhilaration.

The qualities of good physical culture, though in general the same for both adults and children, need more careful application in the case of the latter. For them especially it is important that it should be (*a*) efficient, (*b*) interesting, (*c*) simple, (*d*) educative, and to some extent (*d*) exhilarant, or recreative.

8. *Health elements in physical culture.*—Referring to I. (*a*) above, certain sets of exercises in hygienic gymnastic are directed immediately to the increase of the vitality or health of the human organism. The immediate objects of these may be outlined as follows:—

(i) To develope the chest capacity as much as possible, so as to produce free and deep breathing.

(ii) To develope the muscular power of the heart, and generally a healthy condition of the circulatory system.

(iii) To promote activity of the digestive organs (healthy action of stomach, intestines, etc.).

(iv) To promote activity also of the excretory organs (liver, skin, and kidneys).

(v) To develope symmetry and vigour of the body generally as aids to the general result.

A treatise on the details of physical culture would be perhaps out of place in this report; nevertheless, an indication of what has to be considered is not unimportant, as illustrating the difference between empirical and rational gymnastic.

Before developing a special set of muscles to attain some given end, say chest-expansion, it is often necessary to precede the special exercises for that purpose by preliminary exercises, the object of which is merely to lengthen or stretch other muscles, whose simultaneous development would otherwise take place, and either diminish the efficiency of the exercises with regard to the special object in view, or lead to unsightly developments. Such exercises may be defined as *preliminary corrective exercises.*

Speaking generally, it may be said that the corrective exercises have often largely to do with the stretching of a large number of anterior muscles, and it may be mentioned that obviously the exercises must be undertaken by some one who has a rational understanding of them. It may also be noticed that it is sometimes necessary to prevent the innervation of special muscles, with a view to guarding against development, and the pupil needs guidance in regard to maintaining them in a state of passivity.

The scheme of developing the chest-capacity by means of physical exercises depends upon the fact that certain movements tend to lift the walls of the chest through muscular traction, and that deep-breathing exercise not only utilise the whole of the lung substance, but also tends to enlarge the chest cavity.

In regard to the other exercises, viz., (i) to (v) abovementioned, it is sufficient to observe that they are designed so as to assist the physiological activity of the various organs referred to.

9. *Other elements in physical development.*—In scientifically developed gymnastic special exercises are designed for increasing strength, endurance, muscular control, muscular flexibility, and muscular co-ordination. [I. (*b*) to I. (*f*) in section 7.] These have been all worked out physiologically and anatomically, but in their application they have to be used according to the development of the children or adults who are to profit by the gymnastic.

Gymnastic exercises may be taken either individually or collectively. In order to perfectly reach their end they ought to be applied to the individual, that is to say each child must be taken separately, and the exercises selected in regard to his special needs. This being hardly practicable in connection with schools, the exercises must be collective and adapted to what may be called the group-needs of the children. In either case they must be intelligently directed, that is to say, by a competent student of scientific physical culture, and not merely by an athlete, however excellently the latter may be able to perform his exercises. This is what is thoroughly understood in American, Swedish and Continental conceptions of gymnastic, and it explains why, in the programme of instruction to teachers, they are compelled to understand something of the structure of the human body. (See chapter XXXV., section 16).

It may be repeated that competency to direct gymnastic exercises requires, according to the French administration of primary schools, that teachers should qualify themselves to understand the mechanism of the human frame, the conditions of equilibrium of a body resting on a plane, inertia, force, weight, and centre of gravity in this connection, the organs of locomotion, their general structure and articulation, the distribution and form of the muscles, their structure and properties, and further the functions of the body in relation to gymnastic exercises. Moreover, they are required to understand the functions of digestion, circulation, respiration, and of the skin, and the relation of gymnastic thereto. They have further to understand the influence of gymnastic upon physical and moral health, and to appreciate the reason why it is necessary to regulate its exercises.

10. *The psycho-physical and psychical aspects of gymnastics.*—Bearing in mind the exigencies of life, it is easy to see that these aspects of gymnastic training are among the most important. Certain exercises are specially designed to call into action physical courage, to habituate the mind to self-control in moments of real or apparent danger, and to accustom it to instant decision. Reference has been made in another chapter to the psychological importance of habit. Both the physical and mental habits which scientifically directed gymnastic induces, are of immense practical value, not only in the greater and more tragic moments of life, but in its every day routine. This would explain why it is fully recognised in Europe and America that an instructor in gymnastic must not only understand its physiological basis, but also its psychological basis. In the chapter previously referred to, viz., in the preceding section, reference is made in section 3 to the applications of the conceptions of psychology to education. In regard to physical education, these touch general hygiene, the essential characteristics of temperance, the nature of children's exercises and games, and also the more formal exercises in gymnastics. It is this *thoroughness*, characteristic of all European and American education, of which we stand in so much need, not only in regard to physical culture, but all other subjects.

The psychical aspects of gymnastic go still deeper. There is a well-understood, and yet, nevertheless, very mysterious, relationship between the posture of the body and the inner state of feeling. Courage and hope, on the one hand, or fear and despair on the other, tend to express themselves in a fairly definite way in the pose and carriage of the body. Straightforwardness, candour, and magnanimity have a physical expression which never can be mistaken for that of duplicity, secretiveness, and paltriness. An erect and fearless attitute of body tends also to create uprightness of character and to stimulate courage, and similarly in regard to almost every attribute of the human soul. The subject has been exhaustively studied, and what may be called the laws of gesture and posture, have been theoretically expounded. It is sufficient here to observe that it is well within the limits of practical education to secure a much more favourable reaction of the body on the mind, and *vice versa*, than is at present characteristic in our State.

Proper seating in schools, and a well devised system of gymnastic, would do much to eliminate the disagreeable "slouch" of a certain class in the community, and there can be little doubt that we were unwise in not having paid greater attention to these matters.

11. *Physical culture and manual training.*—In Sloyd, and in other forms of manual training that have been elaborated with any degree of thoroughness, great attention has been paid to the position of the body during work, with a view to selecting the best possible position for each exercise. In considering the matter two ends are kept in view, viz.,—

(*a*) Efficiency in regard to the execution of the particular work;
(*b*) Normal development of the bodily frame.

Some regard has also been had to symmetry of the body, as well as to ambidextrous development.

Physiologists of the present time are paying considerable attention to questions of symmetry of development, and psychological consequences flowing therefrom are also being studied. The matter goes further than might at first sight appear. For example, it is said by Piper that opposite symmetry in writing with either hand, is characteristic of imbecility; that is to say, feeble-minded children, in proportion to their mental feebleness, tend to write what has been called "looking-glass writing" with the left hand. The significance of questions about symmetrical development forms the subject of the Huxley lecture for 1902 by Professor D. J. Cunningham, of Dublin[1], and there is already an extensive literature upon the whole subject.

12. *Physical culture in Tasmania.*—For about 18 months past an interesting movement has been going on in Tasmania in regard to physical culture, and it is interesting to note that it is proceeding on rational and not on empirical lines. The "Instructor and Organiser of Physical Culture" under the Tasmanian Government is Mr. Christian Bjelke-Petersen, an expert in the Dano-Swedish and American systems

[1] "Right-handedness and Left-brainedness," by Professor D. J. Cunningham, M.D., D.C.L., F.R.S., Journ. Anthropolog. Instit. Great Britain, etc., Vol. XXXII., 1902, p.p. 273-295.

systems of physical culture.[1] The Tasmanian Government provides for the instruction of its primary-school teachers of both sexes and all ages in the physical culture exercises. Two courses are given to the teachers in training, and two holiday-courses for other teachers, the attendance at the latter being optional. It is interesting to notice in regard to the optional holiday-courses that there are more applications than the Government are able to provide for; and it has been sufficiently demonstrated that, notwithstanding the neglect of physiology, psychology, and similar subjects in the education of teachers, they are nevertheless able to acquire a sufficiently intelligent knowledge of the exercises to rationally apply them. It is worth noting, too, that they realise the aims and methods of rational physical culture well enough to feel enthusiasm in regard thereto, and to recognise its value to the future of the Tasmanian people.

Mr. Petersen advocates, as everyone who understands the hygiene and physiology of gymnastic must, the adoption of rational rather than of empirical physical culture, and points out that the former comprehends every benefit which gymnastic can confer, and at the same time avoids the dangers of mere athleticism. He remarks on the importance of recognising that exercises in physical culture are not to be regarded as mere games, and that they have really educational value. In the instruction of teachers, his method ensures that the object of each exercise shall be rationally appreciated by his hearers, so that in reproducing the exercises they understand exactly what they are doing. This method of training differs absolutely from the empiricism of teaching a set of exercises from a manual without any definite knowledge of the aim of each exercise. It is needless to say that this proceeding must commend itself. The theory of physical culture for children outlined in the next section represents, very imperfectly of course, and in brief, his conception of the proper way of teaching gymnastic to school children.

13. *Physical culture for children.*—A scheme of physical culture for school children must, while efficient and rational, be also agreeable to them. Though disciplinary and educative, calling upon them for exercise of intelligence and will, it must at the same time not over-exhaust the children, or leave them, as it so often did in the earlier forms of Swiss gymnastic, and still apparently does in some forms of German gymnastic, with a feeling of distaste for it. The qualities required must, therefore, be those set out in section 7 herein, viz., it must be efficient, interesting, simple, educative, and exhilarating. In his own practice Mr. Petersen makes the body of the work educative, and its conclusion recreative, so as to retain as far as possible the physic interest of the children. He holds that letting them depart without any feeling of dislike for the lesson, is the secret of making subsequent lessons truly beneficial.

14. *Qualifications of an instructor in physical culture.*—The wide world over, the reign of the mere empiric seems to be approaching its end. Rule-of-thumb has had its day, and its insufficiency is well understood. In everything the empiric sees but the *mechanism*, and consequently his judgment is easily led astray, solicited by meretricious and superficial elements. He cannot really distinguish between athleticism and physical culture, the difference between the two being by no means evident to the man who sees mechanism only. That physical exercises should be directed by scientific knowledge seems to him absurd and unnecessary. Quite unconscious of how much lies in the subject, he regards himself as competent to pass judgment upon such an apparently simple thing as gymnastic. Smart appearance, and evolutions that border on the acrobatic, are apt to win his commendation, and rhythmical movements accompanied by music are imagined to be especially good. The ability to distinguish the difference between mere rhythmical or athletic, and true physical-culture exercises, of which of course the former may form a part, requires, as all continental nations recognise and as is thoroughly understood by the educationists of the United States, a sound knowledge of first principles. For example, every gymnastic teacher should have:—

(*a*) Some knowledge of Psychology.
(*b*) Some knowledge of Anatomy and Physiology.
(*c*) Some knowledge of the general Theory of Education,

so that the exercises may be really efficient and from every point of view the mechanical, physiological, and psychical wisely directed; and moreover, that they may be properly adapted to the child-body and child-mind.

15. *Conclusions.*—The following conclusions suggest themselves:—

1. Insufficient attention has been paid in New South Wales to physical culture and gymnastics.
2. Systematic instruction therein should be given to all teachers in training by a competent instructor having the necessary theoretical and practical knowledge. The theoretical knowledge should include sufficient general scientific education, and knowledge of the art of teaching his subject to others.
3. With a view of qualifying teachers in different parts of the State to give instruction in their schools, holiday-courses, similar to those in Tasmania, should be given in the larger country towns.
4. Suitable gymnastic exercises on the lines of a rational physical culture should form part of the ordinary curriculum in schools.
5. Special effort should be directed to making these exercises as *attractive* as possible to the children, as well as *educative*.

It may be said finally, that although the results immediately reached will not be as satisfactory as could be wished, owing to the limited education of the majority of the teaching-staff of this State, the work is well worth doing, and can be made the beginning of a better order of things. There is every reason to believe that the teachers of New South Wales will appreciate its value and help forward the movement, since they are not lacking in zeal.

It may be pointed out that a few lectures are given on physiology and school-hygiene by Dr. Roth. The work, however, would have to be much increased to bring it into line with the best European training. It may also be mentioned that the fundamental principles of physical culture outlined in this chapter are identical in their aim with Dr. Roth's view.

[1] The importance of systematic physical culture is indicated in the subject matter of a paper on the "Growth an development of Hobart School-boys, with some notes on Anthropometry," by Christian Bjelke-Petersen, read befor Section J of the Australasian Association for the Advancement of Science, Hobart, 1902, pp. 823-829.

CHAPTER XVIII.

CHAPTER XVIII.

Manual Training.

[J. W. TURNER.]

Introduction.—One of the very noticeable features of the Primary School system of the present day in nearly all countries is the very decided trend in the direction of giving the pupil a good general education; and so in the common school, which is responsible for the education of the masses, provision is made for instruction in technical, industrial, and commercial subjects, by means of manual training classes, art classes, commercial classes, classes for domestic economy, lessons in elementary science, and Nature study.

English Practice.—In England the awakening to the necessity for less book work and more practical teaching is general. All the large towns have made a distinct advance in presenting a broader and more interesting programme of work in their schools. Manual Training is universal, art classes and art centres have been formed in the large cities, a little commercial training is given, and some schools have well furnished laboratories for the teaching of elementary science. For obvious reasons country schools have not the facilities possessed by city schools for giving the broader education, but steps have been taken, with the co-operation of peripatetic teachers, to impart elementary science in the schools of the rural districts. Manual Training in British schools starts in the Infant Department, where it is taught as part of the Kindergarten gifts and occupations. When the pupil is promoted to the primary school he has received a certain amount of hand-and-eye training. This training is continued during the junior stages of his primary course by means of modelling in cardboard and in clay, and in some schools of exercises in Sloyd. As the pupil advances in the school, he becomes eligible for a position in the workshop, where he is taught to work in wood or iron. The subjects of Domestic Economy in the scheme of education for girls receive equal attention with those considered necessary in the training of boys. The results of investigations of the Manual Training system, as seen in English and Continental Schools, are appended.

Training in Woodwork—England.—This subject is considered an ordinary branch of school work in the upper classes. No charge is made for tuition, material, or tools. The workshops are all well-appointed, and are usually in charge of young, specially-trained teachers. Some pupil-teachers give up their academic course, and choose the technical side, for the purpose of qualifying as teachers of Manual Training. The result is that the Manual Training classes are well disciplined and well instructed. The work benches are much smaller than those in use in New South Wales State schools, and are so constructed that two boys, one at each end of a bench on opposite sides of it, can work at the same time. The time devoted to the subject is two hours per week, and the methods of instruction are very similar to those adopted in our own workshops.

Training in Ironwork—England.—The Commissioners visited a laboratory situated in the centre of a large and important engineering district in the East End of London. Representatives from seven neighbouring schools attend this institution. At the time of the visit applications from two other schools in the same district could not be entertained, as all the vacancies were filled. In the workshop 500 boys receive instruction each week. All the boys from Standard V, that is, boys from about the age of 12 upwards, take the work, and the full course is of three years' duration. They attend in classes of about thirty-six, and are taught by a master and an assistant. The pupils work in iron, steel, tin, zinc, and copper. They spend one hour and a half each week in practical work in the shop, and three-quarters of an hour in drawing. All practical work is done from working drawings executed by the pupil. Each boy has his own stand, and all the necessary instruments are provided free of cost. The cost of each stand with its fittings is 35s.; the cost of the whole plant in the workshop, £300.

The workshop is conducted in the basement of the Board School, and is used as a Continuation School at night. The boys are encouraged in the third year of their course to make their own designs, combining wood and metal. Every boy before he completes his third year makes an electric bell, a motor and a coil. Much of the physical apparatus in the adjoining school laboratory is made by the boys of the workshop, and many of the tools used are their handiwork. Theoretical information regarding the nature of metals is given throughout the course. The head-master of the school in which the workshop is situated bears testimony to the valuable hand-and-eye training which the boys receive. This, he states, is the primary value of such an institution; but it is a fact that, although the idea of making tradesmen in this workshop is never thought of, the boys, when they have gone through the course, have no difficulty in obtaining good positions in the engineering shops and foundries so numerous in the locality, and employers, while starting such boys on fair wages, concede a year's apprenticeship, and give the youthful employees an opportunity for acquiring a good trade.

A school which interests hundreds of pupils annually; which makes them careful and accurate in measurement; and which, later on, fits many of them for industrial pursuits, must be classed as serving its purpose. The Commissioners would like to see such schools established in Pyrmont, Newcastle, Lithgow, Balmain, and other industrial centres.

Manual Training in Italy.—Side by side with this experience of Manual Training in England, the results and impressions of a visit made to a special school in Turin in the north of Italy are given. Pupils from the elementary schools of the city are enrolled in the school when they have attained the age of 11 years, and the course extends through four years. The teaching is free, except that a nominal charge is made to ensure the proper care of tools. All materials and tools are supplied by the Municipality.

The staff consists of ten masters for the various branches, and the attendance of pupils is 150. The present building is poor and altogether unsuitable for the work carried on. The Municipality has secured a good site and is about to spend 300,000 lire (about £11,200) on up-to-date buildings. The programme includes arithmetic, grammar, physics, drawing, design, woodwork, ironwork. The training, as in East End London, has purely an educational value, and in no branch do the teachers aim at making tradesmen, although many of the old pupils are among the very best workmen in the city. The third-year work in wood—constructing patterns and models—is simply a revelation as to the extent of boys' powers. The amount of work accomplished is great. The furniture is much like that already described in English schools; the benches are single and are each provided with two lockers for holding the working tools. No special attention is given to ambidextrous work in this school. Practice in iron and wood work alternates every six months. In the ironwork shop there is much to show for the time spent; and everything, from the simple piece of steel to the neat little machine, all handwork, is of good quality and finish. In a sense, this institution is secondary in much of its working, and could be classed with the Manual Training High Schools of America, but the age limit (many of the pupils starting at 11 years) brings it within the scope of the primary system.

Manual Training in Switzerland.—One of the evidences of the Swiss teachers' devotion to their calling was observed in the Normal School, Lausanne, during the Summer Vacation of 1902. The regular students were absent on their holidays, and the class-rooms and various workshops of the institution were occupied by 150 teachers from different Cantons in Switzerland learning some particular branch of Manual Training, in order to introduce the work into their own schools. Their attendance was purely voluntary, and their object was to gain knowledge in Manual Training, which would be of advantage to their pupils, both from the educative and practical points of view. Many of these teachers came from country places in Switzerland, and the vacation classes afforded them the only opportunity for obtaining special instruction in Manual Training. As seen at their work, they showed great earnestness, industry, and assiduity, and all, men and women, seemed bent on getting the fullest knowledge of the branch they were studying in the time that the vacation lasted.

Each Canton grants £6 per teacher towards the cost of fees and board and lodging. The fees absorb £3 of the grant, and the remaining £3 do not pay for the expense of living; but these teachers, although their salaries are small, bear the cost ungrudgingly, knowing that they are working for the good of their pupils.

This spirit of devotion to their calling is very marked among the Swiss teachers; and, as one watched these happy, intelligent men and women in the class-rooms and workshops, the reason for the success of the Swiss system of education was, in some degree, explained.

Trained teachers, those engaged in the Manual Training Schools of Lausanne, are employed to give the instruction, and the course comprises seventeen branches. Only one branch can be taken at a session, and the school teachers are at liberty to choose those branches which will be most useful to the children of their districts. The branches most popular are bookbinding, card-board work, clay-modelling, wood-carving. The bookbinding is only elementary in character. The card-board work is very practical in its application. The clay-modelling is from Nature. In wood-carving some very superior work is done.

An interesting conversation with one of the teachers engaged in the summer classes elicited some information on school life in rural parts of Switzerland. This gentleman's school has an attendance of 100 pupils, and is situated near Zurich. He is not able to get sufficient manual instruction in his usual daily programme, and, therefore, he holds voluntary classes on Saturday afternoon for the older boys in the school, and for those who have recently left. He has no difficulty in getting a good attendance. The boys willingly give up their pleasure for the instruction. Sport in Switzerland comes second to work. The people work hard, and the boys at school learn early the meaning and value of industry and perseverance.

Manual Training for Boys in Canada.—About three years ago Canada made a strong forward general movement in the direction of introducing Manual Training into her system of public instruction. The impetus came through the munificence of one of her great public men, Sir William Macdonald, who used a portion of his wealth in establishing and equipping Manual Training Schools in several of the large cities of the Dominion. The gentlemen entrusted with the administration of Primary Education in Canada were requested to furnish reports and recommendations as to the best methods of teaching the subject, and the question received the most thorough consideration.

Mr. J. L. Hughes, Public School Inspector, in his report on Manual Training, presented to the Toronto Public School Board in December, 1900, says: "Every subject on a school programme has two sets of advantages. . . . . It may be approved for its educational value, or for its economic or practical value. There should really be no opposition between these values. The most educative subject should be most practical in its influence, and the most practical subject may be made most educative. . . . . A correct system of educative Manual Training should be logically based on the work done in the Kindergarten, and should be adapted to the ages of the boys and girls, too, as they grow older." In summarising his chief reasons, educative and economic, for the introduction of Manual Training, he states:—

Educative Reasons:—"Manual Training is educative chiefly because of its use in the development of power. . . . It develops the brain because the mind is called into activity in guiding the hand. . . . . One of the chief reasons why so many pupils are lacking in independent power when they leave

leave school is the fact that their work in school has been chiefly the taking in of knowledge. . . . The working out of knowledge in some practical way is the only sure way to give it real value, and the only sure way, too, to fix it clearly, definitely, and availably in the mind. . . . Manual Training offers many varieties of opportunity for motor or executive mind training, and it is therefore of vital importance in the training of an independent, original, and self-reliant race, with power to initiate and accomplish new ideals and plans. . . . It trains the observant powers. . . . It aids in definite, independent and purposeful observation. . . . It forms the best possible basis for mathematical culture. . . . The development of apperceptive centres of size, form, relationship in the minds of the children is the true basis for mathematical power. It helps to form accurate and definite conceptions in the minds of the children. . . . It aids in the development of the power of attention, and the power to give concentrated and sustained attention is the basis of all real intellectual progress. . . . It increases the opportunities for discovering the special power of each individual pupil. . . . It not only aids in revealing the special ability of the child, but it helps to reveal the child to himself. . . . It is a great aid in discipline. . . . It helps to form habits of exactness, definiteness, and accuracy. . . . It stores the mind with definite, clearly conceived, thoroughly understood ideas that form the basis of accurate thinking, and clear insight in maturer years. . . . It aids in physical culture. . . . It is one of the most perfect tonics for the nervous systems of both children and adults. . . . It develops the muscular sense."

Mr. Hughes, in his report, quotes Dr. Birch-Hirschfelder, of the University at Leipzig, on the hygienic value of Manual Training in the following extract:—"Instruction in manual dexterity, however, acts in a much higher sense upon the *nerves* than upon the *muscles*. It works upon the organs of sense, such as sight, muscular sense, &c., which it brings into continual combined activity, and it works upon the peripheral regions of our nervous system. Instruction in manual dexterity is in a higher sense gymnastic of the nerves, and just because it is a gymnastic of the nerves, it has an especially unburdening effect upon the brain, which has been strained by one-sided activity."

Mr. Hughes in continuing his own report, says: "Manual Training is the best possible change from study and mere book work for the direct purpose of giving culture. It makes children happy. They are happiest when using their highest power. Their highest power is selfhood, and the highest function of selfhood is original, independent, creative work in constructing something useful. . . . It is the only logical basis for a system of technical education in higher schools. . . . It has many advantages in helping to lay a true moral basis for full character development. . . . It gives the child correct ideas in regard to work. . . . It develops the virtues of neatness, accuracy, diligence, perseverance, order, and definiteness. . . . It preserves the taste for work that children have naturally, and increases respect for honest labour. . . . It increases the proper respect of men and women for their own powers. . . . It makes men more truly practical, more operative, more executive, and more determined to act well instead of merely thinking and feeling well. It has a direct moral influence. Swedish statisticians claim that since the introduction of Sloyd into the schools of Sweden the people have become more thrifty and less drunken."

Economic Advantages.—"While it does not teach trades, it gives such a training to hand and eye, acting in harmony with an independent mind, as will best qualify for any trade or occupation. . . It enables workmen to meet new conditions in the ever progressive evolution of productive machinery. . . It gives special training in the powers required by the great majority in making a living. . . . It aids in qualifying all pupils to reach a higher condition of skill in any trade or occupation they may choose. By increasing the possibilities of attaining a higher degree of skill, Manual Training lays a broader foundation for individual and national wealth. The skilled workman has greater producing power than the unskilled workman. The increase of wealth-producing power adds to the possibility of comfort and culture in the home, and all the incidental physical, intellectual, and moral advantages resulting naturally from such improved conditions. Manual Training accomplishes its best work in the early years of a child's life."

Mr. Hughes concludes an able report, of which only the most salient points are given, by submitting a few extracts from the report presented to the Imperial Parliament by the Commissioners on Manual Instruction in the primary schools under the National Board of Education in Ireland, in the year 1898, after taking the evidence of 186 of the leading educators of Europe:—

We express our strong conviction that manual and practical instruction ought to be introduced, as far as possible, into all schools where it does not at present exist, and that in those schools where it does exist it ought to be largely developed and extended. We are satisfied that such a change will not involve any detriment to the literary education of the pupils, while it will contribute largely to develop their faculties, to quicken their intelligence, and to fit them better for the work of life.

The present system, which consists largely in the study of books, is of a one-sided character; and it leaves some of the most useful faculties of the mind absolutely untrained. We think it important that children should be taught, not only to take in knowledge from books, but to observe with intelligence the material world around them; that they should be trained in habits of correct reasoning on the facts observed; and that they should, even at school, acquire some skill in the use of hand and eye to execute the conceptions of the brain. Such training we regard as valuable to all, but especially valuable to those whose lives are to be mainly devoted to industrial arts and occupations.

We have the practical experience of those schools in England, Scotland, and on the Continent of Europe, in which such a system as we recommend has been already introduced and tested. The evidence we have received on this point is absolutely unanimous and, as we think, entirely conclusive. We have been told over and over again that the introduction of manual and practical training has contributed greatly to stimulate the intelligence of the pupils, to increase their interest in school work, and to make school life generally brighter and more pleasant.

We cannot but regard it as a strong proof of the usefulness of this branch of school work that the testimony of those who have thus had an excellent opportunity of practically estimating its usefulness, is altogether to the effect that not only have the hand and eye training exercises been effective in attaining the objects already enumerated as specially aimed at in their introduction, but that they have contributed notably to the improvement of the work of the school all round.

It makes the children alert; it makes them more intelligent; it is entirely a training of the intelligence, and there is no getting off with guesswork; it cultivates the power of rapid observation; it makes the children from the very first attach great importance to exactness; it goes to develop the inventive faculty; it is a relief to the children by varying the nature of their school work; refreshed and brightened by it, they have greater zest for their book work; it has been found an effectual check to nervousness; it gives a dull child the chance of getting on to the same plane with smarter children, and thus gives to dull children a useful incentive to exertion in the other work of the school; the exercises in it are the most popular with the pupils.

Mr.

Mr. Hughes' recommendations are as follows:—

(1) Occupations and clay-modelling in Kindergarten.
(2) A thorough system of drawing in all grades.
(3) A progressive system of work in card-board construction for First and Second Book class s.
(4) Third Book classes—Girls.—Sewing.
Boys.—Knife work with thin wood and Sloyd work.
(5) Fourth and Fifth Book classes—Girls.—Sewing and cooking.
Boys.—Work in wood.

Practical effect was early given to this valuable report, workshops were established, pupils enrolled, and *specially trained instructors holding English, German, and Swedish diplomas engaged.* Two of these gentlemen, the Director of Macdonald Training Schools for Ontario, and the Superintendent of Macdonald Training Schools, Ottawa, have collaborated in the production of a manual on card-board modelling, which is certain to prove a useful work in the hands of all who will be required to teach the subject.

The course outlined in this manual extends over three years' work, coinciding with the ages 7, 8, 9, and fifteen models are prescribed for each year. Five supplementary models are added to each year's programme for the benefit of the more adept pupils. The book contains some general suggestions to teachers on tools and materials, and shows clearly by means of diagrams the plan of instruction to be adopted.

Domestic Economy—England.—The Commissioners studied the schemes for teaching Domestic Economy (and in many cases saw the actual work of the pupils) in London, Liverpool, the Hague and Copenhagen. The London School Board is making great efforts on behalf of its girls in this direction, and its scheme of domestic teaching is deservedly popular with parents and pupils. In the first place, it has selected a competent body of teachers to control the work. These have been thoroughly trained in one or other of the excellent Training Colleges for Cookery existing in England. They not only know the theoretical and practical sides of their subjects, but they are able to govern classes, and to impart their knowledge in an attractive manner.

Cookery—New South Wales.—Upwards of fourteen years ago the Department in New South Wales made an excellent start in its method of teaching Domestic Economy in our State Schools. A fine selection of intelligent young ladies, including some of our best ex-students from Hurlstone Training School, was made, and the class, thus constituted, was specially trained in the principles of cookery. On the completion of the course, these ladies were readily engaged to take charge of various cooking centres throughout the State. The movement was decidedly popular, as shown by the eagerness of the people of certain localities to get a cooking school in their midst.

Up to the present day the usefulness of the Cookery Schools, under the capable management of several of these trained teachers, has been maintained at a very high level of efficiency. In order to keep up the supply of teachers of cookery, probationers have recently been appointed to the Cookery Schools. These have been selected from the senior girls in our Public Schools who have shown special aptitude for the duties. Their training consists of practical work and demonstration.

The following are the conditions of scholarships in connection with the scheme of training teachers of cookery in New South Wales, lately introduced:—

(1) That the length of training be two years.
(2) That the first six months be spent in a Cookery School entirely under the supervision of the Cookery Teacher.
(3) That the course of lessons at the Technical College embrace High Class Cookery and Domestic Economy.
(4) That the last six months of training be spent in different Cookery Schools, so that each student may have the advantage of having noted different methods of management.
(5) That students be required to undergo an examination at the end of the first year; and if they prove satisfactory a salary of £20 be granted them for the second year.

Cookery—England.—The National Training School of Cookery, Buckingham Palace Road, London, and the School of Domestic Economy, Liverpool, prepare young women for positions as cookery teachers in the schools of the English School Boards. Candidates for employment in Board Schools must produce a certificate showing that they have been trained in the three following sections:—

(a) Cooking (plain course).
(b) Laundry work—washing and ironing.
(c) Housewifery.

These particular Training Schools do not complete this course under twelve months, and one-half of the time is devoted to cooking and the chemistry of food. Practice in teaching is obtained by means of classes of girls who attend from the schools in the locality.

Laundry—England.—In a Board School, Highgate, London, the Commissioners saw the regular lessons in Laundry Work. They desired to see this branch of Domestic Economy, chiefly to note how its introduction was viewed by the pupils and parents. They could judge by the strong personality of the lady in charge that she had no misgivings as to the value of Laundry Work. While she conversed with the Commissioners, her girls—about twenty in number, from 11 to 14 years of age—went on with their washing and ironing. There was proof that the instruction was thorough, and the girls attacked their work with an earnestness that carried conviction.

The Commissioners had already noticed in one of the Training Schools the work done over the wash-tub by educated, refined young women. There were no accessories in this Training School, and the cleansing of the clothes was accomplished by knuckle, hand, and arm work. The work was thoroughly performed, and carried with it no sense of degradation. The whole surroundings and teaching lifted the training to a high level. This was the experience of the Training School; this was also what was experienced in the Board School.

At first there was a little prejudice on the part of some mothers against the washing and ironing; but when the teacher had the girls long enough to show them the value of the subject, and its usefulness to every one, rich or poor, all opposition was removed, and the work afterwards proved very popular.

The Commissioners were quite prepared to hear the opinion expressed by the enthusiastic teacher that Laundry Work as a mental training is of far more value than cooking. They were quite convinced that in her teaching she had given the subject its true scientific and social value.

Housewifery—England.—In another London school a class of girls was seen, under the *active* supervision of their teacher, engaged in cleaning house furniture. In all these exhibitions of Domestic Economy the active supervision exercised by the teachers in charge was a strong feature. To give orders at a distance, and to inspect the work of the pupils perfunctorily, would give little trouble, but would not meet the standard of thoroughness demanded in these institutions. The Commissioners consider that the scheme of Domestic Training as seen in the Board Schools of England might with great benefit be introduced into our Girls' Departments, not as an extra subject, but included in the general domestic course.

Cookery—Copenhagen.—In a primary communal school of Copenhagen the cookery classes have some interesting features. The food is supplied free of charge; the education, which is also free, is carried out on the family principle under the supervision of a teacher. Six girls, as a rule, form the family, and they appoint their chief, generally the most experienced girl. Each family has its own stove, apparatus, and furniture. The girls get experience in both gas, coke and wood stoves. They have three hours' practical teaching and one hour's theory every week. They wear a pretty uniform. In all the Danish Cookery Schools great care is taken with the drainage and construction of the buildings. The white Dutch tiles on the walls give a very neat appearance to the rooms, and all the furniture and cooking utensils are scrupulously clean.

Needlework.—The tendency in the teaching of needlework is towards the practical side. Instruction includes cutting out and making of clothing, repairs, knitting, darning. Hand-sewing is widely prevalent. In but very few schools are sewing machines in use. Considering the amount of machine sewing in the trades of tailoring and dressmaking, and also in the home, it would appear that the introduction of sewing machines on the Manual Training side would be quite as rational as the use of type-writing machines on the commercial side. It is known that some of the large schools of this State are using sewing machines, but, as in other parts of the world, they are not general.

The following is the course for wood-work in New York:—

SHOP WORK COURSE, NEW YORK CITY, U.S.A., FEBRUARY, 1903.

Grade 5 B.

1. Label. 2. Pencil-sharpener. 3. Thread-winder. 4. Tip cat. 5. Glove-mender. 6. Paper knife. 7. Letter-opener. 8. Strop stick. 9. Original modification of model offered by the shop instructor.
The mechanical drawing and applied design for the ninth model is to be furnished by the class teacher.
Communal exercises are to be made after the decorated model is complete.

Grade 6 A.

1. Marble board. 2. Knife board. 3. Pen tray or blotter. 4. Original modification of model offered by the shop instructor.
The mechanical drawing and applied design for the fourth model is to be furnished by the class teacher.
Communal exercises are to be made after the decorated model has been completed.

Grade 6 B.

1. Flower-pot stand. 2. Quoit peg, Christmas-tree stand, or end mortise joint. 3. Original modification of model offered by the shop instructor.
The mechanical drawing and applied design for the third model is to be furnished by the class teacher.
Communal exercises are to be made after the decorated model has been completed.

Grade 7 A.

1. Boat model. 2. Original modification of model offered by the shop instructor.
The mechanical drawing and applied design for the second model is to be furnished by the class teacher.
Communal exercises are to be made after the decorated model has been completed.

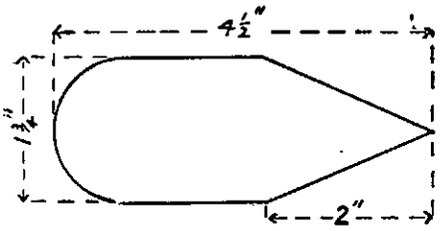
Grade 7 B.

1. Level or dove-tail joint. 2. Original modification of model offered by the shop instructor.
The mechanical drawing and applied design for the second model is to be furnished by the class teacher.
Communal exercises are to be made after the decorated models have been completed.

WHITTLINGS MODELS GRADE 5B.

WORKSHOP SCHEDULE

FEB. 1903



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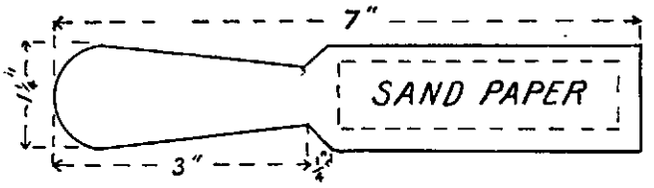
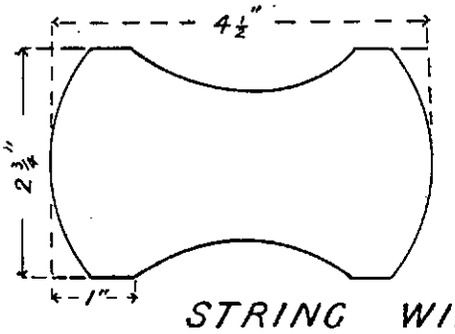
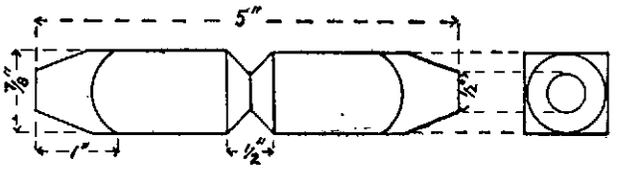


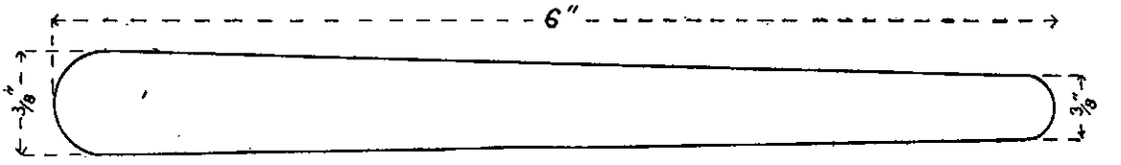
PENCIL - SHARPENER



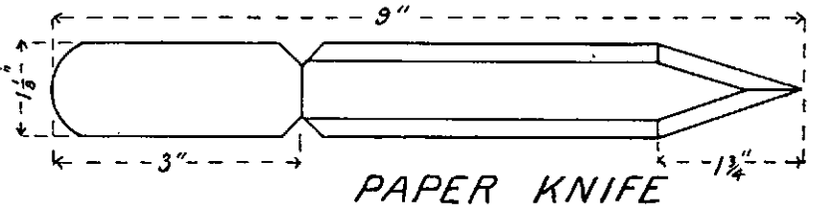
STRING WINDER



TIP-CAT

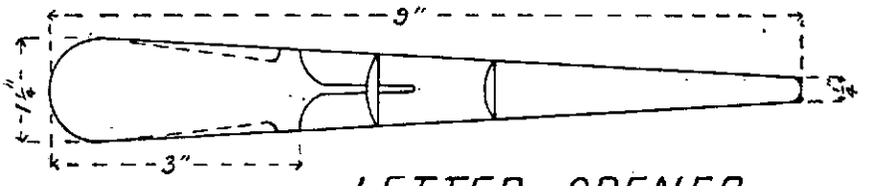


GLOVE MENDER



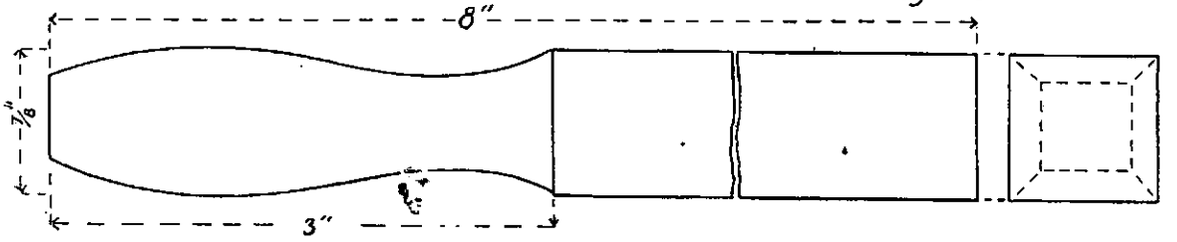
PAPER KNIFE

BEVEL ON ONE SIDE ONLY –



LETTER OPENER

Rapid Workers may shape handle as shown by dotted lines.

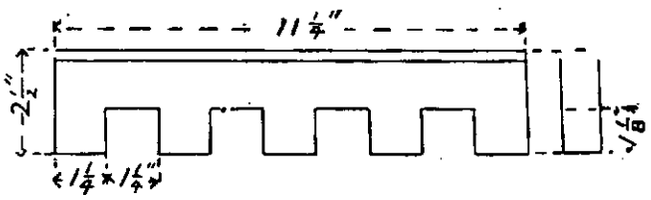


STROP STICK

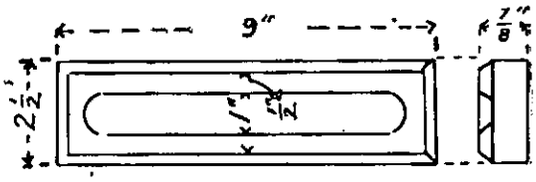
MODELS - GRADES 6A-7B.

WORKSHOP SCHEDULE

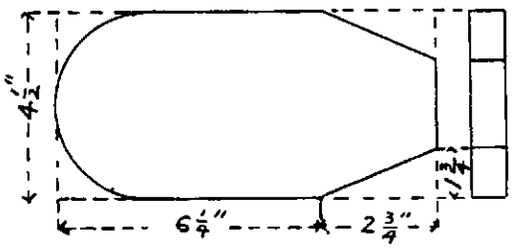
FEB. '93



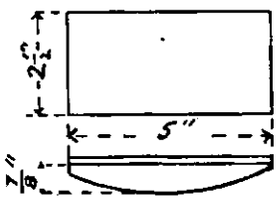
MARBLE BOARD



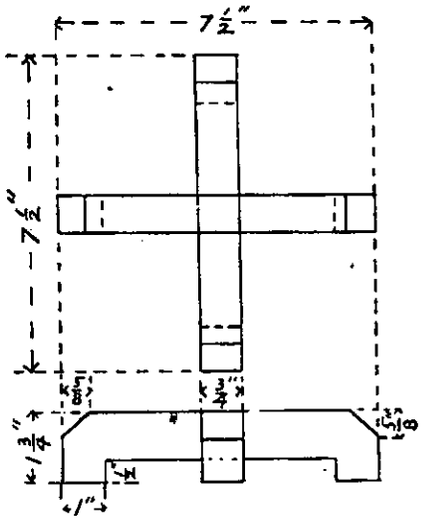
PEN TRAY



KNIFE BOARD



BLOTTER



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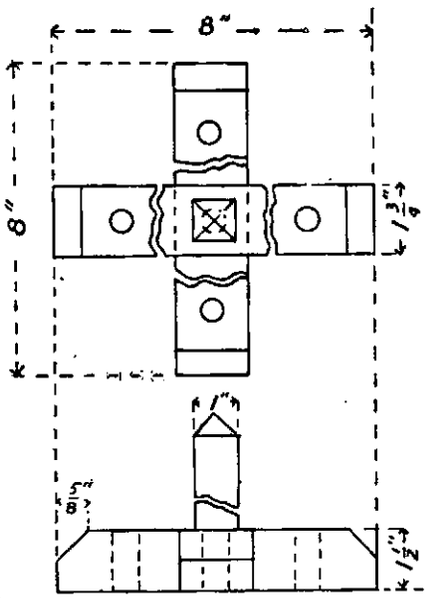
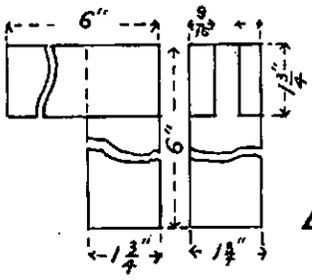
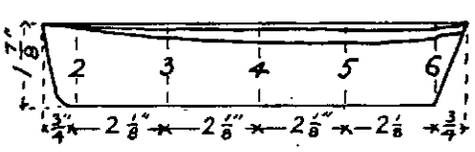


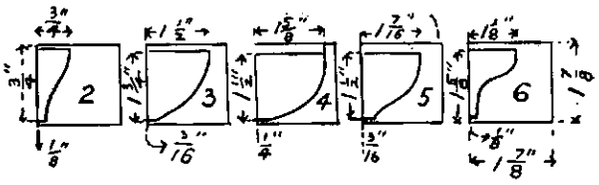
QUOIT PEG



END MORTISE JOINT

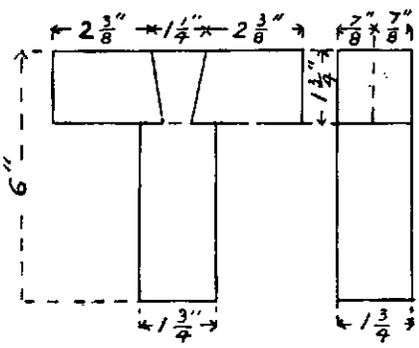


BOAT

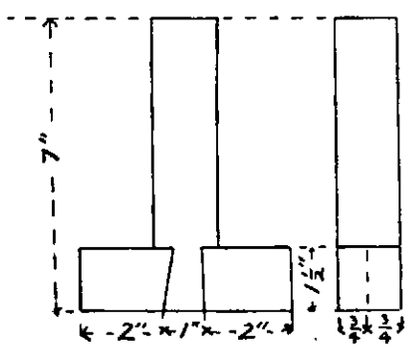


TEMPLATES

FOR BOAT MODEL



SIDE DOVE-TAIL JOINT



LEVEL

CHAPTER XIX.

Manual Training and Sloyd.

[G. H. KNIBBS.]

1. *Introduction.*—Some form of manual training is a feature of primary education in all countries. The manual exercises of various kinds that are in vogue may be classified under two headings, viz.:—

(*a*) Manual training that is of the nature of *trade-teaching.*
(*b*) Manual training that is specially designed to be *educative*, and without regard to its *immediate* value, with respect to a particular handicraft.

In the former the characteristic tendency is to confine the practice to the making of ordinary or useful articles. For example, if the manual work be wood-work, the simpler exercises of the carpenter and joiner are selected as appropriate. In the latter these are *not* taken, because, though important from the standpoint of the particular trades, they are deemed to be of *inferior educative value* in comparison with certain other exercises.

In the former system it is sought to attain manual dexterity by the exercises involved in a particular handicraft; in the latter the aim is to develope general manual dexterity, serviceable in all handicrafts rather than in some particular one.

Sloyd, for example, is not carpentering, but educative manual training. Carpentering, of course, may also to some extent be made educative, but its chief design is utilitarian, and as a system of educative exercises is, according to the advocates of Sloyd, of inferior value.

2. *Moral value of manual training.*—All educationists agree that manual work may be made a factor of high moral value in the education of children. It does three things, viz.:—

(I) Developes the co-ordination of muscular effort.
(II) Leads to self-control through its disciplinary character.
(III) Developes self-expression, and clearness of idea as to form, etc.

Referring to these *seriatim*, it may be said of the first, that of course no system of exercises exhausts the possibilities of acquiring muscular independence and co-ordination. But a well designed *educative* system goes further in that direction than a merely utilitarian one; that is to say, it is *ultimately* of higher practical value.

In regard to (ii), it may be noted that children do not naturally execute their tasks with precision and exact regard to detail, but are indifferent to such matters. Educative manual work supplies the corrective, by absolutely demanding accuracy as regards *dimensions* and *form*. The elimination of slovenliness and heedlessness is *disciplinary* in a very high degree, and the careful habits engendered by the exercises tend to express themselves in the entire domain of the child's life.

The third point is equally important. The consciousness of *form* is intensified by its translation from *idea*, to an outward *reality*. So that when a child makes anything with attention and care, his muscular efforts, sight, etc., are all being trained in appreciation of form. At the same time, he is acquiring the consciousness of power of doing; his self-expression is evoked.

This training in habits of accuracy, and this development of the consciousness of practical skill, are that which make educative manual work so valuable. The child feels that he can achieve something of real worth. Children who have been so trained generally make good workmen afterwards.

3. *Continuity of Manual Training.*—The simplest forms of manual training commence in the kindergarten in the little exercises in which the children are taught to use their fingers, and it is recognised as desirable that there should be no break in passing from the kindergarten through the infant-school proper, to the highest grade of work. At the 12th Annual Meeting of the "British Sloyd Association," held 14th February, 1903, the committee's report drew attention to this matter in the following words:—

"In this connection, your committee views with concern the practice of many school authorities to discontinue the practical occupations of the kindergarten as soon as children are removed from the infant schools, and to return to handwork only in the higher classes of the senior schools. The manual work of the higher classes is not connected with any similar work leading through the lower classes to woodwork or metal work in the higher classes. . . . . Your committee would, however, urge school managers and others responsible for the organisation of school handwork, to formulate progressive courses of instruction from the kindergarten to the advanced work of the higher classes in senior schools. It is only by such progressive work that full benefit can be derived from the wood and metal work which are usually taken up by the older scholars."

"It is felt that the handwork should be brought into closer connection with the ordinary school work than is commonly the case. Much may be done in this way, especially in schools where mechanics or some similar study is taken up; and the making of simple pieces of physical apparatus might very well form an application of handwork exercises. While the periodical exhibitions of such apparatus held by the London School Board shew how much has been done in this direction, they also shew that much may still be done."

Continuity in the manual training, each exercise forming a part of a series, in a scheme extending in a systematic and regular way from the lowest to the highest classes, will reach the best results. It is not sufficient, therefore, to have merely some form of manual work, but a *developed form*, properly designed to occupy the pupil throughout, passing, as time goes on, more and more into the region of invention, rather than mere reproduction.

4. *Practical value of Manual Work.*—Mr. Booker T. Washington's Normal and Industrial Institute at Tuskegee, Alabama, is a splendid example of the educative value of practical training as compared with mere knowledge about things. All forms of practical—*i.e.*, manipulative—work, from the construction in cardboard of geometrical solids, to clay-modelling, etc., are valuable. Speaking of "The Manual Training Movement in America," in a paper under that title read in February last, Mr. H. Thistleton Mark (Owens College, Manchester), says:—

"Here we have . . . . two characteristic American ideas with regard to manual training. We are shewn, on the one hand, how it comes about that clay-modelling, form-study, the construction of type-forms in paper and cardboard, and other exercises are included under '*drawing*' in many of the courses of study for American schools. We are also brought face to face with the view—surely one which, in every presenting of the case in favour of educational handwork, we should all wish to keep in mind, viz., that handwork is a direct means of obtaining real and valuable knowledge. Just as Pestalozzi urged that expression in language, both *clenched* and *riveted* ideas, and *expressed* ideas, so the American view of manual training is that it strengthens the child's grasp of knowledge at the same time that it opens up a way—and one of enormous educational value—of *giving expression* to his *knowledge*."

And later he ably sums up in five propositions his conception of the view taken by American educators as to the value of manual training, and of their practical realisation of it, as follows:—

(i) "Educational handwork is either it itself a source, or, when not a source, a *strengthener* of ideas. Many forms of knowledge, whether of literature, or history, or geometry, or the study of industry, are regarded as incapable of complete assimilation by the child without manual illustration and accompaniment. The impulse to correlate is very strong amongst American educators.

(ii) "The training of the power to express thought is always one of the aims . . . . especially when arranging manual occupations for children in the primary schools. It is not only that working with the hand is part of the process of acquisition, but that it is . . . . one of the arts of expression. The child shews what he knows and thinks, not only by what he *says*, but also by what he *makes*. The hand shares with the organs of speech the honour of being a sort of projected brain.

(iii) "In the lower grades . . . . an expedient is adopted whereby only a portion of the class is engaged with the teacher in oral work at the same time, the other portion or portions being occupied with what is known as seat work, or desk work, or busy work. Often this consists merely of applications of exercises upon lessons already done with the teacher; often it is an opportunity for handwork associated with those lessons, *for the most part* . . . . . self-directed. (Dr. Harris, the United States Commissioner of Education, speaks of this as a means of training the power of "absorptive attention," *i.e.*, the attention to what one is doing one's self, as distinguished from "the alert or critical attention" evoked by the oral lesson, which is largely attending to what others are doing. We all know what is meant by the absorbed attention of the occupied child, and can readily see, more particularly if we have sat under Herr Salomon at Nääs, the value of handwork as a means of strengthening self-reliance and self-control.)

(iv) "Clearly this is the most direct way of training the child in mastery over the material elements, in the presence of which he must in one way or another assert his power later on. As one expert manual instructor said to me: "Life in the large sense is an activity; literature and information, apart from practical ways of acting and expressing thought, are only second-hand life; experience gives a child knowledge of himself, and helps to build up character." "A boy," he added, "likes to deal with forces; he has the feeling—When I am a man I want to *do* this." Handwork as a means for the *developing of power* has, therefore, many advocates amongst American teachers.

(v) "One other point . . . . is specially characteristic . . . . Handwork of various kinds assumes a high educational value when taken in connection with the study of man's industrial life. At the University Elementary School in Chicago, known in England through Dr. John Dewey's book, "The School and Society," and other writings, the story of man's social progress, and the rise of the various industries in connection therewith, form a prominent—the most prominent—feature in the curriculum. Yet, as all know who have followed this most interesting experiment, which already is having far-reaching effects upon American education in general, the *handwork is introduced for its human values* rather than in any direct sense for its industrial value."

Mr. Thistleton Mark points out that, even from the side of curriculum, the educational ideal is not summed up in the three R's, but in the education of *head, hand, heart*,—with a view to the maintenance of practical ability and sagacity, and high ideals of citizenship.

He adds later: "Manual training or educational handwork, is not a mere device or expedient; it is a part of our educational creed. To co-ordinate hand and arm power with seeing power, and thereby to develope both—to connect hand power and seeing power with thought power—and whilst doing these things not to improve the mechanism of mind and body merely, but to cultivate an attitude of preparedness in facing practical issues, are ends well worthy of the educator's most earnest effort. The young American starts life with the idea that he is going to find a way through; he has acquired the habit of attacking problems rather than that of waiting for problems to attack him. Handwork, expression work, the co-ordinating of mind with muscle, are of value for the temper and quality of mind and spirit which they help to develope. The education of the hand is a necessary accompaniment of the education of the intellect, not only if we would make the most of the boys and girls before us, but if we would do our part to

maintain

maintain and prepare for new and more complex uses the great British endowment of practical capacity in a world which disowns all waste, whether of material or of power. . . . . In so far as the child's *doing* is made to accompany his *learning*, will it be more possible for *learning* to accompany the industrial student's *doing?* . . . . . Since the introduction of manual training, parents had been more willing to pay the school tax. It had improved the morale of many of the children, and awakened within them a new consciousness of power and of opportunity."

5. *Rational Theory of Manual Training.*—What has been said so far leaves little doubt as to the significance of the evidence from an empirical standpoint; but the subject appears in still stronger relief when viewed from the rational standpoint. Physiology and psychology, and pathological researches, have deepened the recognition of its real nature. Men like Pestalozzi and Froebel saw by intuition, or felt by instinct, that manual dexterity and practical intelligence might deteriorate in merely academic study. Professor Marshall (Extraord. Professor of Zoology, Leipzig), in a monograph on the human mind, has shewn how significant is the part played by the tactile organs and their associated nerves in developing our mental powers, and Séguin and other workers in the education of "defectives" have brought to light the fact that, in manual training and occupations, defectives may be greatly helped—in fact, it is largely the key to their education.

According to a phrase of Herbart, the child "sees, thinks, acts," and Froebel, in his "Menschenerziehung" (Human Education), urged that every child, boy, or youth, whatever his place in life, should devote from one to two hours daily to some definite piece of material (or manual) work. A school which provides, as so many schools do, only for *listening* and not for *doing*, has an *academic* and not a *practical* tendency. Again, real life is *individual;* yet in many, especially large, schools the children tend to be dealt with *en masse*. The school that truly equips for life is the school that recognises the necessity for *self-expression*, for *individuality*. This brings into relief one great principle in manual training, viz., the necessity for individuality of teaching and individuality of effort.

The idea developing to-day in the world in regard to education is that touch with the subject matter must be *realistic*, not *literary*. "Froebel," said Mr. Hudson,[1] "held that children are born with a great capacity for enjoying the sights and sounds and changes which go on in Nature around them. The child's sympathy with flowers, birds, and animals must be fostered. He is not to be *talked to* about these things, nor encouraged to *talk about them*, but he should be in *living contact with them*, and *occupied* with them. His needs are met, not by the dry facts *about* Nature, but by personal relations with Nature, and through the child's own observations fresh knowledge is gained, stimulating fresh thought, and leading to further self-expression."

In the same paper, Mr. Hudson later points out that the lack in school-life of *action*, by means of which we become "individualised and vitalised," is responsible for its failure to produce practical tendency. The child is naturally more an active than a listening being; yet in ordinary forms of education we demand that he shall be a *listener*, not a *doer*. That is what the advocates of manual training wish to alter. Let the arithmetic and geometry, the algebra and mensuration, be practical; and later we shall have no difficulty about interest in these subjects, and about advancing the theoretical side of them.[2]

6. *Sloyd.*—One of the most perfectly-developed forms of manual training is what is known as Sloyd.[3] At Nääs, an ancient property, which, according to tradition, was, in the 15th century, a royal hunting chateau, is the picturesque seminary of Sloyd, where the Commissioners spent an afternoon and evening with Dr. Otto Salomon, the Director, and his family.

Sloyd had its origin in the year 1860–1870 in a movement which, commencing with no other aim than an immediately practical one, has drifted little by little into a more widely-educative one. In the long nights of the North there was little to do but find interior occupation, so men cut and carved, and women wove and knitted. These occupations were "sloyd."

August Abrahamson, born at Karlskrona, 29th December, 1817, arrived at Gothenburg in 1831, founded an importing-house in 1840, and, having made a fortune by 1868, retired to Nääs. In 1872 he established the "Boys' School for Sloyd," and was assisted in this enterprise by his nephew—now the Director,—Dr. Otto Salomon.

At first, ten hours a day for fifty weeks a year were devoted to teaching, seven hours being given to Sloyd, and three hours to arithmetic, geometry, and linear drawing. In 1874 a similar school for girls was founded; in 1877 a school of apprenticeship. These, in 1882, were replaced by the Normal School for Sloyd, with a concentration of effort upon short classes for the training of professors of Sloyd. The following will give an idea of the total number of attendances for the successive five years from 1875:—

Years	1875–9	1880–4	1885–9	1890–4	1895–9
Pupils	57	386	1,052	1,384	1,296—Total, 4,175

There have been actually 3,130 pupils, viz.:—

Sweden	2,332	Russia	32	Roumania	4	Uruguay	2
England and Wales	312	Austria	26	France	3	Servia	1
Finland	63	Germany	24	Belgium	3	Abyssinia	1
United States	63	Italy	16	Switzerland	3	Brazil	1
Norway	59	Hungary	15	Argentine Republic	3	Canada	1
Denmark	52	Bulgaria	9	Egypt	1	The Cape	1
Scotland	49	Ireland	5	Japan	2	Chili	1
Holland	36	East Indies	5	Iceland	2		

The obligatory programme at the Normal School comprises two parts, viz.—(*a*) theoretical, and (*b*) practical. These consist of—(*a*) conferences, lectures, discussions, etc.; (*b*) Sloyd practice, drawing, gymnastics. The

[1] "What is Sloyd?" J. C. Hudson. London. 1902.

[2] Professor Klein (Leipzig) set up a workshop for modelling near his lecture-room, so that his students, after calculating curves and surfaces of higher orders, could produce them in a plaster cast. In California University the practice of modelling structures after dissecting (first by copying, then from memory) is followed, so as to develope clear ideas and accurate memory of form.

[3] In Swedish "Slöjd" is industry; *cf.* slög—handy, dexterous. It is pronounced nearly like "sleude" would be in French, but the "öj" is more liquid than the "eu." The nearest English sound is the word "slur" (with "r" silent), and "id" ending it: thus, slu(r)id; but this is *not* the real sound of the Swedish word.

The conferences divide sometimes into two sections, viz.—(i) systematic and (ii) historic. The courses take practical account of the place in Sloyd in general pædagogy, so that the touch of the subject with the following subjects is considered :—

General Pædagogy	Hygiene	Æsthetics
Methodology		Technology of Tools
Psychology		History of Education.

The founder and Dr. Otto Salomon have developed the system with special care. The latter, a disciple of Pestalozzi and Froebel, has caught their spirit of thoroughness; and, while the casual visitor of Näås will be struck with what he sees, it is only the serious student of the system who can realise what is hidden therein, both in thoroughness of thought and careful elaboration of the system.

The founder died in 1898, over 80 years of age.[1] The property is worth about £40,000, and all persons who have spent any time there seemed to have been delighted with their stay and its profit.

In the collections of Sloyd models there are now over 2,500 different forms.

7. *The Principles of Sloyd.*—The fundamental principles of the Sloyd system are—

(1) The instruction must conform to a *fixed system*, and not be subject to the arbitrary choice of the pupil.

(2) It must be taught by a *special teacher*, who possesses a knowledge of pædagogic theory, etc., and not merely by a tradesman.

The first is a consequence merely of the fact that the system follows a definite educative plan, which is known to the student of Sloyd education, but not to the child learning it.

The second is a necessary sequitur, if it be admitted that the system is *educative*. To imagine that Sloyd is merely woodwork or metal-work, as the case may be, is to completely misconceive its character; its value lies in its *formative* function, both in respect of character and manual dexterity.

There are some other principles expressed in the system, viz.:—

(i) The instruction may not be obligatory, but must always remain *optional*.

(ii) The pupils must make useful and not luxurious things.

(iii) The instruction must be adapted to *each* individual and not be uniform for all.

(iv) The articles must remain the *property of the pupil* and may not be disposed of for the benefit of the school.

(v) The articles must be made with *great care and accuracy*, but regard must be had to the sound development of the body.

That which specially characterises the Näås system, says Mr. P. Chr. Hansen, is that they are *not* founded upon abstract preparatory exercises, such for example, as sawing, planing, chiselling, etc.[1]

The principle expressed all through is that through the series of models that afford the eighty-eight (?) exercises in woodwork, one passes from the easy to difficult, simplex to complex, concrete to abstract. In the models there are a certain number of "form" articles, whose design is to specially invoke the use of the eyes and to strengthen the sense of form.

Uno Cygnæus, the "father of the primary school" in Finland, had conceived the idea of applying the Froebelian principle of education to the teaching of children right through their school life. Dr. Salomon had interested himself in village industries known as home-sloyd, and, after meeting Cygnæus, he elaborated that educational system of handwork which has thus appropriated the name "Sloyd."

It should be recollected that educative sloyd is *not* restricted to a particular model, or set of models, but to *some methodically developed set*. This point will again be referred to.

8. *A Criticism of Sloyd.*—Sloyd is in principle the extension of the principles of Froebel, which he shewed could educatively transform the infant school. Mr. Hudson[3] says that Dr. Salomon's thirty years' experimental work have led him (Dr. Salomon) to the following conclusions, viz. :—

(1) "That the aims of Sloyd—and, may we not say, of all forms of concrete instruction?—for educational purposes must be to arouse and stimulate logical thinking and concentration of thought.

(2) To create unselfish ambition (work for work's sake).

(3) To express knowledge in forms of beauty, and for definite, unselfish ends.

(4) To implant a scorn for shams by developing a love of what is genuine and good.

(5) To help the mental and moral development by securing a normal physical development.

(6) To teach the child to investigate, measure, compare, invent.

(7) To develope judgment, discrimination, and taste."

"Salomon has expressed these ideas very completely and with wonderful truth and detail in a *system of wood-work suited for children from* 10 *to* 14 *years of age*. This period has appealed to him as strongly as the earlier years of school life did to Froebel, and to him and those who think with him, this occupation for scholars of these ages recommends itself because—(i) Sloyd wood-work accords best with the

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[1] An extremely interesting article on Näås will be found in "Der Arbeiterfreund" (The Worker's Friend), 16ten Jahrg. This paper is a German journal for workmen's questions, and is the organ of the Central Union for the welfare of the working classes. (Organ des Central-Vereins für das Wohl der arbeitenden Klassen.)

[1] Das, was die Näåser methode besonders kennzeichnet, ist, dass sie nicht auf die Einübung von abstrakten vorbereitenden Uebungen, z.b. Sagen, Hobeln, Stemmen u.s.w. gegründet ist, p. 23. Sonderabdruck aus der Arbeiterfreund.

[3] *Loc. cit.*, pp. 3–4.

the children's capabilities at this age; (ii) it excites and sustains interest better than any other form of school hand-work; (iii) the objects made are useful; (iv) it gives respect for rough forms of hand labour; (v) it trains to order and exactness, and this in a higher degree than work in any other material; (vi) it inculcates habits of neatness and cleanliness; (vii) it cultivates a sense of form; (viii) it is beneficial from a hygienic point of view; (ix) it allows of methodical arrangement; (x) it trains the hand in general dexterity of manipulation better than any other form of work.

"Sloyd differs from what is know as manual training in the following particulars:—(i) its insistence upon developing the creative faculties of the child by the making of the useful model, which is to be a contribution to the home life; (ii) the essential proportion which must exist between *exercise*, drawing, and tool; (iii) the variety of models used; (iv) the number and variety of the tools employed; (v) the prominence given to form or freehand curved work in wood; (vi) and above all, by putting the development of the child first, and all through.

"Go into a room where the children are doing Sloyd work, under a sympathetic and intelligent teacher, and we find just that buoyant, vigorous, free, yet orderly spirit prevailing throughout, with the unconscious influences for guiding and educating each other, so characteristic of true kindergarten training; the same intense self-activity of mind, and the same eagerness to attack difficulties and to overcome them.

"Primary, secondary, and college teachers, school inspectors, and university professors, agree that the training which they received at Nääs opened up entirely new conceptions of the work of teaching, and that it has been a life-long stimulus to them. Are not such results similar to the effects of a good kindergarten training?"

Mr. John Byatt, Organising Inspector of the Manual Training College of Victoria, who has been an instructor and has had experience of three different systems of manual work, speaks very strongly of the advantages of the Sloyd system, as seen by him in practical experience. He points out[1a] that the purpose of Sloyd is to develope a boy's *faculties*, not to teach him a trade; but he has also testified that the educative value of Sloyd is so high that the practical exercises of carpentry are also more excellently done by the Sloyd pupil. And this is what one would expect. The principle is right. Specific applications to trades come later in life. In the folk school, the education is properly general, and Sloyd is a *general* not a special preparation; and therein lies its value. Mr. Byatt expresses it well when he says:—

"Manual training is, in reality, nothing but an advanced and gradual development of intuitive instruction." And in discussing the question of the value of manual training in general, he says:—

"It was Pestalozzi who headed the struggle against verbalism to secure for children instruction through observation and intuition. His earnest pleading and precept won the day.

"Doing battle for 'Intuitive Instruction' he broke down the *old routine of mechanical teaching and reformed elementary education*. . . . A child while engaged in handwork is never free from the necessity for intelligent observation. Pestalozzi could not, from his own nature and the circumstances of his life, forsee the consequence towards which his pædagogical reform tended, but he clearly shewed the way to it. Froebel, a pupil of his, was the first to follow his lead, and what Froebel did for early childhood, that we now continue for boyhood's school years. . . . The characteristic idea of Froebel's teaching was that the root of all educational development is action, which has for its ultimate aim, not only mere physical exercise, but the unfolding, the development, and strengthening of the mental faculties.

"I think that the phænomenal success of manual training and the wonderful progress it has made in all parts of the world, are due, very largely, to the fact that it affords a legitimate opportunity for the operation of this law of nature and goes a long way towards satisfying the innate craving for activity and faculty of constructiveness which are inherent in every normal child."

Of the value of it all to the homes of Australian people there is little need to speak. To quote again from Mr. Byatt:—

"Sloyd is a powerful factor in training in the habits of order and accuracy, cleanliness and neatness. We must all agree that the possession of these habits is of prime importance, both in business as well as in the home. . . . No small part of the value of Sloyd is in the handiness acquired which enables a man to make his home more comfortable. . . . Consider for a moment the vast difference between handy and unhandy persons. . . . Owing to their unreadiness and lack of resource, they cannot hold their places among other people. No matter how capable they may be of abstract thought, there is a part of their being which, if strictly honest, they cannot respect. But he whose hands are deft and trained has a sense of mastership and power; he is lord of himself and his actions, and more than this, there is in him a great power of helpfulness."

9. *Sloyd series of Exercises.*—Through the courtesy of Dr. Ambrosius, chief of the schools of Gothenburg, the Commissioners saw the wood and metal work in the schools, both excellently finished. In the Gothenburg Folkschool's Model Series for Wood-work (Göteborgs Folkskolors Modellserie for Träslöjd), examples (5) shewing proper positions at work are given even before the preface of the work. There are over 50 examples.[1] The series for metal-work (metallslöjd) has 34 examples, the last being a skate (skridskor).[2]

The Nääs series (Nääs modellserie for pedagogisk snickerislöjd)[3] contains 40 examples, and an analysis thereof of a very complete character.

The Helsingfors series of Mr. Vihlman's (Modellritningar för skolslöjd of Ivar Vihlman, Föreståndare för Slöjdundervisningen i Helsingfors Folkskolors).[4] Still more complete are Mr. Stenbäck's set of about 70 exercises,[5] also for Helsingfors. All these are beautifully got up, and one cannot help realising how

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[1a] The Australian Journal of Education. 1st July, 1903, p. 13.

[1] Prefactory remarks (Förord) by Artur Leffler, Sloyd inspector.

[2] " " " Hans Hallén " "

[3] Nääs model series for pædagogic "joinery," Sloyd.

[4] Model drawings for school, Sloyd, by Ivar Vihlman, director for Sloyd-instruction in the Folk-schools of Helsingfors.

[5] Mallikokoelman piirustuksia käsityö-opetustia varten kansakouluissa, Helsingissä, 1888. Model collection of drawings comprehending the Sloyd-instruction for folk-schools.

how much more ready these northern peoples are to put their instruction on a thorough basis than we are. To put manual training in the primary school on anything like a comparable basis we have a long way to go and much to do.

Among the finest examples of drawings seen by the Commissioners are the model-drawings of artisans' schools used in the Tsesarevitch (Czarevitch) Nicolas' lower technical school (Mr. G. U. Gesse, Inspector). These could hardly be surpassed in excellence.

10. *Sloyd for Girls.*—In Copenhagen, it may be mentioned, in a higher girls' school, Sloyd in exactly the same form as for boys, is also taught to girls, they having similar benches, etc., and in addition to this they do also the ordinary lighter forms of manual work especially designed for girls. The pupils, attending this school are of the higher class socially, and it is worth noting that the work is very popular with them. There is reason to believe that a light form of such Sloyd is as desirable for girls as for boys, and would be much appreciated. Very many ladies in Northern Europe do light wood-work, carving, etc., and enjoy it. If girls desire to undertake work of the kind there seems to be no reason why they should be disallowed.

11. *Swiss ideas of Manual Training.*—The conclusions reached by the Swiss as regards manual training are of interest and value. The following is a translation from the Report on Education and Instruction, Group XVII, of the National Swiss Exhibition at Geneva, 1896 (pp. 422-426). The writer of the original is M. Léon Genoud:—

(1) With a view to assuring a complete and harmonious cultivation of the faculties of the child *manual education ought to be on the same footing in the school as intellectual and moral education,* which it supplements. This manual education consists as much in elementary manual exercises developing dexterity of the two hands, exactness of sight, as in the actual execution of manual work.

(2) Consequently manual work ought to constitute part of the school programmes from the first year.

(3) The teaching of manual work ought to be based on the same general principles as the teaching of other branches of the programme. Thus the (qualified) teacher ought to be alone charged with giving such instruction.

(4) The teaching of manual work ought to be intimately connected with the teaching of the geometrical forms and drawing upon which it is based. It could be very useful in the teaching of arithmetic, geometry, and natural science.

(5) In towns it may be so arranged as to develope the aesthetic feeling of the future workman. In the country the manual work should give the children a taste for agricultural matters.

(6) Each subject ought to be made *according to exact dimensions*, and either before or after should be drawn (according to the age and development of the pupil) in a sketch-book with which each pupil ought to be provided.

(7) The manual work ought to be varied and attractive. To that end it is necessary that the master exercise his ingenuity.

(8) The things made should belong to each domain, viz., the school, home, garden, and even games. In the country the objects should relate to agriculture, for it is essential that the child be interested in it, working with pleasure. One might also specially recommend carving with the penknife (*sculpture en coche*), for it developes the taste for manual work and instructs the child.

For theoretical lessons (teaching of arithmetic, geometry, drawing, geography, and natural science) the master could, with his pupils, prepare certain strong and simple demonstration apparatus, relief which would make his teaching more clear, interesting, instructive, and profitable.

(9) The selected objects to be made by the class should be executed by the teacher, who is thus able to ascertain the best way of proceeding and of judiciously judging the value of the work.

M. Léon Genoud recommends the following programme:—

(i) Lower Division ..... Froebelian occupations.
(ii) Middle Division ..... Froebelian occupations, and work in paper and cardboard.
(iii) Higher division ..... Wood-work, demonstration, apparatus. In towns, carving with penknife; in the country, practical agricultural instruction, and the making of simple tools for farm or garden.

These exercises M. Genoud would develope as follows:—

(i) Exercises for both hands on the black-board, following the system of Liberty-Taad.[1] Exercises designed to develope manual dexterity, and to exercise at the same time the attention, intelligence, and address. The little children do folding and weaving, the more advanced the cutting-out of objects in thin cardboard, the whole to be combined with the instruction in drawing, arithmetic, and object-lessons These works could occasionally be executed in the class-rooms.

(ii) The manual exercises ought, as far as possible, to be related to the ordinary exercises in arithmetic, the study of geometrical forms, and drawing.

City.—Continuation of the cutting-out of cardboard, making of small objects by means of strips of metal plate, fastened by means of rivets (cold); small objects made of wood with a knife.

Country.—Agricultural work should be explained by the notions of physical and natural science, experimentally taught. Making of various sample tools for use in farm and garden.

(ii)

[1] Superintendent of the Public Industrial Art School, Philadelphia.

(iii) In the last two years account should be taken of the exigencies of real life above all that of the country. One must endeavour to give the child a taste for agricultural matters, by orientating the general teaching in the direction of the needs of agriculture.

Town.—Objects in wood and in strips of metal; making from time to time and in various materials, by several pupils only, such simple instruments as will be useful in teaching various branches of the programme, arithmetic, drawing, and geometry. This apparatus should always be the result of technical work (preparatory exercises). In the choice of work, not serving the purposes of demonstration, it is necessary to take account of the social positions of the parents, and as to form, it ought to be as elegant as possible. In order to develope taste, carving (penknife) is specially recommendable. One might also add carving on the flat.

Country.—Completions of the conceptions of agriculture by experimental lessons (the apparatus or instruments being made by the master, assisted by the pupils) by means of objects that may be found everywhere. Agricultural work in wood, then, perhaps, in metal sheet, making various utensils.

For the country, Dr. W. Goetze, Director of the Normal School of Leipzig, proposes the following programme:—Aboriculture in the orchards and along roads; kitchen-gardening, floriculture (in spring and autumn). In winter, wood-work and metal-work, without workshop.[1]

12. *Conclusions.*—The following recommendations express the conclusions of the Commissioners:—

(1) Manual training should be included in the curriculum of the public schools in all the larger towns, as a natural extension of kindergarten, and because of its educative and practical value.
(2) It should take the form of Sloyd,[2] and not be merely trade teaching. Carpentry is not comparable to Sloyd; nor is it adequate.
(3) It should be taught by properly-trained teachers who have properly learnt Sloyd, and are thoroughly acquainted with its theory.
(4) Instruction in Sloyd should form part of the curriculum in the training college.

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[1] For some account of manual work without a special workshop, *see* Rapports du Jury International.—Groupe I; Education et enseignement. Exposition Universelle Internationale de 1900, Paris.—1902, pp. 271-273 (Travail manuel), and pp. 273-276 (Travail manuel sans atelier).

[2] By Sloyd is meant any *methodically-developed* series of exercises specially designed so that their educative value is a maximum, and thus distinguished from desultory exercises, or those that are *not* methodically developed.

CHAPTER XX.

CHAPTER XX.

Drawing in the London Board Schools and in the Schools of San Francisco.

[J. W. TURNER.

Introduction.—If one were asked in what branch of primary education has there been the greatest advance of late years, or in what direction has the teaching had any particular tendency, the reply would in all probability be, in drawing and art classes. The best of the London Board Schools cannot be classed with the best of the schools in the provincial towns in respect to the teaching of science and commerce, but in the matter of drawing the London Board Schools are doing superior work.

The position of New South Wales schools in regard to drawing is far from satisfactory. It is really surprising how much we are behind the weakest of the elementary schools, and the leeway we have to make up is almost disheartening. It is not the purpose of this chapter to say where the fault lies, but the subject in our State Schools has had too little importance attached to it in the past, and while other countries have made drawing one of the strongest subjects in their curriculum, alike on account of its educational as well as practical value, we have been content to give it a minor place in our programmes, and the minimum amount of time in its teaching. A complete revision of the drawing syllabus, showing more definitely what is required from each class, and a knowledge of the most modern methods of treating the subject, are necessary preparatory steps towards placing the instruction on a proper basis. (*See drawing syllabus London School Board.*)

It is quite beyond the power of any one man to organise and thoroughly superintend the drawing if he is held responsible for teaching the subject in the Training Schools, and examining and instructing the pupils in the public schools. Sydney and suburbs alone should have six trained art masters, and towns like Newcastle, Bathurst, Goulburn, Parramatta, Broken Hill, Albury, Armidale, Grafton, Dubbo, should be formed into centres, each with its residential art master.

As showing the value placed on the subject in other places it is only necessary to say that the London School Board employs sixty experts to carry on the work of its art classes in the primary schools.

A very praiseworthy exhibition of drawing was conducted by Mr. J. E. Branch, Department of Public Instruction, at the recent Public School Teachers' Conference in this State. The sections of work represented were ambidextrous and free-arm drawing, brush work, and clay-modelling. The results shown by the children who gave the practical demonstration were very good, especially in the first and second sections. The Commissioners have also seen Mr. Branch's programme of work for the Training School, and are pleased to be able to state that in so far as *one* man can be successful, the teaching of the subject is likely to be brought into line with the best methods of other countries.

London Board Schools—Drawing and Art Classes.—The Coll's Road Board School, Peckham, was particularly recommended by one of His Majesty's Inspectors as one of the best schools for art work under the London School Board. The gentleman in charge of the art class is one of the art masters specially employed by the Board, and is also an assistant inspector of drawing. The school is a centre for five schools in the immediate district, and pupils of Standard IV and upwards, about ten to fourteen years of age, are admitted to the art classes. The art room is one of the buildings of the Board School, Coll's Road, and is used exclusively for its purpose. It is well provided with all the necessary furniture. Two hours' instruction are given in the subject every week. The number in a class at the lesson is twenty-five, and these are instructed by the art master and an assistant. The branches which receive most attention are freehand drawing, model drawing, clay-modelling, and drawing from Nature. General instruction on the object to be drawn is first given by the master, and then the pupil is left largely to his own resources, getting individual attention as time permits. Each pupil models from a cast which he has previously studied as a freehand exercise. Clay-modelling and Nature drawing are the particular subjects in the course. There are fifty classes for clay-modelling under the control of the London School Board, giving instruction to 7,000 pupils. In this school alone 100 are taught every week. The aim of the master is to make his work educative rather than imitative, and he claims for his method that it exercises the powers of observation, trains the pupils to appreciate art subjects, and in some cases creates fine artistic tastes. It also has an economic value, as many of the pupils who have gone through his course specialise in the subject in the art classes of Technical Colleges, and ultimately find that their training is an avenue to employment in architects' offices, &c.

Drawing from Nature seems to be the real essence of the more intellectual art teaching in the primary schools of England at the present time. In teaching the subject the idea is not to get accuracy of detail, but faithful general representations.

The art room, Coll's Road, is surrounded with the pupils' work, all of which is of high character. There is less in the way of design in this school than may be seen at Fleet Road and Broomsleigh Board Schools, but more modelling in clay and more Nature drawing. The master's methods are very sound, and the whole teaching of the subject accords with the most modern ideas.

Fleet Road Board School, Hampstead.—In this school there are classes of boys and girls from ex-standard VII., over fourteen years of age, receiving regular drawing lessons from a gentleman trained in the art classes under the London School Board. He is a peripatetic instructor, and this is one of a number of schools in London in which he is employed specially to teach the subject. The course extends over two years, and in this class the pupils receive *four hours'* instruction in the subject each week. The work that came under review was designing; drawing in black and white from the object; modelling in clay from a pattern previously designed in pencil; original designs for lamp-shades, tapestries, silk hangings, dados

lace,

lace, ladies' hat-pins, &c.; pen and ink sketches of vegetables and fruit, from the original; Nature drawing from flowers and fruits. The teaching is intelligent and educative in all branches. The pupils' powers of observation are developed, and originality of ideas is encouraged.

Broomsleigh Road Board School.—The aim of the visiting drawing teacher in this school is largely to produce artistic and practical designs. The lower standards are taught by the ordinary staff of the school, but the highest, Standards VI and VII, are under the special care of the drawing teacher. Brush work and free-arm drawing are taken in the lower standards. Model drawing and perspective in the higher standards are treated in the representation of common objects and in the plans of parts of the buildings. A class was seen drawing an open umbrella from the object placed on a table in front of the class. The boys were allowed three-quarters of an hour for the drawing and shading, and the majority made good work. One boy made a very fine drawing of the main archway of the school.

Drawing from Nature and the object receives prominence in the London Schools where expert teachers are employed. Merely mechanical drawing, unless it serves as an auxiliary to some higher work, as for example the production of designs, is considered of little value. In none of the London Schools visited was ambidextrous drawing seen.

Drawing in the Schools of San Francisco.—During the Commissioners' stay in San Francisco, the Lady Superintendent of Drawing was in attendance at one of the Grammar Schools of the city, not for the purpose of instructing the pupils, but to make suggestions and confer with the teachers regarding their methods of teaching drawing in their classes. A glance at the pupils' work, which the Superintendent was examining, showed that the usually accepted ideas of teaching the subject have no place in her system. In her method she proceeds on none of the conventional lines, but gives the child the greatest freedom in developing his originality. The coloured crayon has superseded the brush and the pencil, and her results, as shown in the work of the schools and in her own studio, are very creditable. In her teaching, imitation has little scope, but imagination has a wide field.

The same central idea is at work in the Infant Schools of Paris, where the younger children are encouraged to make drawings of fire-engines, trams, &c.

A feature of the Superintendent's work is called "Spontaneous Story Drawing." A well-known theme is chosen, as, for instance, "Red Riding Hood." The story admits of two kinds of treatment—outdoor and indoor. The outdoor scene is chosen. In the preliminary description of the scene the several views of the main features of the story are presented to the mind of the child by familiar chats, in order that he may exercise both the faculty of imagination and selection. The child, the wolf, the forest, the ground, are each in its turn brought before the mind of the child in the general conversation. Then with this preliminary explanation the pupil is left to his own devices to tell the story through the medium of coloured crayons with no idea in his mind of making a picture or a drawing. The Lady Superintendent in one of her publications says, "the pupils' thoughts should be held exclusively to the content of the expression, the form being allowed to take care of itself." She recommends her teachers to supervise each pupil's work carefully, and to give individual encouragement and commendation where necessary, for "practice with praise will work wonders." When the drawing lesson is over she advises that the drawings, which are executed on squares of rough paper, should be pinned on the wall and studied by means of a language lesson in which the children should take part. She does not allow the pupils to criticise adversely one another's work, but encourages them to appreciate one another's efforts, and she cautions her teachers against any disparagement on their part of the pupils' drawings. "Everything," she says, "should be taken seriously, and each drawing looked upon as the result of the child's best effort—and hence a success. The drawings should be considered only as language expression, and if any part of the representation is indefinite or illogical, it is because the child did not comprehend the story, and not because he could not draw it." The language lesson being over the teachers are recommended to study the drawings, and to note powers of observation and amount of progress on the part of the pupils. In the more advanced classes Nature drawing and design, in continuation of the work done in the lower classes, are introduced.

The Drawing Syllabus of the London School Board is appended.

SCHOOL BOARD FOR LONDON.—SCHOOL MANAGEMENT DEPARTMENT.

Victoria Embankment, W.C.

CORRELATION IN THE VARIOUS FORMS OF MANUAL TRAINING.

Drawing Syllabus by Mr. A. Wilkinson, Superintendent.

In drawing up this syllabus it has been thought advisable to limit, as far as possible, the number of copies and objects for study in each stage in order that the whole of the work set may be carefully completed during the school year, and sufficient time be allowed for the repetition of more difficult lessons, for additional memory work and for absentees to make good the lessons they may have missed.

Although the copies and objects prescribed for the study are few, yet considerable variety has been ensured, and by the introduction of plant, animal, and architectural forms, much useful information may be acquired by the pupils when drawing and modelling.

It will be noticed that throughout the stages the subjects are closely connected and smoothly graduated, and that disjointing has been carefully avoided.

Stage I.

Drawing.—Two lessons per week of 45 minutes each. Total, 1½ hours.

First Lesson.—Technical Training, 45 minutes.—Ruler work with foot rule and set squares. Construction of squares, oblongs, and triangles of various dimensions.

Note.—The correct use and handling of set squares to be taught.

Second Lesson.—Free-arm Drawing, 45 minutes.—(*a*) Free-arm Drawing, 30 minutes of straight and curved lines, drawn from the shoulder in various directions, upon millboards and brown paper, placed in the slate slots, and inclined at a slight angle.

Notes.—(1) Millboards should be at least 15 in. by 12 in. (2) After 12 exercises in (*a*) free outline studies of simple leaf forms should be made, construction and proportion being the chief aim and not finish.

(*b*) Memory Drawing, 15 minutes of work under (*a*).

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling in plasticine or clay of simple leaf forms. (*b*) Brushwork.—As an alternative to (*a*).

Stage II.

Drawing.—Two lessons per week of 45 minutes each. Total, 1½ hours.

First Lesson.—Technical Training, 45 minutes.—Ruler work as in Stage I, First Lesson, and the construction of parallel lines, the hexagon and the octagon by means of the rule and set squares.

Second Lesson.—Free-arm Drawing, 45 minutes.—(*a*) Free-arm Drawing, 30 minutes, as in Stage I, Second Lesson, followed by simple leaf and other forms. (*b*) Memory Drawing, 15 minutes of work done under (*a*).

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling, 30 minutes of leaf and other simple forms. (*b*) Memory Modelling, 15 minutes of work done under (*a*). (*c*) Brushwork, as an alternative to (*a*) and (*b*).

Stage III.

Stage III.

Drawing.—Two lessons per week of 45 minutes each. Total, 1½ hours.

First Lesson.—Technical Training, 45 minutes.—Ruler work as in Stage II, First Lesson, with greater attention to neatness and accuracy. Four Geometrical figures (equilateral triangle, hexagon, octagon, and rhombus) to be copied by means of the ruler, set squares, and compasses. Plan and elevation of a brick.

Second Lesson.—Free-arm Drawing, 45 minutes.—(*a*) Free-arm Drawing, 30 minutes of simple plant and animal forms. (*b*) Memory Drawing, 15 minutes of work done under (*a*).

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling, 30 minutes of simple arrangements of leaf forms learnt in Stages I and II. (*b*) Memory Modelling, 15 minutes of work done under (*a*). (*c*) Designing with brush as an alternative to (*a*) and (*b*).

Stage IV.

Drawing.—Two lessons per week of 45 minutes each. Total, 1½ hours.

First Lesson.—Boys.—Technical Training, 45 minutes, in a preparation for Manual Training Classes.—Simple scales. Drawing to scale of simple objects measured by the Class. Isometric view of cube and square prism. Plan and elevation of hexagonal prism and square pyramid.

Girls.—45 minutes.—Simple scales. Drawing to scale patterns of simple details of garments from actual measurements.

Second Lesson.—Free-arm Drawing, 45 minutes.—(*a*) Free-line Drawing, 15 minutes, with coloured chalks. (*b*) Free Drawings of set copies, 30 minutes.—Construction and proportion to be considered of paramount importance. No finish required. (*c*) Flat Tinting (three or four degrees of shade, each filling oblongs or leaf shapes, size about 4 in. by 2 in.) with black chalk and stumps, charcoal or pencil, 45 minutes. This lesson to take place of (*a*) and (*b*) once a month.

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling, 30 minutes, slightly more advanced than Stage III. (*b*) Memory Modelling, 15 minutes of exercises worked under (*a*). (*c*) Designing with brush, 45 minutes, as an alternative to (*a*) and (*b*).

Stage V.

Drawing.—Three lessons per week of 45 minutes each. Total, 2¼ hours.

First Lesson.—Boys.—Technical Training, 45 minutes.—(*a*) Geometry, 25 minutes.—Scale Drawing continued from Stage IV. Irregular polygons described by means of given angles and sides. Circle through those given points. Polygons in circles and between given parallel lines. Plan and elevation of tetrahedron and pentagonal prism. Isometrical view of either pentagonal, hexagonal, or octagonal prism. (*b*) Drawing for Woodwork, 20 minutes.—Some exercises for First Year's Course.

Girls.—Scale Drawing, 45 minutes, as in Stage IV, but of greater difficulty.

Second Lesson.—Free-arm Drawing, 45 minutes.—(*a*) Free-arm Drawing, 20 minutes, as in Stage IV, Second Lesson (*b*). (*b*) Design, 25 minutes, based upon drawing done under (*a*). If preferred (*a*) and (*b*) may be taken in alternate lessons of 45 minutes each.

Third Lesson.—(*a*) Model Drawing, 45 minutes.—Cube, square prism, square pyramid, and any common objects based upon them. (*b*) Tinting, 45 minutes, as in Stage IV. Second Lesson (*c*) illustrating gradation of tints. Shading cast of egg.

Note.—A blown egg, gummed to a piece of cardboard, is the best substitute for a cast.

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling, 30 minutes, of simple architectural details. (*b*) Memory Modelling, 15 minutes, of exercises worked under (*a*).

Stage VI.

Drawing.—Three lessons per week of 45 minutes each. Total, 2¼ hours.

First Lesson.—Boys.—Technical Training, 45 minutes.—(*a*) Geometry, 25 minutes. Scale drawing as in Stage V, but of greater difficulty. Proportional lines and figures. Simple problems of inscribed and circumscribed figures. Plan and elevation of simple solids with sections. (*b*) Drawing for Woodwork, 20 minutes. Some exercises for Second Year's Course.

Girls.—Scale Drawing, 45 minutes, as in Stage V, but introducing patterns of greater difficulty.

Second Lesson.—Free-arm Drawing, 45 minutes.—(*a*) Drawing and Tinting of leaf, flower, and animal forms, 45 minutes. (*b*) Designing, 45 minutes.—To fill square, circle, and oblong, using flower and leaf forms drawn under (*a*).

Note.—(*a*) and (*b*) to be taken alternately.

Third Lesson.—(*a*) Model Drawing, 45 minutes, as in Stage V, Third Lesson (*a*), with the addition of cone, cylinder, and common objects. (*b*) Shading, 45 minutes, from three simple casts, as Brucciani's list, Nos. 2,482, 2,483 No. 4, 2,483 No. 7.

Note.—(*a*) and (*b*) to be taken alternately.

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling, 30 minutes, flower and leaf forms and architectural details. (*b*) Memory Modelling, 15 minutes of exercises worked under (*a*).

Stage VII.

Drawing.—Three lessons per week of 45 minutes each. Total, 2¼ hours

First Lesson.—Boys.—Technical Training, 45 minutes.—(*a*) Geometry, 25 minutes.—Scale drawing continued from Stage VI. Tangents to circles. Elevation of cupboard, easel, door, &c., and plan of class-room, &c., drawn to scale from given dimensions. Plan and elevation of solids, with elevation on new line, also with sections. The application of Geometry to geometrical patterns, simple machine details, &c. (*b*) Drawing for Woodwork, 20 minutes.—Some exercises for Third Year's Course.

Girls.—Scale Drawing, 45 minutes, as in Stage VI, First Lesson, but of greater difficulty.

Second Lesson.—(*a*) Free-arm Drawing, 45 minutes, as in Stage VI, Second Lesson (*a*). (*b*) Designing, 45 minutes, as in Stage VI, Second Lesson (*b*), with the addition of simple borders.

Note.—(*a*) and (*b*) to be taken alternately.

Third Lesson.—(*a*) Model Drawing, 45 minutes, as in Stage VI, Third Lesson (*a*), with the addition of one vase. The drawings to be lightly shaded with stump or pencil. (*b*) Shading, 45 minutes.—From three casts, as 2,943, 2,944, 2,110, Brucciani list.

Note.—(*a*) and (*b*) to be taken alternately.

Stage Ex-VII.

Drawing.—Three lessons per week of 45 minutes each. Total, 2¼ hours.

First Lesson.—Boys.—Technical Training, 45 minutes.—The application of Geometry to geometrical patterns, simple machine details, &c. Plan, elevation, and section of solids continued from Stage VII, and also applied to common objects.

Girls.—Scale Drawings, 45 minutes of patterns of garments continued from Stage VII.

Second Lesson.—(*a*) Drawing and Tinting, 45 minutes, of flowers and leaves from Nature. (*b*) Designing, 45 minutes.—Simple designs based upon the drawings made under (*a*).

Note.—(*a*) and (*b*) to be taken alternately.

Third Lesson.—(*a*) Model Drawing, 45 minutes of a group of models, lightly shaded. (*b*) Shading, 45 minutes, from three casts as :—345, 2,465, 2,963, Brucciani list.

Note.—(*a*) and (*b*) to be taken alternately.

Manual Training (Optional).—One lesson per week of 45 minutes.—(*a*) Modelling, 45 minutes.—From simple casts, as 2,115, 97,344, Brucciani list. (*b*) Simple Decorative Monochrome Studies, 45 minutes.—From one or two of the drawing copies or casts previously studied.

Note.—(*a*) and (*b*) to be taken alternately.

Memory Exercises.—These should be given as frequently as possible in connection with Drawing and Manual Training lessons.

N.B.—In Stages VI, VII, and Ex-VII, a brown-paper portfolio of each pupil's work should be kept. It will be useful in making application for employment under Designer, Decorator, Builder, Architect, Surveyor, Engineer, or, fact, wherever some ability to draw is a first necessity.

CHAPTER XXI.

CHAPTER XXI.

The Teaching of Elementary Drawing in Europe.

[G. H. KNIBBS.]

1. *Introduction.*—The teaching of drawing in Europe has in many places reached a high degree of perfection in all its branches, viz., geometrical, perspective, freehand, etc. In some places (*e. g.* Italy) the attainments in this respect of quite young children are remarkable. The instruction in the subject commences generally in the kindergarten, where, though crude, the attempts are often very promising. In the elementary schools linear drawing is often required to be executed without the assistance of any instruments (rulers, etc.) until skill is attained, the object being to secure the education of the eye and hand.

In order to exhibit the attitude of several countries to the question of drawing some programmes are translated.

2 *Belgian view of Teaching Drawing.*—The aim of the teaching of drawing in the primary schools of Belgium is declared to be:—

(*a*) To accustom the eye, by methodical observation of the form of objects, to *seeing exactly.*
(*b*) To make the hand free and yet firm by frequent drawing upon slate, in the copy-book, or on the black-board.
(*c*) To progressively train the pupils to represent the forms and outlines which they have observed, and the combinations which they have imagined.
(*d*) To initiate them into such geometrical drawing as will be most useful to them in different trades.
(*e*) To make the exercises such as will contribute to general culture and especially to the formation of taste.

These are the aims of the teaching of drawing in the primary school substantially as declared in the programme. [1]

The principles governing the development of the subject are the following:—

General Method, drawing from Nature.—Drawing, it is said in the official programme, is essentially marking on a plane surface, the real or apparent object in regard to which, by a rational analysis, one has acquired a clear conception. To merely reproduce a lithographed model, or a figure traced upon a black-board, is not to make a true drawing, but merely to make a copy. Hence the dictum:—

The system of copying substitutes for the material thing, merely its graphic representation, and the task of the pupil is to imitate an imitation. In thus suppressing direct observation, the analysis of the outlines of the object, one suppresses at the same time the intelligent part of the work, from whence drawing derives above everything its educative and practical value.

It is important therefore that the teacher be convinced of the necessity of teaching drawing from objects placed before the eyes of the pupils, or to employ a phrase already appropriated, "drawing from Nature."

At first view drawing from Nature at a primary school would appear to be limited to a choice of subjects, taken, on the one hand from the furniture or objects of the school or home, the utensils of housekeeping, the tools most frequently employed, the models for the manual work of the school; or on the other, from plant-forms. These series of objects though assuredly of great importance do not constitute the only material for the exercises in drawing from Nature. Freehand geometrical drawing, and drawing of ornaments, are better taught by drawing directly from the concrete forms, the objects themselves, than from black-board sketches, which are always too abstract for the child.

"Drawing from Nature" will not then be considered only as a species of particular exercises, having for its aim the representation of a series of common objects placed before the pupils, *but as a general method* to be applied, in a large measure, to the various parts of the course.

The rational character, it is averred, of this method is incontestable, for it seeks to attain the end of the drawing lesson, by bringing into active use the sense of sight, and the faculty of observation and of analysis. And what is still better it assures to the pupil, if he be intelligent, a just grasp of the grammar of form. (Meer dan eenige andere, zal zij, mits goed verstaan, bij den leerling juiste begrippen der vormen doen ontstaan. p.4.)

In the Belgian view, *the teaching of drawing should be founded on the essential elements of geometry,* for it is held that geometry furnishes reliable rules for the execution of all kinds of drawing. In "geometral" drawing (geometrale teekening) the true form of the object is drawn, in perspective drawing (perspectief teekening) the apparent form; in either case the rules of geometry are applicable and this is the sense in which drawing is said to be based upon geometry. And whether *Demonstrational* geometry be taught in the primary school or not matters little, so long as the pupils are not allowed to remain ignorant of the elements of that science. They, of course, are supposed to be, and are, taught the elements of geometry. (*see* chapter XXIII).

The instruction in this subject may be given either in a special course, or partly in the drawing lessons themselves, alway provided that the teacher be authorised as competent (indien de onderwijzer daartoe door de bevoegde overheid gemachtigd wortd p. 5); and the view taken is that it is easy to combine the drawing with at least the most indispensable ideas of geometry.

As

[1] Het teekenonderwijs in de lagere gemeentescholen. (Ministerie van binnenlandsche zaken en openbaar onderwijs; Bestuur van het lager onderwijs), Bruxelles, 1893, p. 3.

As regards the kinds of exercises which constitute the Belgian programme the following may be said:—

(*a*) *Freehand geometrical drawing* is held to be necessary in order to develope practical skill in drawing. The simplest examination reveals the fact that all forms can be related to elementary geometrical figures, hence a preliminary analysis of the form of a particular object, in order to be methodical and fruitful as regards results, must rest upon the partial or complete representation of it by geometrical operations. Hence it is held to be of the first importance that freehand geometrical drawing should occupy the first place in the plan of instruction in drawing in the primary schools. It is this power of analysis, this ability to perceive the elementary geometrical form, and to correctly reproduce it which gives command of the grammar form, and if one may so speak, of its script. [1]

(*b*) *Geometrical drawing with the aid of scale, square, compass, etc.*, is regarded as a powerful means of leading the pupils to the idea of exact forms, by placing at their disposal means of executing those kinds of drawings with a higher degree of precision, than is the case case with freehand sketches. Its chief value, however, is held to lie in its efficacy as a prepartion for "geometral" or industrial drawing, [2] viz., the drawing required in trades and industries. As far as possible the teaching in both branches, *i.e.*, freehand and with instruments, should be parallel.

(*c*) *Drawing of common objects from Nature* is regarded as contributing, more thoroughly than any other kind of graphic work, to accuracy in seeing, and to dexterity and suppleness of hand. In the lower and middle division (first four years) the pupils draw flat objects, or such as have only slight relief, seen from the front; in the higher division, they draw any objects in their perspective appearance.

(*d*) *The simplest forms of geometrical ornament, and of ornamentation developed from plant forms, i.e.* leaves and flowers (De eenvoudigste vormen van het meetkundig ornament en het blad- en bloemornament) are regarded as not only of practical but also æsthetic value. Well taught, they are said to awaken in the pupil the sense of beauty and to exercise a happy influence in regard to the education of his "taste," while at the same time such drawing is indispensable in many trades and industries to give that artistic touch and elegance which doubles their value. (dat artistiekkarakter en die sierlijkheid geeft, welke de waarde er van verdubbelen).

Ornamental drawing, it is said, is directly connected with geometrical drawing, by reason of its combining regular elements, and also by the method of execution, and the method of drawing from Nature, is advantageously applied to the development of decorative elements.

In passing it may be said that the Commissioners saw examples of this development of decorative elements from studies of natural objects in England, and in almost every country of Europe, some of the finest examples being those seen in St. Petersburg.

In the Girls' classes greater stress is laid upon ornamental drawing because of its value in needle-work and fancy-work designs, while perspective drawing, in view of the limited time available, is regarded in Belgium as of less value, *i.e.*, for girls.

The geometrical drawing and ornamental drawing are combined in a series of progressive exercises, advancing in complexity and difficulty, each exercise being a *point d'appui* for the conceptions of the next.

The teacher is careful not to exhaust all the matter of the geometrical drawing in a particular course, but rather to treat it so that the drawing of objects, and of ornamentation related thereto, shall be treated at the same time; either the object or the ornamental forms being taken next, according as one or the other is the easier.

(*e*) *Drawing from memory and invention* are two forms that are of importance—that is to say, the Belgian system does not only claim to exercise the faculty of memory in its drawing teaching, but also that of invention. In order, it is said, that the *memory of the picturesque*, and the *creative imagination* shall attain to their normal development, it is necessary to put these faculties into action by a wise selection of exercises specially designed for that purpose. [3]

(*f*) *Colour sense, and a knowledge of the simplest laws of their harmony*, cannot be dispensed with in the primary school teaching it is said, in view of their practical utility, and their value in educating the pupils æsthetically.

Incidentally it may be here mentioned that this recognition of the need of educating the colour sense is keenly appreciated, also in the *United States*, and in this connection an exceedingly interesting little work by Mr. Milton Bradley on "Elementary Colour" may be mentioned. [4]

The development of harmoniously-coloured ornamentation is excellently treated in this work. This is also a feature in the work of the Belgian primary school. The drawing and education in colour is related to the manual instruction through the work with cardboard.

The programme hereinafter given embraces in each of the three divisions of the Belgian primary school:—

(1) Geometrical drawing
(2) Drawing of common objects (from Nature).
(3) Ornamental drawing
(4) Drawing from memory.
(5) Composition and invention (het teekenen naar eigen vinding).
(6) Theory of colour with application.

These will later be discussed in detail.

3.

[1] De leerlingen in staat stellen het vormenschrift te lezen, hun veilige middelen verschaffen, om met voldoende nauwkeurigheid de verschillende teekeningen te vervaardigen, die daardoor mogelijk worden: ziedaar het doel van het meetkundig teekenen met de vrije hand; ziedaar ook, waarom dit soort oefeningen eene eerste plaats verdient op het programma der lagere school. *Op. cit.* p. 5.

[2] Geometrical drawing is meetkundig teekening. Geometral drawing is geometrale teekening.

[3] Zullen het geheugen der vormen en de scheppende verbeelding zich normaal ontwikkelen, dan moet men die beide vermogens door oordeelkundige oefeningen doen werken: vandaar het *teekenen uit het geheugen en het teekenen naar eigen vinding*. *Op. cit.* p. 7.

[4] Mr. Bradley has two other books on the same subject:—"Colour in the Kindergarten" and "Colour in the Schoolroom." Springfield, Mass., U.S.A. The Commissioners' attention was drawn to these by Messrs. Baker and Rowley, of Springfield, whose kind assistance is here gratefully acknowledged.

3. *The different sections of drawing in Belgian primary schools.*—The chief features of the Belgian method may be outlined as follows for the several parts of the teaching previously mentioned.

Lower Division (2 years).—In this simple plain figures, etc., are drawn all quite freehand, the exercises including :—

(i.) The drawing of straight lines and their division into equal parts.
(ii.) The construction of square and rectangle and their median and diagonal division, the construction of the triangle and rhombus.
(iii.) Elementary tracing of curves.

The teaching commences with the use of the Froebelian material, little sticks (bâtonnets), etc., and they are drawn, (not used as rulers). The sticks are 5-10 centimetres in length, and can be made into closed figures, which also are drawn. The lengths of the lines to be drawn are gradually increased.

The forms given by paper folding are also drawn. It is held in Belgian schools that the use of squared or dotted paper in the first essays at drawing is undesirable, that the use of mechanical means, while it may secure pretty sketches, is nevertheless a serious obstacle as regards habituating the pupils to learn well, to see well, to analyse well. Instead, it is believed, of rendering good service in the first teaching of drawing, they only diminish the effort of attention, retard the education of the eye, and render the hand hesitant.

What is also serious is that it is said that hygiene, as well as pædagogy, urges the rejection of the squared and dotted paper, slates, etc. (Gelijk de opvoedkunde, keurt ook de gezondheidsleer het gebruik van ruiten en punten af. In zekere steden en landen zijn zij verboden wegens hunne schadelijke werking op het gezicht der leerlingen, p. 10). The children are taught to themselves draw all constructional and auxiliary lines required. The terminals of all lines are indicated before the lines are drawn, and faintly dotted lines are first traced as a guide to the firm drawing of curved lines.

Middle Division.—In the Middle Division the freehand drawing and drawing with the aid of instruments are carried out simultaneously.

The *freehand drawing* consists of :—

(i.) The construction and division of plane rectilineal figures.
(ii.) The drawing of circumferences and their division into equal parts
(iii.) The construction of regular polygons.
(iv.) Sketches of the development of the cube, of the rectangular, parallelepiped, of the right prism and several simple objects of regular forms.
(v.) Sketches from nature of the faces or elevations of objects.

The drawing with instruments consists of :—

(vi.) Drawing of perpendiculars, parallels, triangles, quadrilaterals, of circumferences, of regular polygons.
(vii.) Reproduction to scale of sketches, developments of geometrical solids, elevations of objects.

The more difficult forms obtained by folding are also drawn, and the children obtain considerable aptitude in the drawing of plane figures.

Higher Degree.—In the higher degree some industrial applications of geometrical drawing are indicated. "Geometral drawing," at least in its fully developed form, cannot be exacted because it involves a knowledge of the principles of projection beyond what can be attained in the primary school. Nevertheless, it is possible by intuitive methods to get the pupils to draw a number of elevations of common objects, furniture, tools, and in easy cases even plans and sections, and the programme has been developed accordingly. The sketches are first executed freehand, and a fair copy made with scale, etc., afterwards. Work cut out of cardboard according to the sketches is often built up into the solid object, and the success that has attended this sort of teaching is said to be so remarkable as to justify the dictum that manual work is the best means of promoting the kind of practical drawing required in the crafts. (Dat de handenarbeid het feste is om de leerlingen te oefenen in het teekenen, zooals dit in de ambachten te pas komt. p. 12.)

The drawing of common objects comprises :—

(*a*) The plane representation of objects of only slight relief, and seen from the front (elevations of furniture, cardboard models, etc.) ;
(*b*) And the perspective representation of a selection of common objects ;

The former occupies the lower and middle divisions, and the latter the higher division. The treatment is about as hereunder.

In the *lower division* a number of simple objects are drawn, such as ornamental tiles, simple drawing instruments, etc., using at first straight lines as much as possible ; then objects which have curved lines (as for example a pruning-knife, reaping-hook, etc.).

In the *middle division* more difficult objects are taken, both rectilinear, curved and mixed. Such objects as a ladder, window, door, etc., are drawn, and silhouettes of vases of natural leaves and ornamental designs are executed. The first ideas of perspective effects are also treated in the middle division in many schools.

In the series of models used in teaching, objects in the school, home, ordinary tools, leaves and flowers from the garden, field or wood, are all used ; the series being carefully graded.

In the *higher division*, what is called observational or experimental perspective (waarnemings-perspectief of proefondervindelijke perspectief) is taught. Instead of being restricted to drawing flat objects or those which have only slight relief, objects are selected which exhibit a distinct deformation or foreshortening of their faces, and these are drawn as they *appear*.

To aim at basing perspective drawing upon a theoretical study of perspective would, however, lead to failure, for the pupils of the primary school have too limited a knowledge of geometry, to make the course depend upon scientific perspective. Fortunately it is not necessary. There is a much more simple proceeding that adequately meets the requirements of the primary school, and that is to follow what is known as the method of apparent perspective.

In this the instructor gives the pupils the *idea of perspective* by making them recognise certain easily observed facts in which the lengths and apparent forms greatly differ from reality.

A row of trees, a line of stakes, of street lamps, of houses, etc., allow one to indicate how objects of sensibly the same dimensions look smaller as their distance from the observer increases. By drawing the pupil's attention to these and similar facts, the Belgian teacher is required to create the recognition of the fundamental idea of perspective, viz., that the *apparent size of the object diminishes as the distance increases, and that lines, in reality parallel, appear to converge on a point.*

It is necessary also that the pupils get some idea of the *plane of the horizon.* By holding a scale or ruler horizontally in different positions, the pupil is made to see that if at right angles to the line from his eyes, it always appears horizontal whether above or below, but if it be horizontal, and vertical to the plane touching both his eyes, the line will appear to *descend* when it is held above, and to *ascend* when it is held below the plane of the horizon, always pointing to the one point on the horizon. These demonstrations are repeated till the pupils have a clear notion of the plane of the horizon.

The child thinks of objects more as they are in reality than as they *appear;* hence it is very necessary to shew him that when, say a square is shewn, he does not always see it as a square. Every care is taken by the Belgian teacher to convince the pupils of this: a plummet is used, and a thin cord held at different angles in front of the eyes. As soon as the pupils thoroughly realise the difference between the *apparent* position and shapes of objects, and have any idea of perspective, perspective drawing is commenced.

In order to teach perspective observationally, a little apparatus designed by Monsieur V. Jeanneney, or a modification of it is often used. Each pupil has the apparatus, which can be made in the lessons in manual training, with cardboard and a strip of suitable material for a hinge, and a few threads. The object of this simple apparatus is to *demonstrate* how the one object (a regular geometrical figure) appears to be of different shapes, depending upon its position in relation to the point of view and line of sight, etc.

The instruction in this does not include the theory of shading. It is alleged that it would be unwise to exact of the ordinary primary school teachers, lessons that are practically almost purely artistic, and to give which they are in general quite unqualified. And here one sees the characteristic difference between the continental attitude and that of places where a teacher may teach anything he can read about, however unqualified he may really be.

However interesting the shading of drawings may be, it has not, in the Belgian view, the importance of outline drawing (Hoe belangwekkend de toepassingen der schaduwleer ook zijn, zij staan toch, wat practisch nut betreft, verre achter bij zet lijnteekenen, p. 20). From the graphic, or plastic point of view the outline is what is, before everything else, most important, and the task of the primary school is regarded as confined to that.

In the *geometrical-ornament* drawing the *lower division* undertake—

(a) Very simple ornaments formed by straight lines.
(b) Easy ornaments compounded of angles, squares, and rectangles.
(c) Simple ornaments formed by small curves, and the preceding.

In the *middle division* the work comprehends—

(d) Ornamentation derived from triangles, quadrilaterals, etc. Design of tiles, of parquetry etc.
(e) Ornamentation derived from simple curves, or curves combined with rectilinear figures.

In the *higher division* the following much more difficult exercises are undertaken:—

(f) Drawing of regular curve, ellipse, oval, spiral, etc.
(g) Application of these to the design of ornaments.

In the *ornamental drawing based upon plant-forms*, which is advanced work, three things are specially treated—

(h) The drawing of leaves and flowers from Nature.
(i) The study of conventional forms.
(j) The application of these conventionalised forms to art-industries.

In the *middle division* plain, serrated, and other simple forms of leaves are drawn, for example the simpler leaves of the following, viz., the lilac, bindweed, spinach, elm, alder, chestnut, ivy, etc.

In the *higher division* the more difficult compound leaves, large flowers, fruits, or seeds, etc., are drawn; for example, the leaves of the vine, oak, plane-tree, chestnut, the flowers of the large marguerite, nasturtium, lily, poppy, the acorn, etc.

The lessons are said to be of great assistance in the study of agriculture.

Having become acquainted thus by a real lesson in Nature-study, with the forms of plant-life, the pupils have their attention drawn to the geometrical figure of the leaf, and the midrib as an axis of symmetry; and from the natural object a conventional one is produced, by reducing its symmetry without alteration of its essential character, and by suppressing perhaps some details of its marking, with a view to simplification.

Models borrowed from art industries (*e.g.*, potteries, tapestry, guipure, embroidery, etc.) afford objects illustrating the conventionalising of natural forms.

The drawing of ornamental forms derived from the vegetable kingdom is regarded as optional (als eene volstrekt onverplichte leerstof beschouwen).

The *drawing for girls* is somewhat differently orientated, in view of the possibilities of application in needlework.

4. *Theory of exact Observation.*— The education of the eye *so that it shall accurately observe, indispensable for good drawing,* is acquired, according to the Belgian view, by repeated exercises, conducted intelligently and with a wise gradation. The children are taught to make an exact analysis of the constitutive elements of the outline of the thing to be represented, before any attempt is made to draw it. But because of this repeated exercise, it is necessary, in order to maintain interest, to vary the matter as much as possible.

Again in analysis it is necessary to give the children some leading ideas, so that they may recognise the form to which the leaves, etc., approximate. Thus taking lines, their mutual inclination, etc., the simple relations are indicated at first, and later the more difficult ones.

The analysis of the outlines of an object takes something of the following form :—

(*a*) To recognise the general aspect, and grasp its proper character.
(*b*) To distinguish the different parts of the objects, its faces, etc.
(*c*) To appreciate the position, form, size of each part, and of each face.
(*d*) And, as means to reaching what is required, to estimate the lengths, proportions, and inclinations of the straight lines.

Care has always to be taken that the pupil does not substitute the *real* form, seen mentally, for the *apparent* form, actually seen ; consequently the teacher has to take care that the child recognises the deformation due to perspective. And to this end the master frequently indicates on the blackboard what analysis reveals, so as to induce his pupils to graphically translate their observations.

5. *Theory of Drawing from Memory.*—The memory of form demands the cultivation, not only of ideas, but also of those scientific conceptions and those terms, which express them, and the Belgian school authorities regard this culture as not merely generally advantageous, but as *indispensable* for all who some day are to be occupied in the arts and crafts, and who therefore will have to reproduce from memory observed forms (Nuttig voor allen, is deze oefening onmisbaar voor hen, die zich later willen toeleggen op de kunsten en ambachten, want zij zullen herhaaldelijk vroeger waargenomen vormen uit het geheugen moeten weergeven, p. 28).

Ability to create new combinations also depends in a great measure upon memory ; not only in literature, but also in drawing, one must be able to draw with ease upon a rich treasury of faithful memories of forms.

Drawing from memory therefore is *par excellence*, the means of developing the memory of form (het geheugen der vormen). It is defined in the Belgian programme as executing, from memory, a drawing previously made, or of *drawing after attentive examination, an object not previously drawn.* And it is alleged that no work surpasses drawing from memory in conferring the habit of exact analysis and concentrating the mind on a definite subject. So true is this that the teacher who neglects it lacks one of the best means of measuring the effort of attention and power of analysis of his pupils.

It will not suffice to achieve the end, to impose exercises in drawing from memory on rare occasions, they must be associated with various branches of the course, principally in the drawing of objects through each of the three divisions of the primary school, and a suitable time should be devoted thereto each week.

There is a kind of drawing known as dictated drawing (dictaat-teekenen). Lines, plane figures, geometrical ornamentation, etc., lend themselves to this. In schools provided with extensive blackboards along their walls, this method allows of simultaneous drawing being done boldly with chalk ; one of its chief advantages is regarded as the confirming the pupils in a knowledge of the terminology of drawing.

6. *Theory of invention in Drawing.*—Valuable as is drawing from memory, the development of originality is no less so, and even the form-memory is greatly strengthened by exercises in what may be called inventive-drawing, *i.e.*, composition.

One of Froebel's greatest merits was, according to the Belgian view and as is generally admitted, that he led children to undertake many little works to which they gave the mark of their own originality. The occupations, answering so well to the disposition to construct, force the attention of the child to comparisons, excite his interest and imagination, and assure as a result, the development of the faculty of combination, and of the æsthetic faculty.

Drawing, no less than manual work, can in its proper application be strongly penetrated with the spirit of the Froebelian method. Lessons in composition, etc., supply the occasion for pressing the pupils toward free work, for creating in them a liking for drawing, for placing them in a favourable condition for practical life.

The freedom of the pupil still leaves the master none the less free to influence, by dictating not the detail but the *kind* of drawing, by encouraging him with advice, without in any way imperilling his originality, by referring to the merits or pointing out the graver defects of the drawing.

7. *Colour in Drawing.*—According to Froebel, form and colour, although so essentially different, are for the child not divided, and the consciousness of colour is acquired by form, and form by colour. (See "Menschenerziehung.") The Belgian programme endeavours to teach the pupils to distinguish colours, to perceive their tones and *nuances*, and to take account at least of the less elementary laws of colour harmony.

Much as children however enjoy daubing their drawings with a paint-brush and colour, the exercises in washing-in colour ought to be restricted in the Belgian view, so as not to waste precious time, and lead to work that is poor and in bad taste. And for this reason : it is held that it ought to be mainly by object lessons that children should be taught a knowledge of colours (Het is vooral in de aanschouwingslessen, dat de kinderen de kleuren moeten leeren, p. 30).

Wool, coloured papers, samples of material, are used to teach the primary and secondary colours, light and dark tints, and tints of the same colour.

The teacher *shews* by mixture how secondary are formed from primary colours. Later, viz., in the higher division he teaches the theory of tints, of complementary colours, and analyses "*motifs*" that conform to the rules of harmony and good taste.

Although paints and coloured pencils are not proscribed, they are not used as much as in some other countries.

In some of the primary and high schools of the United States what is called a colour-wheel is used for instruction in colour-combinations. Two forms were seen, one costing about £2, or complete about £2 10s., the other, about 15s. In this system of teaching the Maxwell colour discs are used, and by means of them colour-combinations of the primary colours of a definite character can be obtained. Not only can the theory of secondary and tertiary colours be well illustrated, but also the theory of complementary colours.

8. *Relation of Drawing to other branches of Teaching.*—The Belgian teacher is required to make every possible use of the knowledge acquired in drawing by his pupils, in facilitating the study of other subjects. Not only so, but whenever his explanations on those subjects can be rendered intuitive by a drawing on the blackboard, he is supposed to make it so. The following examples will give some idea of what is intended :—

In *Arithmetic*, graphic constructions to illustrate magnitudes or to explain processes are to be occasionally employed.

In the *Metric system*, the division on the blackboard of the metre, the centimetre, and in the school-yard of the decametre, of the square metre into square decimetres, and similarly with the smaller and larger values, is to be to undertaken.

In *Geography*, sketches of the directions of the wind, and anything illustrating the subject are to be shewn by diagrams, maps, etc. Small tables of graphic statistics; sketches making the conceptions of cosmography more clear, etc., are to be used.

Notions concerning the fauna and flora of a country are to be illustrated where possible.

In *Physics*, levers, pulleys, screws, communicating vessels, jets, the barometer, air-pump, syphon, thermometer are, where necessary to be illustrated.

Notions concerning *Agriculture and Arboriculture*, the tools and instruments used, the system of drainage, the forms to give to fruit-trees, etc., etc., are to be similarly treated.

9. *Detailed Programme of Drawing in Belgian Schools.*—The following details of the programmes of drawing in Belgium will indicate how their conception of the subject is worked out in detail :—

TYPICAL PROGRAMME OF LESSSONS IN DRAWING IN THE PRIMARY COMMUNAL-SCHOOLS OF BELGIUM.

Lower Division.—Freehand Drawing.

I. Straight Lines.

(1) Drawing of vertical, horizontal, oblique and parallel straight lines, gradually increasing the length of them. The little sticks of the Froebelian material are placed in position.
(2) Estimation by sight of the length of straight lines; division of lines into equal parts.
(3) Arranging the little sticks in various ornamental forms, and drawing them.

II. Plane Figures.

(4) Square, median line, diagonal, right angle isosceles triangle, rectangle, median line, diagonals, right-angled scalene triangle, equilateral triangle, oblique parallelogram, diagonals, obtuse angled triangle.
(5) Estimation of the proportion between the dimensions of the various figures, estimating the relative magnitudes of angles.
(6) The drawing of forms obtained by folding and cutting paper, and of objects of slight relief seen from the front.
(7) Ornaments easily made up from angles; from the square and rectangle. Borders.

III. Curved Lines.

(8) First exercises in drawing slight curves of small length.
(9) Drawing of objects of slight apparent relief, such as table-knife, eraser, pallet, axe, etc.
(10) Exercises in the drawing of curves, related to an axis.

IV. Colours.

(11) Distinguishing the principal colours; blue, yellow, red, green and orange, violet, by means of wools, coloured papers, or samples of material. Arrangement of the colours in the order of solar spectrum.

Middle Division.—Freehand Drawing.

I. Plane Figures.

(1) Figures in various positions, divided by median and diagonal lines.
(2) Estimations of the relations between the dimensions of figures, and of the relative magnitude of their angles.
(3) Drawing of objects of slight relief, such as a gardener's spade, mounted thermometer, drawing-compass, carpenter's saw, and similar things.
(4) Simple ornaments, made up of triangles and quadrilaterals. Drawing of tiles, parquetry, etc.
(5) Sketches of the development of the cube, the rectangular parallelepiped, the right prism, and several simple solids of regular form.
(6) Sketches of the plan or elevation of objects, as for example of a ladder, table, window, door, chimney, and so on. Drawing by means of instruments.
(7) Drawing perpendiculars, parallels and angles.
(8) Construction of triangles and quadrilaterals.
(9) Reproduction to scale of a selection of sketches indicated in (5) and (6).

II. Curved Lines.

(10) Drawing of the circumference. Division into 2, 4, 8; 3, 6, 12; and five equal parts. Construction of the regular hexagon, octagon, and pentagon; division of a curve into equal parts. Exercises in the combination of regular polygons. Tesselated forms, marquetry.
(11) Drawing of objects of slight relief seen from the front. For example: horse-shoe, pulley, fanlight, oval hand-glass, screens, violin-case, key, scissors, etc. Natural leaves flattened; simple and compound leaves.
(12) Silhouettes or sections of a series of vases, bottles, plants, etc.
(13) Analysis of a number of ornaments obtained from simple curved lines of these combined with rectilinear figures; drawing of ornamental arrangements, formed by the pupils themselves of lines indicated by the teacher, by means of "*motifs*" borrowed from the models analysed.
(14) Drawing by means of instruments. The exercises in (10) are repeated with instruments.

III. Colours.

(15) Shew that green, orange, and violet are given by mixing two of the following colours, viz., blue, yellow, and red. Distinction of the primary and secondary colours; pale and dark colours. Tones. The gamut of colour.
(16) Exercise in cutting and gumming coloured papers.

IV. Verification of the Effects of Perspective.

An endeavour is made to make the pupil recognise for himself the difference between the apparent and real form of objects.

Higher

HIGHER DIVISION.—FREEHAND

I. Geometrical Drawing.

(1) Sketches of the development (*a*) of the prism, cylinder, pyramid, cone; (*b*) of models used in the course of the manual work.
(2) Sketches, elevations, plans, sections, etc., for a series of common objects. For example:—
  (*a*) Elevation only. Door, window with moulding; a pedestal with square base, cupboard, bureau-desk, kitchen stove. Simple façade of a house, etc., etc.
  (*b*) Elevation, plan, and section. Box with rectangular sides, table-drawer, rectangular table, school-room flower-pot, horizontal projection of the school-room, plan of the interior distribution of a house.
(3) Exercises in reading the plans of furniture, tools, buildings, elevation, plan, and section.
(4) Instrumental drawing; drawing to scale a number of exercises indicated in (1), (2), etc.

II. Perspective of Observation.

(5) First demonstrations of the effects of perspective unless already taken in the middle division.
(6) Very elementary intuitive teaching of the most important rules of the perspective of observation within the limits absolutely necessary to teach the pupils to draw from nature the common objects, in the series hereunder. (Simple apparatus, explaining perspective, positions of the square, rectangle, and circle, is recommended.)
(7) Perspective of the square and rectangle in square and horizontal positions.
(8) Direct applications of the perspective of the square and rectangle; doors and windows open at 90°. Front and profile views. Doors and simple windows. Double doors and windows; one open, both open.
(9) Perspective drawings of the cube and rectangle parallelepiped. (The position of a solid is varied.)
(10) Drawing from nature of objects made up of cubes and rectangle parallelepipeds. For example: Cubic decimetre, closed box, book, open box, table, cupboard, stool, etc.
(11) Perspective of the circle.
(12) Perspective drawings of the cylinder and cone.
(13) Drawing from Nature objects shewing the perspective of the circle, cylinder, and cone. For example: Cylindrical case, metre measure, flower-pot, vases, etc., etc.
(14) Drawing from nature of some garden-tools, carpenters's tools, and blacksmith's tools.
(15) Drawing from nature a more complicated series. For example: Chairs, school-desks, coffee-mill, lamp with shade, terrestrial globe mounted on feet with equatorial meridian circle, etc., etc.

Instrumental Drawing.

(16) Drawing to scale a series of exercises indicated under (2), (10), (12), (13), (14), (15).

III. Ornamental Drawing.

(17) Drawing freehand and then with instruments, regular curves, ellipse oval, spiral, etc. Easy applications to ornamentation.
(18) Drawing of leaves and flowers. Compound leaves.
(19) Drawing of conventional forms.
(20) Analysis of a selection of ornaments derived from plant forms. Design of ornamental arrangements by the pupils, from the "*motifs*," borrowed from their analysis. Free compositions by the aid of known conventional forms.

IV. Colour.

(21) Tints of one colour. Complementary colours. Notions of harmony of one colour.
(22) Exercises in cutting and pasting papers. Applications to pasteboard work.

The above is the programme for the boys; it is slightly modified for the girls' classes, so as to give it some bearing upon knitting, fancy-stitching, sewing, the drawing and cutting-out of patterns, and some application in embroidery, etc. This does not, however, demand special discussion. It may be mentioned that the official programme contains an appendix giving a study of the perspective of observation by one of the Brussels' teachers, Monsieur J. B. Tensi. In this he treats very ably the series of perspective exercises, briefly indicated above.

The instruction in drawing in Belgium is obviously systematic and well thought out, and under its present training programme its teachers are thoroughly prepared for their work.

In the "Exposition Universelle" of 1900, at Paris, the material exhibited gave good illustrations of this system of teaching.

10. *Teaching of Drawing in France.*—The subject of drawing has been under review in France recently, viz., at the first "International Congress—Teaching in Drawing," held in Paris, August and September, 1900. The Department of Public Instruction of France, at the suggestion of M. Eugène Guillaume, indicates that the method of teaching the subject ought to possess that unity which is characteristic of the subject itself. These principles, exhibited hereunder, may be expressed as follows:—

(a) Drawing ought not be exclusively based upon perception (sentiment), nor must it be acquired only from empirical exercises.
(b) Drawing is a *unity;* there are not several kinds of drawing. Geometrical drawing, architectural drawing, the drawing of ornaments in a figure, constitute modes of one and the same art, and these modes, though various, have common principles and one and the same essence.
(c) Drawing is, before all, a science having its own proper method, with principles that are rigorously connected, and which, in its various applications, give results of incontestable certainty.
(d) In drawing all the methods which have the character of absolute certainty are given by geometry. Geometry makes known the laws of geometral representation, and those, too, of perspective representation; it gives also the position of shadows; it is for this reason that that science contains and constitutes the whole of drawing.
(e) The terms (proportion, symmetry, similitude, equilibrium, value, movement) employed in arts in order to indicate the essential and higher qualities of forms and their relationships, are borrowed from geometry, and this science exists in the language of art only because it is in the essence of the things which constitute its object.
(f) The teaching of drawing even from the beginning ought not to be limited to sketches of the exact order. The elements of drawing which have the fine arts as ultimate object, should naturally be united with linear and geometrical drawing.
(g) It is by a judicious selection of good models, that one ought to form the taste and develope the perceptions.[1]

Such

[1] See Rapport 1re Congrès international de l'enseignement du dessin tenu à Paris, du 29 Août au 1 Septembre, 1900. Paris, 1902, pp. 96-97.

Such are the principles which together constitute the method of the subject in the French official view. It may be said to be common to the two kinds of drawing. These are different only as regards their programmes. Their pædagogy is indicated hereunder. (The matter is translated from the official publications.)

PROGRAMME IN DRAWING—(THE MINISTRY OF PUBLIC INSTRUCTION OF FRANCE.)

Plastic drawing.	Geometrical drawing.
Plastic drawing, called also imitative drawing, freehand drawing, drawing from nature.	Geometrical drawing, called also graphical drawing, and linear drawing.
Plastic drawing has for its object the graphic representation of *the form*, that is to say, that which results from the presence of an object and light, and can be estimated only as seen.	*Geometrical drawing* has for its object the graphical representation of the *figure*, viz., that which results from measurement, such as may be made on the material objects.

First Section.

Elementary study of figures of two dimensions.

(1) Drawing and dividing straight lines into equal parts. Evaluation of the proportions of the straight lines in regard to each other.	(1) Use of instruments for drawing straight lines, circumferences, polygons; use of the rule, compass, protractor.
(2) Evaluation and reproduction of angles.	(2) Geometrical drawing with intruments in which straight lines alone enter, and reproductive simple decorative "*motifs*" for plane surfaces, parquetry, etc. Washing in with china-ink some of these drawings, and with colour.
(3) Elementary principles of ornamental drawing; circumferences, regular polygons, rose-stars, etc.	(3) Geometrical drawing with instruments in which straight lines and circles enter. Washing in with china-ink and colour.
	(3a) Ordinary curves, ellipse, hyperbola, parabola, basket-handle curve, spirals, volutes. For girls application to embroidery, tapestry, etc.
(4) Regular curves other than the circumference of the circle, ellipses, spirals, volutes, curves borrowed from the vegetable kingdom, stems, leaves, flowers, etc.	(4) Figured sketches and linear geometral representations, to a definite scale of geometrical solids, and very simple common objects, framework, voussoirs, pieces of furniture, etc.
(4a) For girls, patterns of parts of garments.	

Second Section.

Elementary study of figures of three dimensions.

(5) Preliminary conceptions regarding the representations of objects in their *true* proportions (Elements of geometral drawing) and upon the representation of objects in their *apparent* proportions (Elements of Perspective).	(5) Conceptions regarding projection, the straight line, and plane surfaces.
(6) Geometral and perspective representation, in outline with shadows, of geometrical solids, and simple common objects.	(6) Projections of geometrical solids and simple common objects. Displacement of these objects and solids, parallel to the planes of projection.
(7) Drawing of ornaments in relief, the elements of which are borrowed from non-living forms, such as mouldings, dentricles, beadings, ovolos, plaster mouldings representing surface ornaments of slight relief, models known as "plane upon plane."	(7) Elementary notions as regards the drawing of ordinary shadows, generally at 45°, and the washing in of plane surfaces of polyhedric surfaces, and of the simplest curved surfaces.

Third Section.

Elementary study of ornament, of architecture, of the human head, and of animals.	Elementary study of architecture and mechanics.
	A. *Architecture and construction.*
(8) Drawing of ornaments in bas-relief, borrowed from living forms, such as ornamental leaves and flowers, palms, foliage, etc.	(8) Walls and mouldings. General ideas as to the orders of architecture.
(9) Drawing of architectural details, such as coins, pedestals, bases and shafts of columns, antæ (pilasters), and cornices of various orders.	(9) Constructions. Notions on carpentry and joinery.
(10) Drawing of the human head: Preliminary ideas as to its general structure and proportions of its various parts.	(10) *Ensemble* and details of the Ionic order; vaults, etc.
(11) Drawing of architectural details, such as capitals, gargoyles, masques, decorative heads of animals.	(11) *Ensemble* and details of the Corinthian order. Metallic construction, locksmithing, etc.
	B. *Mechanics.*
	(8a) Joints, scarfing, etc. Rivets, pins, bolts, plates, castings.
	(9a) Beams and their supports, trusses, hinges, pins, frames, corbels, sockets.
	(10a) Transmission, pulleys, chains, gearing, etc., etc.
	(11a) Cocks, valves, pumps, pipes, etc.

Fourth Section.

Complementary Studies.

(12) Ensemble and proportions of the human figure.	(12) Linear perspective.
(13) Study and drawing of different parts of the human body. Elementary ideas of anatomy. Copy of extremities and details of the human body.	(13) Completion of the theory of shadows, and of tinting. Annular and helicoidal surfaces.
(14) Drawing of architectural details, decorative figures, caryatids, vases ornamented with figures, frieses.	(14) Topography. Copy and reduction of maps and topographical plans. Tinting plans and maps.
(15) Drawing of the human figure and of animals, from plaster and from nature.	(15) Drawing of building-elevation and sections of a building, and the principal constructional details.
(16) Studies of landscapes. The pupils should be exercised in drawing from nature, landscapes, and buildings. Modelling and composition.	(16) Drawing of machines. Elevation with sections of a machine and the principal constructional details.

Although this development refers to somewhat advanced drawing in its later sections, it is important as shewing the French conception as to the unity of the subject, and the parallelism of certain branches. The principles indicated may be transferred to the most elementary work.

11. *Drawing in the Infant-Schools of France.*—The official programmes of the Ministry of Public Instruction of France prescribe exercises in drawing for the *école maternelle*, viz. :—

(a) Drawing of lines and combinations of lines.

(b) Reproductions of easy drawings of common objects and simple ornaments.

The use of slates and paper rules into squares has for its aim the development of manual skill in the child, *i.e.*, to help him without much effort to operate with certainty, to draw even somewhat complicated ornaments, and thus to find, almost mechanically, what is derivable from squares.

Many of the mistresses of maternal schools seek to awaken more specially the initiative of the child by exercises in free drawing (*dessin libre*), in which each pupil gives as well as he can a graphic reproduction of his ordinary impressions of anything.

These may be suggested by a fable, or by something he has seen, a living thing or any object whatever, or a scene from real life. This kind of drawing was seen by the Commissioners in Paris. It developes in the child interest in what he sees; he observes more carefully, the effort to recall strengthens his memory.

The exercises in free drawing naturally give results less accurate as regards form than those given by work with squared paper, but they are more educative.

Drawing by sight includes all sorts of forms, lines, letters, numerals, and any other conventional signs, silhouettes of animals.

In presenting a common object for drawing by the pupils, the mistress follows with her finger the outline to be reproduced so as to assist the child's idea. For these exercises the selected models have by preference a curved form. They commence with children of about 5 years of age.

The ornamental forms are often treated as exercises of memory.

The French schools believe strongly in developing the natural taste in little children for colour. Wherever possible coloured pencils are "placed at the dispositions of the dear little ones," [1]and relieved of the monotony of black and white, the children multiply the occasions of delighting their eyes with colouring, often bizarre, it is true, nevertheless sometimes very delicate. Thus little by little they are initiated into a knowledge of colour, and into their classification and shades.

Exercises in modelling are frequently found in the infant-school; clay, wax, plasticine, etc., being used.

The first exercises in modelling are to roll the matter into a ball between the two hands; rolling gives a cylinder. A cone is easily produced. Then from these the children are shewn how to produce many other forms. Their effort to imitate a form is one of the important educative elements.

12. *Drawing in French Primary Schools.*—The importance of visual observation, and of its reaction on "manual observation," is fully recognised in the French programme. The drawing lessons are of two kinds, viz., drawing from nature, and geometrical drawing. The two parts of the former especially are the education of *eye* and *hand*. In the first "International Congress on the Teaching of Drawing" at Paris (1900), at which there were official representatives (delegates) from Austria, Belgium, Bulgaria, Cuba, Ecuador, France, Great Britain, Hungary, Japan, Luxemburg, Mexico, Roumania, Russia, Switzerland, and the United States, certain resolutions were passed which reveal to some extent the modern tendencies in drawing. These were as follows :—

(1) That the pædagogic prepar tion in respect of the teaching of drawing in primary schools should be insisted on in the cases of all teachers of those schools.

(2) That a parallelism should be definitely established between drawing from nature and geometrical drawing

(3) That more serious attention should be given to primary elementary studies in drawing, and there should be greater strictness on the part of examiners in regard to the Certificate for Primary Studies.

(4) That special conferences should be instituted to supervise the progress of the studies.

The following resolutions were also carried :—

(*a*) That there is reason to maintain the intuitive method of Froebel and Madame Pape-Carpentier in the infant-school.

(*b*) That exercises in application are a preparation to the study of drawing, such that ought to be taught in the elementary school.

(*c*) That at the primary school such exercises be continued and synthesised so as to serve as auxiliaries in the teaching of free-hand drawing, so giving it an experimental and geometrical character.

(*d*) That there is reason to completely suppress in the primary public schools the squared-paper for drawing *and the drawing-books whose exercises lead merely to servile copying.*

This last is significant as shewing that *copying* is fully recognised as worse than valueless as a means of teaching drawing; at least this is revealed in the discussions.

13. *Detailed Programme of French Primary School.*—In order to give an idea of French teaching, not to-day, but as far back as twelve years ago, the following outline, translated from the programmes of the Lille primary schools, is given; it is dated 1883. (The edition used is 1891.[2]) :—

TEACHING OF DRAWING, PRIMARY SCHOOLS OF LILLE.

LOWER DIVISION.

October.—*Points* symmetrically placed. Drawing straight line. Drawing multiples of given line. Parallel lines in all positions. Convergent and divergent lines. Division into 2, 4, 8, &c., parts. *Ornaments* by means of symmetrically-arranged straight lines, &c.

November.—*Angles.* Perpendicular oblique and oblique parallel lines in all positions. Right, acute, obtuse angles, Internal or external triangles, with sides perpendicular or parallel. *Ornaments* composed of parallel lines, letters. Drawing mason's square, school square. Ribands, and figured materials.

December.

[1] *Op. cit.* p. 106. It is worthy of remark that French officialism is not incapable of expressions of kindly interest in children. The phrase of the text is :—"Des crayons de couleur son libéralement mis à la disposition des chers petits."

[2] Organisation pédagogique des écoles primaires. Lille, 1901.

[2] Pp. 105–109.

December.—*Triangle.* Base, height, various kinds, *square* and rectangle, division into parts. *Ornament.* Sketches of rakes, benches, tables, simple chairs, letters.
January.—Lozenge and its subdivisions. Parallelogram and trapezium. Flagging, and bordering by squares and rectangles. *Ornament.* Knife, hammer, plane, joiner's bench, scales, bays of doors, windows, etc.
February.—Squares in diagonal. Varied applications. *Ornament.* Glasses, pans, coffee-pots, grillers, etc.
March.—Dentils and denticles, simple, rectangular, points, etc., etc. *Ornaments.* Various applications, wooden gate, etc., etc.
April.—Drawing an arc, then a circumference by points. Divisions into 2, 4, 8, 3, 6 parts. Radius, chord, versed sine, secant, tangent. *Ornaments.* Simple forms from curves, letters, numbers.
May.—Inscribing square, triangle, hexagons, etc., in circle, stellar polygons, roses. *Ornament.* Borders, pavements, etc., forms from curved lines.
June.—Various drawings in two or three tints by means of hachures. Simple leaves and fruits.
July and August.—Recapitulation, with exercises covering the whole course.

MIDDLE DIVISION.

October.—Drawing lines, multiplication of them, adding a fraction, measurement of lines drawn ; division of them. *Ornaments.* Simple forms by circles and circular arcs.
November.—Angles and triangles of various kinds, and their construction. Marquetry by means of triangles. Imbrications by means of combined circular arcs.
December.—Squares, rectangles, lozenges, trapeziums. Marquetries derived therefrom. Interlaced curves for borders, ornaments, marquetries.
January.—Circle, chord, versed sine, secant tangent. Regular and stellar polygons. Applications to marquetry.
February.—Lines joined by arcs. Stems, leaves, flowers. Geometral representation of geometrical solids, and of any simple objects. Roses. Gratings.
March.—Notions of free perspective. Perspective drawing of geometrical solids. Very simple examples, as crosses, steps, etc.
April.—Principal mouldings. Perspective drawing of common objects.
May.—Application of shadows to geometrical solids, and to common objects drawn in perspective.
June.—Common objects with shadows.
July and August.—Preliminary studies of animals ; various ornaments.

HIGHER DIVISION.

October.—Drawing lines in all positions ; testing scale and square ; division into equal parts ; drawing perpendiculars with square ; geometrical constructions for perpendiculars and parallels. *Angles.* Addition and substraction of angles and divisions of angles. Fillet, plate-band, chamfer, mitre, girth, etc. Borders, etc., derived from geometrical curves.
November.—Division of circle, construction of protractor ; construction of triangles with different data ; special case of right-angled triangles, similar triangles, etc. Varied designs of pavements, etc., engine-turned, frets, parquetries, straight or oblique. Geometrical solids, groups.
December.—Square, rectangle, parallelogram, lozenge, division, diagonals, etc. Trapezium. Various pavements and borders, with two or three tints by hachures or colour washings. Furniture, tables, boxes, cupboards, bookcases, class-room furniture.
January.—Circle, chord, versed sine. Centre of arc of circle. Circle through 3 points. Concentric, intersecting and tangent circles. Drawing tangents. Joining parallel and convergent lines. Quarter-round, cavetto, arch, baguette, torus, etc. Mouldings with ovolos, etc.
February.—Proportional lines. Proportional division of a line, and division of lines. Construction of scales, scale of tenths. Elevation and sections and geometral representation of simple surfaces. Bays of doors, windows, chimney, table, cupboard, bookcase, etc.
March.—Recapitulation of principal exercises during the "Semester." Sketches of plans, etc., of the school-room, school, and its various buildings. Plan, profile, and sections of the furniture of the school-room.
April.—Regular polygons, inscribed within and described about a circle. Stellar polygons. Square equal to given triangle and rectangle. Groups of regular polygons to cover a surface ; various arrangements ; roses.
May.—Drawing of mouldings having curves with two centres, ogees, basket-handle curve, oval, ogive, spiral. Combination of these curves in ornaments.
June.—Various drawings of ellipse. Volutes. Drawing with hand and compass. Various leaves. Ornamental flowers. Sketches of insects and animals.
July and August.—Elementary ideas as to the various orders of architecture. Study of animals. Drawing of the human head ; its parts, its proportions. Various drawings from reliefs.

In the above outline of the programme of the teaching in drawing it will be seen that the work done each month, though of a higher grade than that of the same month in the preceding year, is to some extent a recapitulation. The course is orientated toward architectural and engineering drawing, and hence is *practical* in its tendency. The purely artistic elements are, however, by no means neglected, and the whole system is *educative* in the highest sense. It is of a very different character from the mere copying from drawing-books. The above criticism may also be made of every country in Europe.

14. *Drawing in the Elementary Schools of Germany.*—In Germany, Professor C. Götze, in 1897, urged that drawing can be made almost play, but a kind of play from which the child derives not only pleasure but also the power of accurate observation. This was held to be of *primary*, while technical skill was of secondary importance. Hence he argued that the methodology of drawing should be based upon careful observation and reproduction of objects.

Geometrical and ornamental forms had been drawn for years past, yet the pupil rarely could reproduce natural objects until the end of his career, and sometimes not even then.

And he argued that children should begin with it, but geometry should not be too early associated, since he alleged their joint study imperilled the æsthetic sense. K. Lange also recognised that the geometrical side tends to repress the artistic, and went so far as to advocate the abolition of all reference to geometrical forms in the lower classes.

While it is true that the geometrical side can be so treated as to repress the artistic, it is very questionable whether this is a true dictum.

The programe in drawing of the Folkschools of Dresden is given in Chapter VI, Section 21, to which reference may be made for details. In brief, it is that the drawing lessons include both freehand and geometrical drawing. The self-reliance of the children is cultivated. The aim of the course is both educative and practical, drawing from dictation, from memory, and from nature is practised. The theory of colour, harmony of colour, the mixing, shading, application of colour, are taught ; the principal laws of perspective are learnt. Plaster models, and real objects are used, mere copying from drawings is not regarded as learning drawing. Difficult curves are drawn. The subject is undoubtedly well learnt and ably taught by the average teacher of the German school, trained under existing conditions.

The

The weight attached to drawing in Germany is high, "Das Zeichnen,' says Herr Direktor Seyfert, "recht aufgefasst, erscheint als das wichtigste der Formfächer neben der Sprache."[1] (Next to language, drawing rightly comprehended, appears as the weightiest of the branches of knowledge dealing with form.) He lays stress upon the drawing of real objects, drawing from memory (aus der Erinnerung), and recognises not only the practical, but also the æsthetic advantages of drawing properly learnt.

15. *Drawing in the Primary Schools of Norway and Sweden.*—According to the programme of the Folkschools of Kristiania[2] the instruction in drawing (Tegneundervisning) aims at—

(1) Cultivating the pupil's eye to the greatest possible independence in the observation and interpretation of form.

(2) Conferring on the pupil's hand the greatest possible readiness as far as expressing the forms which are represented in his drawing of actual objects.

The work is confined to the two upper divisions of the Folkschool, viz., the 2nd division (4th and 5th classes), and 3rd division (6th and 7th classes) each class having two hours weekly.

In the 4th class, linear drawing is practised, including polygons up to the octagon, explanation and execution by geometrical construction *first*, and then freehand afterwards, contrary to the Belgian method (forklares og indøves først ved geometrisk konstruktion, dernæst paa frihaand).

In the 5th class, circles, ellipses, and spirals, and curves generally are treated, and figures introducing combinations of any of these.

In the 6th class the drawing is more advanced, Indian ink (tusch) being used, and shading being attended to.

In the 7th class, perspective drawing is learnt, objects like the cube, prism, and pyramid being first drawn, their bodies with curved lines, groups of objects, and then such objects as a table (bord), chair (stol), steps (trappe), etc.

The scheme of teaching calls for no special comment.

In Sweden the course in the Real-school extends over the six classes, lessons in projective drawing coming as early as the third year. The course includes geometrical and perspective drawing.[3]

Drawing in Norway and Sweden is connected with the Manual Work. It has the excellence which belongs to many other parts of the system. The drawing seen was of a high character, and the professional higher artistic drawing, excellent.

16. *Drawing in the Primary Schools of Switzerland.*—In many of the infant-schools of Switzerland, drawing is executed upon dotted or square slates or paper—a method which is antagonised to the Belgian view. Commencing with the Froebelian material, children place the cubes, sticks, etc., in various positions, and then make drawings of them. Straight-lined ornaments obtained by paper-folding, etc., are also used to develope ornamental arrangements. Geometrical drawing, the drawing of flat objects or objects of slight relief, composition and drawing from memory are employed in the higher classes. The lower division of the primary school may be said to be devoted to the drawing of simple objects without indication of the third dimension; the higher division embraces also perspective drawing. The various cantons shew individual features in regard to the method of teaching.

In the programme of the Geneva infant-schools the children of 3–5 years of age are prepared for drawing lessons by using the Froebelian material. In the period 5–7 years, they continue their preparatory exercises by means of cubes, squares, sticks; they draw the lines produced by folding, and the ornamental forms that can be produced by combinations of straight lines. And they are prepared for curve drawing. They are called upon to make little compositions of their own.

In the primary schools the lessons in drawing and geometry are to some extent fused. The following is the programme:—

1st Year (7–8) (six half-hour lessons per week).—Study, by means of objects, of the fundamental abstract ideas used in drawing. Point. Horizontal line. Vertical line. Parallel lines. The simplest geometrical figures. Drawing of common objects without indication of the relief. Drawing of leaves by oppositely joining the principal points determining their character. Simple decorative sketches (*motifs*). Exercises from memory. Compositions.

2nd Year (8–9) (six half-hour lessons per week).—Review of the area covered in the preceding year by means of an object that permits the master to present new ideas, in particular that of angles. Axis of symmetry explained by letters. Application of these new ideas to the drawing of leaves. Ornamentation of simple objects. (In these exercises the pupils have to fill in the surfaces by hachures.) Exercises from memory. Composition.

3rd Year (9–10) (four hours per week).—Representation of simple objects without indicating the depth. The simple forms are easily recalled from combinations of triangles and rectangles. Application to architectural forms (façades of buildings). Exercises in ornamentation. Drawing of leaves, compound leaves. Exercises from memory. Composition. Attempts to draw with the pen.

4th Year (10–11) (three hours per week).—Plan of the room. Use of scale of reduction. Vertical and oblique plans. Reconstruction of some simple bodies through combining a certain number of sections. First attempts at drawing in three dimensions. Exercises from memory. Composition.

5th Year (11–12). (Girls, two hours; boys, three hours.)—Bodies of rotation, their characters explained by plain sections; their construction from sketches of a side view of the objects. Drawing of objects in free perspective. Exercises from memory. Composition.

6th Year (12–13). (Girls, two hours; boys, three hours.)—Drawing of solids and objects from sections and side elevations. Development of their surfaces. Ornamentation of these surfaces. Drawing of ornaments from models with indications of the whole which they decorate. Notions of normal perspective. Exercises from memory. Composition.

The programme in the Canton of *Vaud* is very similar. It is given in Chap. V, but is reproduced here for convenience—

7th Class. (Children 7 to 8) (six lessons a week of twenty minutes each).—Models shewn the pupils and drawn by the mistress on the blackboards.

1st Semester.—Pupils draw on slate; the trial so made as not to weary the hand. Elementary exercises leading the pupils gradually to the drawing of simple objects seen in the classes, in the town or in nature.

2nd

[1] Schulpraxis. Leipzig, 1900, p. 153.
[2] Skoleplan for Kristiania folkeskoler, 1900, pp. 19–21.
[3] Betänkande afgifvet den 8 Dec. 1902 af. . . de allmänna läroverken, etc. Stockholm, 1902.

2nd Semester.—Collective drawing with pencil, the hand being absolutely free—that is to say, without either rule or slip of paper. Study and methodical drawing of straight lines, viz., horizontal, vertical, oblique: division of these lines into 2, 4, 8 equal parts. Various applications of the drawing of simple objects that have been previously analysed in so far as is suitable to the age of the pupils. Elementary study by means of folding of the following geometrical figures:—Square, rectangle, isosceles triangle, symmetrical trapezium, axis and diagonals. Methodical drawing of these lines. Application of the studied lines and surfaces to several very elementary exercises in decoration. The most simple decorative elements, points, lines, crosses, small circles, right-angles; manner of grouping them (repetition and lateration). Drawing, in elevation only, of simple objects affording applications of the acquired notions. Exercises of dictated drawing and of drawing from memory, using the slate only. Exercises in estimation by taking as a basis of comparison sticks of 10, 20, 30, 40, and 50 centimetres.

6th Class.—Revision and completion of the ideas studied during the second semester of the first year. Division of lines into 2, 4, 8, 16 equal parts. Studies by means of folding, square, and right-angle; rectangle of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$; various positions of rectangle, lozenge, (rhombus), isosceles and right-angled triangle, the square and its use, symmetrical trapezium and right-angled trapezium. Drawing, in elevation only, of simple objects affording applications of the ideas studied. Elementary decorative *motifs*. Exercises upon the slate, of dictated drawing and of drawing from memory. Exercises of evaluating, in decimetres, exact lengths equal to or less than 1 metre.

5th Class.—Drawings larger than those which have been executed in the lower class. Models from nature, and constructive drawing on the blackboard. Review, with extension of the ideas studied in the lower class. Verticals and plummet lines. Horizontals and the level of still water. Parallel lines, lines perpendicular to each other. Study of angles by means of some object (*e.g.*, bent rule, more or less opened book, etc.). Right-angle, square, acute, and obtuse angles. Revision and completion, by means of folding and cutting out, of the study of the simplest geometrical rectilinear figures, square, square angle, relation of surface for rectangles of various proportions, $\frac{1}{2}$, $\frac{1}{4}$, etc. Development of the cube and of the parallelepiped; construction from paper or thin cardboard. Lozenge inscribed in a rectangle, ratio of their surface. Isosceles triangle, $\frac{1}{2}$ of a square, or $\frac{1}{2}$ of rectangle. Parallelogram traced by means of a rectangle. Trapeziums traced in a square and in a rectangle. Division of lines into 2, 4, 8, 16, 3, 6, 12 equal parts. Application of these geometrical ideas to drawing in elevation of various objects; locksmith designs, mosaic, parquetry, joinery, and simple decoration. Shields of simple form, conventional hachures, denoting blue, red, and green. Design from memory upon the slate or in an album. Exercises in evaluation by the help of sticks of which the lengths are 5, 10, 15, 85, 95, 100 centimetres.

4th Class.—Models from nature and constructive designs on the blackboard. Study and drawing of arcs, and of circumferences. Pointed and semicircular arch. Locksmithing and decorative designs. Division of circumference of circle into 4, 8, 3, 6, 12, 5, 7 equal parts. Inscription of regular polygons. Stellar polygons, and roses, (*rosaces*) derived from flowers. Division of lines into 5, 10, 3, 9 equal parts. Application:—Decorative borders composed of these new elements. Armorial shield:—Typical elementary forms, varied forms approaching the modillion; conventional hachures indicating blue (azure), red (gules), green (vert), black (sable), gold (or), and silver (argent). Federal shield (arms). Vaudoise shield.

Dictated Drawing.—Lines of construction, frequently dictated by a pupil. Drawing from memory in an album, kept specially for these exercises. Exercises of evaluating lengths of from 1 centimetre to 2 metres. These lengths ought to be drawn by straight lines traced on the blackboard, by a cord, by the size of an object, or, better still, by a rule presented successively to all the pupils of the class.

3rd Class.—Models, constructive designs on the blackboard. Study and freehand drawing of regular curves other than the circle, elliptic curves. The egg, oval and ovolo. Variation of the proportions which these two curves may exhibit. Application:—Drawing of simple vases, and decorative designs in which the ellipse or the oval enters as the dominant form. Curves borrowed from the vegetable kingdom. Study and drawing of leaves often used in ornamentation; flowers drawn in elevation and in vase forms, which may be derived from these studies; for example, the tulip, tea-cup; the bell-flower; bell, chimney for lamp or gas-flame; the lily, bind-weed, wine-glass, or other models which industry can furnish. Similar studies made with fruits. Decoration of the vases. Spirals and volutes drawn freehand. Applications of these lines to ironwork (boys), to embroidery (girls). Models in relief, and first ideas upon the effects of light, vertical and horizontal shadows. Drawing from memory upon a special leaf and on reduced scale. Exercises in evaluation, upon lines or objects seen in the class.

Measuring.—Solution of a problem which ought to be accompanied by a sketch shewing the surface or surfaces constituting the object of calculation.

Freehand Drawing

2nd Class. Models.—Models in relief of large dimensions, and natural models. Constructive design on the blackboard. Drawings as large as possible. Ancient arms, leaves, flowers and flower-buds treated ornamentally, and their use in decoration. Borders, roses, ornamental designs in bas-relief. Drawings of vases belonging to various epochs. Decorative exercises applied to these forms. First notions of the perspective of observation. Prism with square base; with rectangular base; cylinder. Drawing of various objects approximating to these geometrical forms. Frequent exercises in drawing from memory.

2nd Class—continued (Boys). *Geometrical drawing with pencil, graduated rule and square.*—Notes and side-sketches in a copy-book ruled in squares with lines five millimetres apart. Making a fair copy in pencil, to a determinate scale, upon the leaves of 25 by 34 centimetres. Roman letters employed in geometrical drawing; small letters, large, and medium. Exercises in small letters, alphabet and various letters. Utilising the squaring of the sketch-book. Titles in large Roman letters of medium breadth; distance to be observed between the letters and between the words. Conventional lines employed in industrial drawing. Framing and titles. Perpendiculars and parallels drawn by means of the rule and square. Framing and titles. Rectilinear figures drawn to the scale of 1/10 and 1/100 (0·1 -0·01). Properties and construction of triangles and of quadrilaterals. Development of geometrical solids bounded by plane surfaces. The square and right angle; grating in forged iron affording application of these two figures; sketch of the object, and fair copy to scale of 3/10. Title in large and small Roman letters. Same exercise with large mosaic models. Sketches of building-plots and fair copy to a scale of 1/100. First notions upon communal plans and boundaries; simple sketches having relation to working in iron, woodwork, and dressed stones. Manner of disposing the various sides to be indicated.

1st Class (Boys). *Large sketches drawn freehand. Models.*—Models in relief of large dimensions, geometrical solids and various objects. Designs from the vegetable kingdom. Ornaments and their application. Vases belonging to various periods in the history of art. Rational application of mouldings. Attempts at decoration. More complete study of light-effects, utilising moreover the collections of models of Viollet-le-Duc.

Ideas of Perspective.—Geometrical drawing and perspective drawing. General principles resulting from observation of seen objects whether geometrical or perspective. Principals as to verticals; their direction constant; apparent length of verticals of objects seen in perspective. Principles as to horizontals: lengths and directions of horizontals in models seen from the front; lengths and apparent directions of horizontals seen in perspective. Plan from front (front elevation *tableau*). Plan and line of horizon; its use in the determination of the slopes of parallel, horizontal lines seen in perspective. Distance point. Decrease of distance upon the line of the horizon. The square and cube. Cubes cut by planes parallel or perpendicular to its base. Prisms. Circle inscribed in a square; cylinder; horizontal circles having their centre upon one and the same vertical. Pyramids and cones. Perspective sections of several solids by planes parallel or perpendicular to their base. Drawing in perspective, objects approaching in form to geometrical solids. *Geometrical drawing with the aid of a 50 centimetre-graduated rule and square and compass.*

1st Class—continued.—Review of notions studied during the preceding year. Drawing perpendiculars and parallels by means of compass. Division of straight lines and of angles into equal parts. Scales of reduction. Regular polygons constructed by means of the compass. Topographical polygons. Division of the arch into equal parts. Construction by means of the compass of the oval and of the ellipse (false). Curves called basket-handle (*anse de panier*). Agreement of straight lines and curves; spirals; mouldings.

1*st Class continued.—Elementary ideas upon Projection.*—Necessity of drawing from projection. Horizontal plane, vertical plane, of front and ground-line. Horizontal projection or plane. Vertical projection or elevation. Numerous exercises upon the projection of points, of lines, of surfaces, planes, and the principal geometrical solids, prisms, cylinders, pyramids, and cones. Section sketches (inked over) of common simple objects, of locksmith's work, of joinery, of carpentry, and of stone structures. Profiles and sections. General idea of conventional tints.

1*st Class continued* (Girls).—*Freehand Drawing* —Models in relief of large dimensions. "Motifs" and various objects. "*Motifs*" borrowed from the vegetable kingdom; leaves ornamentally designed. Vases belonging to various periods of history and art. General study of mouldings, furniture, wainscots, feet of vases; of tables, of lamps, etc. General principles of decoration. Geometrical elements. Elements drawn from the vegetable kingdom (leaves, flowers, flower-buds, fruits, etc.) Elements drawn from the animal kingdom (butterflies, dragon-flies, bees, "lady-birds," birds). Decorative borders formed from these elements. Application of these elementary notions to the decorations of various vases. Lessons upon colours and tints. Decoration, style on style. Opposition of colour and harmonisation. Indication of the proper means for reproducing the designs upon material, and fixing them. Study of light-effects by using the principal models of the collection of Viollet-le-Duc. Notions of perspective of observation. Drawing of various objects from Nature. Groups of objects. *Geometrical Drawing*—Elements of geometrical drawing by means of the graduated rule and square; application to drawing in section. Reduction of patterns.

17. *Education of Swiss Primary Teachers in Drawing.*—The instruction in drawing at the Seminarium at *Küsnacht* will give some conception of the Swiss view as to what constitutes the necessary instruction in the teaching of drawing for the primary teachers. The lessons for the teachers are divided into two branches, viz. :—

(i) Freehand drawing; and
(ii) Geometrical drawing.

In the former the aim is to give some idea of the theory of the forms to be found in Nature and Art; to give a rapid sketch of the development of drawing; some idea of the graphical representation of objects, introducing the effects of light and colour; some knowledge of the various styles and of æsthetics, and some preparation for the future exercise of the teacher's calling in regard to the subject under consideration.

The latter, geometrical drawing, aims at skilful and accurate work with drawing instruments, and it affords exercise in the technical expression of geometrical ideas.

It further affords some basis for the clearer perceptions of space-relations through accurate drawing.

FREEHAND DRAWING.

I Class (3 hours per week).—The drawing of ornamental forms for flat surfaces. (*b*) Plant-drawing, leaves, branches, flowers. (*c*) Free perspective and its laws. Drawing of objects bounded by plane surfaces. (*d*) Exercises in colouring and shading. (*e*) Modelling.

II Class (2 hours per week).—(*a*) Plant-drawing. Difficult flowers and plants. (*b*) Plastic ornament. (*c*) Free perspective. The drawing of objects with curved surfaces, interiors, still-life. (*d*) Colour and shading exercises.

III Class (2 hours per week).—(*a*) Architectural drawing. Groups of houses. (*b*) Drawing of figures and animals, hands, feet, stuffed animals. (*c*) Colouring and shading exercises. Theory of colours.

IV Class (2 hours).—(*a*) Continuation of landscape drawing. (*b*) Figure drawing—heads, finally the complete figure. (*c*) Brief sketch of the theory of style. (*d*) Methodical hints concerning the teaching of drawing.

GEOMETRICAL DRAWING.

II Class (1 hour per week).—Exercises in planimetrical construction, sketches of surveys of plots of ground. (b) Construction of some practically important curves.

III Class (1 hour per week).—(a) Stereometric figures in oblique parallel projection. (b) Exercises in the theory of projection applied to plans and elevations. (c) Sketching of some simple objects.

IV Class (1 hour per week).—(a) Exercises in construction and the theory of projection. (b) Sketching of some different parts of buildings and of machines. (c) Dimensioned drawings.

From the above it will be recognised that the Swiss teacher has been taught at least to intelligently understand drawing, and, both as school-pupil and as student of teaching, he has had practice, not in *copying* drawings, but in drawing itself; and having studied geometrical drawing and perspective in both capacities he has had considerable *practice*.

18. *Drawing in other parts of Europe.*—In Austria, Denmark, Finland, Holland, and Russia, examples of drawing were also seen; in many cases these were remarkably good. The satisfactory influence of the teaching of drawing in the primary school can be readily recognised in the technical drawing, and in the art-productions of the various countries. The more professional branches of drawing seen in the technical schools were uniformly well executed; and the artistic drawing often of surprising excellence. In Italy in particular this was specially noted. In Russia, there is considerable originality of form, and from a technical point of view the work there was also excellent. One could not fail, in comparing the *average work* in our own schools, colleges, and in the University, to be struck with the difference in quality.

It is unnecessary to enlarge upon the details of the methods of teaching: they can be summed up very simply. All countries have a very similar methodology, and all believe in properly qualifying the teacher. Further, *all* believe that *teaching to copy* sketches, etc., *is not teaching drawing*, and that as an educative process *mere copying is of very inferior value.*

It need hardly be said that a judgment concerning skill in drawing is not to be based, as it often is, upon the ability of children to *copy* some lithograph of a landscape, or reproduce a drawn figure in some "graduated series of drawing lessons" for, to use the Belgian phrase, this is merely skill in *imitating an imitation* (*op. cit.*, p. 4, en de taak van den leerling bestaat in het nabootsen van eene nabotsing).

19. *Modelling.*—Among the methods of developing the form-sense and form-memory may be mentioned the modelling of plastic materials, clay, plasticine, etc. This is becoming a feature of teaching throughout the world. During the Commissioners' visit to Lausanne in Switzerland, primary teachers were seen *spending their vacation at the Ecole Normale*, learning, among other things, modelling. The teaching of modelling has already been introduced into Australia, with apparently very satisfactory results.

The question of introducing modelling as part of the regular programme of the primary school will be thoroughly discussed at the second International Congress to be held at Berne next year (1904), and anything

anything more than experimental introduction might well be postponed until this has taken place. The opinion of a congress of nations whose educational systems are so superior to our own, cannot fail to have weight in reaching a wise decision, for "l'obligation d'unification de l'enseignement général"[1] is undoubtedly appreciated in Europe.

The most extraordinary example of modelling seen by the Commissioners was that executed by a young boy attending an evening school in Turin. Accidentally locked in the school-room for the night, he utilised his time in modelling an elaborate ornate mantelpiece, half of which he had completed by the morning. The work was so excellent that he was asked to finish it, when he received a present of a hundred lire (£5) as an expression of the official appreciation of his work. The *drawing* of quite young boys was equally remarkable for excellence.

20. *Conclusions.*—The following conclusions are suggested by the foregoing:—

1. Drawing should be more thoroughly taught, both in schools and to the teachers of the State.
2. "Drawing from Nature," should be first practised and should be *freehand* at the commencement, so as to stimulate form-memory.
3. Colouring should be early introduced, so as to stimulate the colour-sense and colour-memory.
4. Geometrical and perspective drawing should also be taught, collaterally with purely artistic drawing.
5. The use of drawing instruments should be learnt in the primary school.
6. The drawing lessons should be intimately associated with other subjects, especially geometry, algebra, and manual work; and should also be connected with other science subjects.
7. The *copying* of drawings should be abandoned as of inferior educative value.
8. Modelling may be included in the drawing lessons and commenced in the kindergarten. The report of the 2nd International Congress on the teaching of drawing should be obtained and considered before the question of its general introduction is definitely settled.

CHAPTER XXII.

The Teaching of Modern and Ancient Languages.

[G. H. KNIBBS.]

1. *Language in general.*—In the inquiry made by the Commissioners on the teaching and learning of languages, it became evident that, intrinsically, there is really no very serious difficulty in learning to speak and use living languages correctly; and as the so-called dead languages may in a sense be made living by speaking them, what is stated in regard to language in general will apply to Latin, Greek, or other "dead languages" equally with modern.

2. *Reasons for the study of languages.*—Languages are studied chiefly for three reasons—(*a*) because of their *utility;* (*b*) because of the mental discipline they afford; and (*c*) because of their classical value—that is, their value in regard to literature, ancient history, mythology, etc. In regard to the first reason, both Latin and Greek have, it must be admitted, considerable utility to those who afterward take up scientific work in any form whatever, mainly because *scientific terminology* has been cast in the classic mould. It is remarkable that, even in the German language, the tendency to abandon the vernacular and resort to the Greek and Latin languages is no less marked than in English. Latin, in particular, has great value philologically, not only to students of the allied languages, as Italian, Spanish, French, etc., it facilitates the study even of the Teutonic languages. Much, however, of the benefit of this kind is really due to the fact that any language awakens, as it were, the philologic consciousness; that is to say, in learning any language, one becomes alive to and acquainted with the linguistic facts which form the basis of etymology and systematic *philology*.

In regard to (*b*), there can be no doubt also that the severe analysis of the structure of language, the determination of the thought really expressed therein, the recasting that thought in another language, afford exercise embodying a high type of mental discipline; and no one but those quite unacquainted with ancient languages will lightly reject them as an integral element in a curriculum intended to call into exercise the highest powers of the mind, even where their practical employment is not a matter of direct concern. On the other hand, the practical needs in almost all other directions put such pressure upon the available time, that mere mental gymnastic is outside the range of useful pædagogy. Studies that are practically essential offer abundant opportunity for the discipline of the mental faculties.

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[1] Ier Congrès International de l'enseignement du dessin. Rapport général, p. 337. (The obligation of the unification of general instruction.)

In reviewing the reasons for learning languages, one discriminates between the classic and modern. Respecting the former, it may be said that all higher secondary education has till recently been on a linguistic or, rather, on a classic basis; and this fact has led to the view that theologian, legist, physician, scientist, and even technologist, must alike make Latin and Greek the common element of culture. That position has now been everywhere abandoned. The partial substitution of modern languages is a feature in many countries, while in some the complete substitution is optional. It will be convenient, perhaps, to deal first with *modern* languages.

3. *The American Committee on foreign languages.*—In 1896, a committee of twelve professors of languages was appointed to make recommendations upon the subject of preparatory requirements on French and German. In December, 1898, *two years afterwards*, they presented their report. The teaching of language since then has thrown some light upon their work and opinions. It may be stated that their report was the outcome of the examination of several hundred expert opinions on the matter at issue. Their estimate as to the value of linguistic study is set forth so excellently that it seemed desirable to quote it at some length. In the following passages from their report their whole point of view, also, is set forth with some degree of fulness. Incidentally, it contains references to what may be called the relative merits of ancient and modern languages, and these are included in the quotation. The report itself will be found in the "Report of the Commissioner for Education," U.S.A., 1897–8, vol. 2, pp. 1391–1433.

4. *American opinion as to value of modern languages.*—"Aside from the general disciplinary value common to all linguistic and literary studies, the study of French and German in the secondary schools is profitable in three ways: First, as an introduction to the life and literature of France and Germany; secondly, *as a preparation for intellectual pursuits that require the ability to read French and German for information;* thirdly, as the foundation of an accomplishment that may become useful in business and travel (p. 1393).

"What we have called the general disciplinary value of linguistic and literary study is well understood the world over, and has long been recognised in the educational arrangements of every civilised nation. The study of a language other than the mother tongue requires the learner to compare and discriminate, thus training the analytic and reflective faculties. The effort to express himself in the unfamiliar idiom, *to translate* from it into his own, makes him attentive to the meaning of words, *gives a new insight into the possible resources of expression, and cultivates precision of thought and statement. Incidentally the memory is strengthened, and the power of steady application developed.* In time such study opens the gate to a new literature, thus liberalising the mind and giving an ampler outlook upon life. Through literature the student is made a partaker in the intellectual life of other times and other peoples. He becomes familiar with their manners and customs, their ideals and institutions, their mistakes and failures, and with the artistic forms in which the national genius has expressed itself. When he leaves school such knowledge not only enriches his personal life, but makes him a more useful, because a more intelligent, member of society. *It exerts a steadying, sanative influence, for it furnishes him with standards based upon the best performance of the race everywhere.* For us, with our large confidence in our own ways and destiny, there is special need of the wisdom that comes from familiarity with the life, literature, and history of the great makers of European civilisation (pp. 1393-4).

"What has been said up to this point relates to the profit of linguistic and literary study in general, a matter about which there is no serious difference of opinion among intelligent people. When, however, we come to consider the relative value of the ancient and the modern languages, we raise a moot question over which there has been endless discussion. . . . To reach a sane view of the matter it is necessary to make some allowance on both sides for the partisanship of the professional teacher, who is generally more or less prone to overstate the importance of his speciality. Nor should we allow too great weight to the views of publicists, men of letters, and so forth, who treat the question from a purely personal point of view. The man in middle life, who has the advantage of knowing just what knowledge is most useful to him in his own work, can usually look back upon his early education and tell a tale of neglected opportunities and misapplied energy. Educational arrangements must be made for the many, and human tastes, needs, and aptitudes are various. For the boy or girl who must select a course of study long before he or she can know just what special attainment will be the most useful in after life, it is enough to be assured that the discipline and culture derived from the study of a foreign language, whether ancient or modern, will certainly prove valuable (p. 1394).

"The committee is of the opinion that the best course of study for the secondary school will always provide instruction in at least one ancient and one modern language. . . . We ask for the modern languages in school and college nothing more than a fair chance to shew what they are worth. We believe that they are worth, when properly taught, no less than the ancient languages. It is, of course, conceded that the Latin and Greek are the more 'difficult' in the initial stages. But difficulty cannot be the highest test of educational utility, else Latin and Greek should themselves give way to Sanskrit and Chinese. . . . It is quite possible in an ordinary school course to learn to read French and German easily. . . . *In the case of the ancient languages, on the other hand, it is a well-understood and oft-lamented fact that the great majority, even of college-graduates, never learn to read Latin and Greek with ease. Up to the last the effort is more or less painful. After leaving college they usually drop their Latin and Greek, and in a short time they cannot read at all.* The profit of the study thus reduces, for the many, to its purely gymnastic value. That value, we are prepared to admit, is very great, but we would urge that the purely gymnastic value of the modern language is, potentially, also very great. The argument of 'difficulty' is often misused. There may be as much valuable exercise in walking 5 miles up a gentle slope as in climbing a mile up a sharp acclivity.

"*The first and greatest value of the study of the modern languages must be looked for, then, in the introduction of the learner to the life and literature of the two great peoples who, next to the English stock, have made the most important contributions to European civilization.* That these literatures are as important, as worthy of study, as full of instruction for the modern man and woman as are those earlier literatures that once formed the great staple of education, is a proposition that we do not think necessary to argue, though it is sometimes denied, *in toto*, by zealous advocates of classical study. For the peculiar intellectual myopia that can see nothing new and nothing good in modern literature the only remedy is the classical hellebore.

"We

"We attach greatest importance, then, to linguistic discipline and literary culture. But the ability to read French and German has also another value not directly connected with the study of *belles-lettres*. In nearly all branches of knowledge at the present time a large part of the best that has been written is to be found in the German and French languages. One who wishes to study anything thoroughly, no matter what, finds it highly convenient, if not absolutely necessary, to be able to read these languages in the pursuit of information.

"It is next in order to remark briefly upon what is popularly called the 'practical' value of French and German—that is, their utility as a means of intercourse. The practical command of a foreign language has a potential value that is at once perceived by everyone (p. 1395)."

5. *The methods of learning Language.*—Several ways of learning languages have been described as follows:—

(*a*) The grammatical or classic method.
(*b*) The reading or empiric method.
(*c*) The natural or conversational method.
(*d*) The psychological or mental visualising method.
(*e*) The phonetic or vocal analysis method.

The features of these must be discussed in detail, and it may be observed that individual schemes of language-teaching often combine several of the methods, for they are in no sense mutually exclusive. In a country like this, so far removed from Europe, good method and good teaching are even more important than in America and England, since the opportunity of sojourning in the several countries where the languages are spoken is practically absent. Even the slightest attempt to analyse the method of speaking our own language will reveal that England, America, and this State have very perceptible differences of accent. The attempt at acquiring a speaking knowledge of foreign languages is a powerful aid in keeping some control over the spontaneous tendency to variation of accent, when it happens to be in a vocal direction that is not agreeable.

6. *The grammatical or classical method.*—This method may be described as an attempt to learn a language through its grammar. Vocabulary, paradigms, rules, exception, examples of phrasing, and of composition on a larger scale, are brought into requisition, learnt as a rule—with great heaviness—"by heart." Disconnected sentences of almost negative interest, easy at first but progressing in difficulty, are supposed to lead to a knowledge of the language.

Everywhere, as far as the inquiry of the Commission revealed, this method fails to create a living and genuine interest, at any rate with the majority of those who are subject to it; in fact, all commencement with grammar seems to end in disgust. The method is credited by the American Committee with the following merits, viz., that it trains the mnemonic faculty; that it affords one of the best possible exercises in close reasoning, since grammatical analysis and synthesis, while less mechanical and more varied in operation than elementary mathematics, are nearly or quite equal to it as a means of inculcating the habit of accurate ratiocination. They urge that, in reacting against the hard unattractive influence of the schools of our ancestors, modern pædagogical fashion has gone so far that the power of conscious acquisition and retention is hardly exercised at all, and children go out into life with an embryonic memory; or, if they go to college, the teachers' task rivals the labour of the Danaïdes. They admit that the grammatical method neglects some of the most important objects of foreign language study; the broadening of the mind through contact with the life, ideas, and forms of thought and expression in different climes and countries; that pure grammar is not calculated to inspire interest; that the day of such a method is passed. They, however, indicate that the old-fashioned method had, after all, its good features. In practice the method has probably been always more or less associated with the reading method, to which reference will now be made.

7. *The reading method.*—The reading method may be described as the study of phrase and sentence from the very beginning, these being translated at sight into one's own language. It leads ultimately to ability to read the foreign language without any very conscious interposition of one's own. In so far as grammar and composition are used they are regarded as merely ancillary. Accidence and syntax are either learned inductively, or a text-book is used concurrently with translation. The advantage of this method is that it enables the student to read the languages studied with some degree of facility and ultimately of interest. Systematic attempt by the pupil to render what he reads into his own tongue developes his command of vocabulary therein; it brings into evidence philological relationships; it cultivates an appreciation of beauty of expression; it educates the linguistic sense; it gives some command of etymology; and it disciplines the judgment in the matter of accuracy and chasteness of expression. It is certainly less tedious than the grammatical method, but at the same time it can have strong interest only for pupils with linguistic aptitude. It is, perhaps, with the more lazy pupil, apt to demoralise, by not requiring rigour in translation.

8. *The natural or conversational method.*—In its absolutely pure form, this is supposed to reproduce the method of one's learning his mother tongue. It has been referred to by the American Commission in the following terms:—

"At the opposite pædagogical pole from the process just described we find the conversational or "natural" method. This educational "naturalism" is a reaction against the inflexible systematism of earlier teachers; we should, therefore, expect it to be somewhat aggressive and somewhat formless—more given to pulling down than to building up. It is a principle, an impulse, rather than a plan; and its products depend, to a greater extent than those of any other school, on the personality of the instructor. Too often the results of a protracted and supposedly successful course of unalloyed conversation are a rapid but unintelligible pronunciation, the fluent use of incorrect forms, and, worst of all, a most discouraging self complacency. Some peculiarly gifted teachers have succeeded in combining alertness with a reasonable degree of accuracy, but it will probably be found, in all such cases, that the instructor has resorted to devices not strictly "natural."

"What

"What is the genuine "natural method"? In its extreme form, it consists of a series of monologues by the teacher, interspersed with exchanges of question and answer between instructor and pupil, all in the foreign language; almost the only evidence of system is the arrangement, in a general way, of the easier discourses and dialogues at the beginning, and the more difficult at the end. A great deal of pantomime accompanies the talk. With the aid of this gesticulation, by attentive listening, and by dint of much repetition, the beginner comes to associate certain acts and objects with certain combinations of sound, and finally reaches the point of reproducing the foreign words or phrases. . . . . *The new-born child, after various unsuccessful experiments, reproduces sounds correctly, because it has no previous habits of speech to contend with. The boy or man, unless he is phonetically trained or exceptionally acute of hearing, does not imitate at all. He merely substitutes for the several strange vowels and consonants the English sounds which the foreign ones happen to suggest to him.* That is why the pronunciation of conversational classes is generally not a whit better[1] than that of scholars taught after the most antiquated fashion."

"In the attempt to inculcate the other elements of speech-inflections, syntax, and phraseology, the purely imitative process shews itself to be almost equally inadequate. We may justly urge, furthermore, against this style of teaching, that it provides little discipline for the intelligence; that it affords only the poorest kind of mnemonic training; that it favours vagueness of thought and imprecision of expression; and, finally, that it sacrifices the artistic interest of language study to a so-called 'practical' one. On the other hand, it certainly does awaken enthusiasm among its disciples, and it stimulates and holds the attention."

The comment above italicised, not in the original, touches the radical defect of the method. On the other hand it is admitted that the 'summer schools,' etc., on the Continent, for conversational practice, attain excellent results in the case at least of those who have prepared themselves or who supplement the practice by reading and grammatical study. The Commission, while admitting that the fame of the method had forced the issue with many schools and colleges, believe that the next generation will regard the "naturalism" of the method rather as a vivifying influence than as its essence.

It is obvious that though each one of these methods is subject to much adverse criticism, the whole three must constitute part of a complete scheme. It is equally obvious that the psychological and phonetic elements must be included. The former is somewhat complex, and really includes more than mental-visualisation.

9. *The idea, the common term in two languages.*—In one's own language, *thought*, the written *words* that express it, and their *sound*, are as between each and all, immediately associated, and the order of learning it is first by associating sound and idea, then by the written-form and idea. The difficulty of connection between thought and its verbal expression, is to find the words, phrases, and verbal scheme, which accurately translate it. This difficulty has been acutely felt by everyone who has aimed at precision and chasteness of speech, even in his mother-tongue. One learns from this that, even as regards mere accuracy, the critical faculty within us discerns, and does, as a matter of fact, more or less keenly appreciate, the difference between the merely approximate and the rigorous expression of thought. Now it is this appreciation of justness as regards thought-expression, which indicates perception not only of the meaning of a word, but also of what may be called its *ensemble*; a recognition of not only what it denotes, but also of what it connotes. Every word has, through its origin, through its sound, through the frequency of its use, through the ideas, and the analogies of the ideas, with which it is associated, and indeed through, as it were, the verbal company it keeps, a sort of special aura or atmosphere, a *nuance*, a tincture. It is owing to this fact that great familiarity with a language is necessary, before these subtler elements are felt with any degree of clearness. Knowledge of any given language implies this type of perception in relation to the verbal forms of that language. It is for this reason that, in order to properly translate from one language into another, *there must be a commanding knowledge of both.* This is, of course, a truism to linguists; and the grotesque results which arise upon attempting to translate an unfamiliar written language into one's own, and the still more grotesque when translating one's own into an unfamiliar one, are matters of the most common observation. *It is only when the translator has complete command of the two languages that he is able efficiently to translate*, and the process, as is well known, is as follows:—"The language read generates more or less accurately the thought which it was intended to convey, or of which it is the verbal crystallisation. This thought becomes in the translator's mind, and so far as the verbal expression only is concerned, in a state of flux, and then is recrystallised directly into the second language *in so far as the language will allow, or the translator's command of it will permit.* No one who has ever done any real translation[2] has any doubt about the substantial accuracy of the process as thus described. The mental element, *i.e.*, the thought, is the *constant* element, and its expression depends objectively upon the genius of the language, subjectively on the translator's knowledge of it. Very little consideration is requisite to create a doubt, as to the propriety, as a scheme of language learning, of the customary method of translating even simple expressions from one language into another that one does not know, or *vice versa*; and as a matter of fact the testimony everywhere is that languages learnt in that way are *not* really in the command of the learner, as a means of expressing thought. And the reason is, all thinking should express itself instantly and spontaneously in the language one desires to employ.

If one considers for a moment that any idea whatsoever is susceptible of being expressed in many ways in (say) two languages, and that, although one or more expressions in each may be equivalents, it is certain that the whole range will not be[3]; in fact, that a complete system of inter-relation and parallelism does not exist in language, then it is easy to see that in passing from thought to its verbal expression in a particular language, not only is an intermediary language an unnecessary intrusion, involving loss of time, but it is also an intrusion which introduces needless difficulties. Hence, to be accurately as well

as

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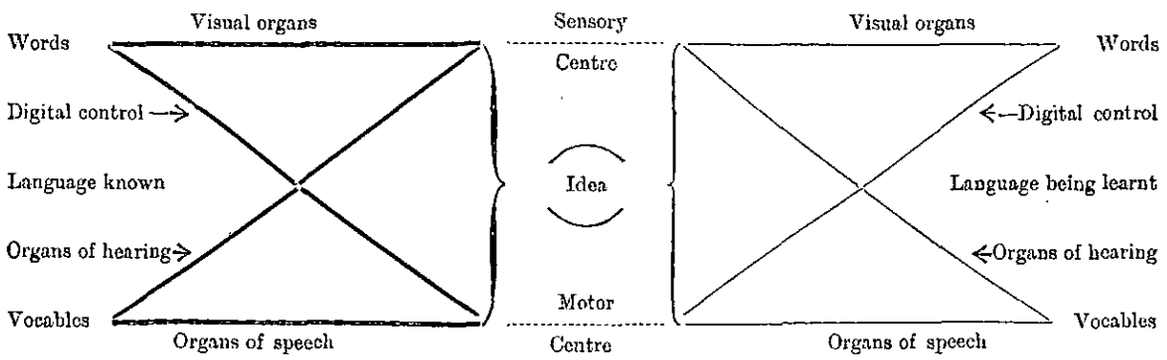
[1] "Not a whit better" is too strong a statement.

[2] So-called 'literal translation' may be wholly ignored in this argument.

[3] For example, suppose phrase a in one language is in every sense translated by b in another, and that a' a'' a''' are approximate equivalents in the former of a, and b' b'' b''' are approximate equivalents of b in the latter, it does not follow and it is generally untrue that a', a'', or a''' is equivalent to any or each of b', b'', b'''; in fact, in languages, things that are (approximately) equal to the same thing are not necessarily (approximately) equal to one another.

as readily expressed, thought should clothe itself at once in any desired language, viz., without intermediary of any kind. This may be explained by recognising that the idea is really the common term between the two languages. In the grammatical and reading methods of learning languages, particularly in the former, the idea, as such, hardly enters into the consideration at all. The whole scheme of attempting to understand the new language is essentially etymologic. This, psychologically, is obviously quite different from direct passage through the idea represented to the new language. In the one case the equivalence of words is uppermost in the mind; in the other, unity of ideas. All this mainly applies to the written forms of the language; the difference is still greater when one comes to language as spoken. There is generally no real connection between the word, the vocable, and the idea in any language, and in a foreign one these elements are often absolutely without the co-ordination that artificially exists in one's own. Further, to speak a language it is necessary also to co-ordinate the vocal organs, so that their reaction is unconsciously responsive to the idea. And to converse in it, the hearing organs must also unconsciously analyse the sounds heard into, not so much words, as ideas. One need only remember how difficult it is, even in the mother-tongue, to be quite sure what is said, when there is no cue and the voice is unfamiliar, to realise how great a part the ear plays in the conversational knowledge of a language. The following diagram, in which the heavy lines denote the nerve-paths



co-ordinated by practice in the known language, and the light ones those that have yet to be co-ordinated in relation to the new one, will shew at a glance the complexity of the associational development involved. The scheme of association and co-ordination among the nerve-paths will be evident on studying the diagram, as also the fundamental difference between learning from "vocables" and learning from "words."

In the diagram the word "vocable" is used to denote the sound of a word; and "word," its written form.

10. *The psychological method.*—In strictness, the term "psychological method" ought to include a much wider field than what is known thereunder. The best representative of the method is the Gouin. The conception, of course, existed long ago; but it was Gouin who crystallised it into a system, published in 1880, in Paris under the title "L'Art d'enseigner et d'étudier les langues." In the bringing of this method into general notice Bétis took a considerable share, his "psychological method" being illustrated in a volume—"Facts of Life"—published in New York, in 1896, by Bétis and Swan. The foundation of the method is the association of ideas and images, and the whole aim is to connect the words and their sounds with things and actions in a systematic way. The real vocabulary of a language, that is not merely its words, but its words in their idiomatic relationships are divided into groups of phrases, each intimately connected with a special subject—a group forming a lesson. The groups, all treating of a general topic, make a chapter and several chapters a series. These series were designed to give, on the completion of the whole, a real "mastery" of the language—*i.e.*, a complete idiomatic knowledge of it. It is, of course, evident that the mastery is of a very limited character. Each lesson is first taken orally, then reviewed with the book. On the reception of a new word, the pupil is to close his eyes and create for himself a distinct mental picture of the thing or action indicated. If this be done with real concentration, an indissoluble association is said to be established. Pictures, real objects, gesticulation, pantomime, anything that helps to create vivid impression, are freely employed. The system habituates the memory to good associational practice—it seems to attract; it retains the attention well; it gives command of an excellent vocabulary of a general kind.[1]

Its defect is that the phonetic elements are not sufficiently well attended to, the master doing a large part of the talking; and there is no sufficient corrective for mishearing and consequent mispronunciation on the part of the pupil.

11. *The Berlitz Method of learning languages.*—At the Paris Exhibition of 1900, there was a special pavilion at the Trocadero, where, for five or six hours daily, public lessons in English were given to a dozen pupils of the communal school of the rue Hamelin. The jury, judging from a practical point of view, commended the method very appreciatively, and a silver medal was awarded.

The first Berlitz school was founded in 1878, at Providence, in the United States of America, and its head quarters are now at New York. There are schools in most of the principal cities of Europe, and the method is evidently, on the whole, a successful one as far as teaching to speak is concerned, testimonies being favourable wherever inquiry was made by the Commissioners. The school at Paris was created in 1889, and now employs thirty-five professors of different nationalities, each teaching in his native tongue. It alone had in 1899 no less than 1,200 pupils. Actually, there are about 108 schools, in nearly every instance the director being a Frenchman. The Berlitz method may, perhaps, be best explained from its own

[1] In Die neueren Sprachen III, 1 to 6, R. Kron discusses the practical results. See also Die Methode Gouin, oder das Serien-system in Theorie und Praxis, Marburg, 1896; also by V. Knorr, *ibid* III, 8 and V, 9; and Traugott, *ibid* VI, 6.

own statement submitted to the International Jury, which is here freely translated :—"The best way of learning a foreign language is, everyone knows, to spend sufficient time in the country where it is spoken. In fact, in order to speak idiomatically, it is essential that the thought should be associated with the language itself and with the ear, in such a manner that when the sound strikes the ear, the image is *immediately* presented to the mind; or, inversely, when the image is presented to the mind, the verbal expression spontaneously and immediately presents itself.

"The great benefit which is found by living in a foreign country is that there the association between perception and the foreign expression defining it is *direct*.

"The study of a language in this way has, however, the great inconvenience of not being systematic. The student hears many words which awaken no ideas in his mind; and, moreover, the enunciation is often very rapid and negligent, and it is with difficulty that the beginner can distinguish one word from another."

"In order to reach the highest result, it is necessary, therefore, to find a method which unites all the advantages of living in a foreign land, and yet at the same time obviates its inconveniences."

"The Berlitz method endeavours to attain this end. The definition which the German encyclopædia has given appears to be a correct one: 'The Berlitz method is the systematic application of natural laws through which a foreign language is learnt when living in the foreign country.'"

The general principles of the method are as follows:—

1. The exclusive use of the language taught.
2. The direct association of thought with the foreign language, without the mother tongue as an intermediary.

The processes employed are:—

1. Teaching by perception. (Object-lessons.)
2. Teaching by the association of ideas.
3. Teaching by examples.

The first process is perfectly adapted to teaching the concrete, the second to teaching in the abstract, and the third is the best for the study of the grammar.

In order to get the pupil to speak, after having explained to him the words, expressions, or new grammatical forms, such questions are put to him as will require him to make use in his reply of the words, expressions, or grammatical forms which he has been taught.

The success of the method depends above all on the multiplicity of questions put by the professor in order to make the pupil practise thoroughly all he has learnt by ear in such a manner as shall familiarise him with the vocabulary, the idiomatic expressions, the construction of phrases, and the grammatical modifications of the language.

This truth was long ago perceived by Rollin when he said: "Short questions regularly put each day, in the form of conversation, by one who has the art of making the pupils say that which they wish to learn, instructing and amusing them, will, by an unconscious process, give them a thorough knowledge of the language."

The success of the system is attested by large numbers of people from their own experience. The results obtained have been also good for education in common. The Berlitz methods have, in fact, been tried with success in the commercial school of the Avenue Trudaine, Paris; they have been in use for the last five years in the Irish College at Paris; in the "Albert-the-Great" school at Arcueil; in the Polytechnic Institution of London; and in a large number of schools in Europe and in America. It is, it will be seen, a systematic conversational method, that has evidently extended its sway through its practical success.

12. *The Phonetic Method.*—In all the methods previously described, exact pronunciation is either absolutely neglected, or is inadequately regarded. This element of teaching, viz., the phonetic, came into prominence chiefly through Victor's celebrated monograph, "Der Sprachunterricht muss umkehren" (instruction in language must be reformed), published in Heilbronn in 1882. *Phonetics* as a science dates back to at least the middle of the 16th century, and has three well-developed branches, viz., the anatomical, physiological, and acoustical, and the literature of the subject is now enormous. Ellis in 1877 gave a pretty full account of the phonology of English, German, French, Italian, and Spanish, for the use of singers and speakers, and Henry Sweet, at Oxford, has done much to develope the subject, and, among other things, to determine the value and limitations of the *phonograph* as an aid to teaching; an instrument which, while valuable in phonetic analysis, has to be used with caution, for reasons obvious to physicists. The work initiated by such men as Ernst Bruecke[2], and Johann Czermak[3], has made much practically possible and easy, that otherwise was difficult, especially in the way of assisting the imitative faculty in the learning to speak a foreign language.

In the phonetic method, in its strictist form, the student is thoroughly drilled in producing the vowel and consonantal sounds of the language to be acquired. This involves, strange to say, considerable training of the *ear*, especially with people of our own nation; for it has been recognised by every teacher that pupils have great difficulty in perceiving the essential differences of foreign vowel sounds, *e.g.*, the difference between the "o" in the German word "Noth" or "Not" and in the English "note"; between the "é" in French and the "e" in the English "met,' or the "a" in "mate;" or, again, between the sound of "au" in "Haus" and the "ou" in "house." The initial essentials, therefore, are, teaching the pupil to *hear* accurately, and then to *produce* the sounds heard accurately. This, again, is difficult, as is seen by the very grotesque attempts made by English pupils to produce the "ü" of the German, the "u" and "û,' of the French, the gutturals of German, Dutch, Russian, etc.

The sounds learnt are regarded first as isolated elements, then as material for combinations into words and idiomatic phrases. These are practised a good deal, and have the merit of being intelligible to the foreigner whose language is being learnt. The phrases are wrought into dialogues, anecdotes, etc., and at this stage *phonetically printed texts* are brought into requisition,—that is to say, texts in which the language is accurately

[1] Rapports du Jury International. Groupe I. Education et enseignement 1° partie. Class I, pp. 569, 570.
[2] Grundzüge der Physiologie und Systematik der Sprachlaute, 1856.
[3] Physiologische Untersuchungen mit Garcia's Kehlkopfspiegel. Abh. Wiener Akad. 1868.

accurately represented *phonetically* by means of a more or less sufficient *phonetic notation*. All ordinary printing is avoided. The texts progress in difficulty until the final ones represent the language in its most advanced literary form. Inflection and syntax are learnt inductively, composition by oral reproduction first—*i.e.*, simple phrase-building, then by more developed phrase-building, by writing, etc. Next, systematic grammar is applied to the material acquired, *and, last of all, translation is learnt*. In order to make the teaching realistic, objects, maps, pictures, anything and everything are displayed to intensify association, and, moreover, to familiarise the pupil with the foreign people, their life and surroundings.

The criticism of this method by the American Committee is as follows:—

"This method, while it lacks the logical discipline of the old grammatical instruction, is more successful than any other in forming a good pronunciation, and in giving pupils a ready and *accurate control of the spoken language*. The training it affords can hardly fail, moreover, to improve the quality of the student's voice and his enunciation of his mother tongue. From the standpoint of mnemonic education, too, it ranks high. In stimulating interest it is nearly equal to the "natural" and "physchological" courses, and it is second only to the latter in holding the attention. The training of the attention should, by the way, be regarded as an important part of any pædagogical scheme; for the habit of inattention—the utter inability of pupils to fix their minds on anything for more than a few minutes at a time—is the most serious obstacle that confronts our secondary teachers. The attempt to give scholars, by ear and eye, by description, and by the use of objects and pictures, a correct and vivid idea of foreign life has been carried further by the phoneticians than by any other school; but there is no reason, save the lack of rightly prepared instructors, why this feature should not be introduced into every method; the neglect of it defeats one of the principal objects of modern-language study."

13. *Language by correspondence.*—With a view to learning languages more colloquially, a systematic scheme of international correspondence between school children of different countries has been established. The plan of this was first suggested by Professor P. Micille in the "*Revue universitaire*" of June, 1898, who gave an account of his efforts in regard thereto between English and French children who desired to learn each others' languages. His idea attracted attention throughout England, France, Germany, Italy, the United States, and some other countries, and is not unknown here. The correspondence is now by no means confined to the school pupils, adults taking considerable part in it, and particularly teachers. In many schools, examples of letters are published as an appendix to the yearly reports, as for example "Der englische Brief in der Untersekunda der Oberrealschule, ein Beitrag zum Briefschreiben in neusprachlichen Unterricht," Heidelberg, 1900–1. (The English letter in the lower second of the higher "real" school, a contribution on letter writing in the modern language instruction). One rarely sees a preposition wrongly used in such letters; in fact it is extraordinary how accurate most of them are. The scheme of correspondence is, of course, for the writer to write in the correspondent's language.

It may be here noted that His Britannic Majesty's representative at Paris (Right Hon. Sir Edmund Monson, G.C.B.), in transmitting to the Commissioners a notice on the "Ecole primaire supérieure d'Orléans," kindly supplied by its Director, stated that the Director would be very glad if a system of correspondence were established between his pupils and those of similar professional schools in Australia, and it was requested that the suggestion be transmitted to the proper department. No doubt a communication by any intelligent student of a language to the Director of any school in the country where it is spoken, asking for a correspondent, would bring about a response.[1]

14. *The teaching of languages by phonograph.*—Schools are being started to teach languages by means of the phonograph; and New York has one that supplies a machine, ten text-books, and twenty-five "records," for a very moderate sum, for the learning of any one of the three languages, Spanish, French or German. What the machine does may be described as follows:—On placing a record on the machine, putting the listening device to the ear, and raising the starting lever, a clear sonorous voice proceeds to ask and answer questions in colloquial French, German, or Spanish, as the case may be; such questions, that is, as a stranger in a country would be likely to ask and to be asked. It is claimed that the simultaneous sight in the text-books of the words as ordinarily spelt, with hearing them as they are pronounced in the phonograph, helps to fix them accurately in the memory; and, moreover, that the opportunity of having unlimited repetition enables one to reproduce imitatively with ease and precision (?) the language. The statement of the method's merits is, of course, somewhat exaggerated, but it appears to have some justification.

Professor Sweet, of Oxford, regards the phonograph as the next best thing to the living teacher, and the very finished and sonorous delivery of Latin hexameters, on his own phonographic records, gives one an excellent idea of the possibilities of the instrument.

15. *The difficulties in foreign languages for English pupils.*—As linguists, English speaking peoples have not a high reputation; and comparing achievement in European languages by English boys with the achievement of continental boys in English, one is astonished at the great difference in favour of the latter. This can hardly be attributed either to a vocal, or to an intellectual disability; but rather to the simplicity of our consonantal sounds, which afford therefore very indifferent practice in linguistic gymnastic; and also to the peculiar character of our vowel-sounds, which develope a linguistic habit the reverse of helpful in learning other languages. Insular feeling may also play some part in the general results. In such languages as the Slavonic, *i.e.*, Russian, Polish, Czech, etc., or even in some of the Teutonic, as German, Dutch, etc., there is far more linguistic gymnastic than there is in our own tongue, consequently the vocal organs have acquired the requisite flexibility, in learning the mother-tongue, with them; but not with us. That the vowels have also something to do with the difficulty is suggested at once when one compares for example German or French pronunciation of, say, the word "note," with our own; or compares the singing of the diphthong "i" (pronounced as in the name of the letter) by a trained vocalist with the degenerate "i.....e" of the untrained, which, however, after all, merely illustrates

[1] For French and English a large committee exists, which undertakes gratuitously the work of bringing would-be correspondents into touch with each other. The vice-president of the English section for women was Miss E. Williams, professeur aux Ecoles de Sèvres et de Fontenay. The vice-president for men is Professor A. Mouchet, 16 rue de St. Guillaume, Asnières, près Paris. . . . .

illustrates the *glide* that is characteristic of our language. There is no doubt that, while an English child learns just as easily as any other to speak any tongue spoken by its companions, once English speech has been developed, there is much to *unlearn*, and much to practice. And even if it be *not* everywhere necessary to learn phonetically, it certainly *is* necessary for us to do so. This brings us to the issue, how are we in this State, and with our limitations, to acquire thorough knowledge of any desired language? The answer certainly is, "by adopting a method which combines the best features of all the methods outlined."

16. *Teaching of modern languages in other countries.*—The teaching of languages in Germany was reported upon by Miss M. Brebner in Volume III of the "Special Reports." This lady spent six months as a travelling scholar of the Gilchrist Trust in 1897, her visit including Berlin, Halle, Marburg, Frankfort a/M, Leipzig, Jena, Eisenach, Darmstadt, Giessen, Heidelberg, Karlsruhe, Freiburg, Hamburg, and Bremen. Miss Brebner sums up the general aspect of the teaching as follows:—

1. Purely oral teaching at the beginning.
2. The use of the foreign tongue as much as possible from the first and throughout.
3. The absolute or partial exclusion of translation from the native into the foreign tongue, except in the higher classes.
4. The reduction to a minimum of translation from the foreign tongue into the mother-tongue.
5. The extensive use of pictures in the younger classes, and generally as a concrete way of putting things as possible.
6. The extensive teaching of *Realien*, *i.e.*, the life, custom and institutions, geography, history and literature of the foreign nation.
7. Constant conversations on the reading-book, either in the form of preparation, or, more frequently, by way of revisal.
8. The use of the reading-book as material for learning grammar inductively.

The Commissioners' inquiries shew no very important difference. There are, as might be expected, considerable variations of opinion between individual teachers as to the value of early attempts at translation, and with respect to systematic phonetics. The trend of opinion, as far as could be judged by the Commissioners, is strongly *against translation* as an initial exercise; and on the other hand is *strongly in favour* of a teacher of languages being, if not a master *of phonetics*, at least sufficiently acquainted with the subject to help the pupils whenever he found them unable to imitatively reproduce sounds. The production of the various sounds of the "*th*," for example, has been found to be difficult to most continental people, when attempted imitatively; but these sounds were readily enough produced after the pupils had been instructed how to use their vocal organs. Similarly the "*u*" is difficult imitatively to English pupils, but can easily be produced after instruction as to the proper mode of attempt.

The language-teaching in Holland was the most striking seen by the Commissioners. Mr. K. ten Bruggencate, the Chief Inspector of the secondary schools, himself an able linguist, and author of a number of works on phonetics and language,[2] very kindly accompanied the Commissioners, among other places to Amsterdam, where it was suggested that, *inter alia*, the teaching of English might be witnessed at a Higher Burgher School,[3] by Mr. Eijkman. This gentleman has developed the teaching on the Gouin system, and has published a 'Manual for the study of the English language, developed according to the Gouin system.'[4] The class was only in the beginning of its work, yet the whole lesson was in English, the children answering all questions with *excellent English accent*, with a solitary exception (the pronounciation of "double" as in French). The eagerness of the pupils in reply to all questions, and the accuracy of their replies, the vivacity and vividness of the teaching, the suggestiveness of all illustration or movement, the skill of the phonetic assistance, clearly shewed what is possible in the way of language-teaching, and how easy languages are acquired with proper teaching. Dutch is a language of very different sound from English, yet the English of the boys was accurate, in fact, the pronunciation was finished, and not, as is too often the case with us, slovenly. It may here be interpolated that in teaching the mother-tongue, the same precision is exemplified. This was seen in the "Van Merlenstraat schoolhuis 69." The distinctness of enunciation in teaching the little children was perfect; one could not imagine greater finish of utterance to be possible. As one listened, one realised how much more finely trained the ear is with such teaching, *and since language is largely imitative*, it was easy to see, not only that precision of utterance was the inevitable outcome, but also that the *impulse to speak* was itself strengthened. This was also the case with the foreign language, with such teaching as Mr. Eijkman's. The distinct utterance, the vividness and simplicity of expression, the ease with which, given the well-trained ear, the phonetic suggestions could be appropriated, made speaking pleasurable from the sense of achievment, and there is no doubt that the outcome of such teaching is the *impulse to use the language*. This is exactly where it is *radically different* from the old grammatical method, and even the old reading method, and even the method of initial phonetic drill.

That the method does not depend upon the mere vivacity or temperament of the teacher was illustrated during a visit to a Higher Burgherschool in Rotterdam,[5] a few days afterwards, where the able teaching of Mr. J. G. van Santen was witnessed. Here the lesson was mainly in English, but questions as to parts of verbs were asked in the vernacular. The progress was equally extraordinary; the same phonetic ability was evident; the same impulse to use the new language; the same excellent accent and pronounciation; although the teacher was quite different in manner.

In Mr. K. ten Bruggencate's "De uitspraak van het engelsch" (the pronounciation of English), he discusses the English vowels, consonants, alphabet, and phonetics. Under this last heading he treats of the production of sound, from the stand-point of anatomy and physiology; of difference in sound; of our vowel and cononant systems; developing his theme by means of a fairly complete phonetic notation. These phonetics are not taught to children, but utilised to assist teachers. When sounds can be imitatively

[1] Of the Education Department of the English Government written in part and edited by Mr. Michael E. Sadler, Director of Special Inquiries and Reports. See pp. 481-497.

[2] De uitspraak van het engelsch met eene korte inleiding in de klankleer. Wolters, Groningen, 1900. Leerboek voor het engelsch, ten denste van het voortgezet onderwijs. Het noodigste uit de duitsche grammatica, etc.

[3] Tweede Hoogere Burgerschool met vijfjarigen cursus voorjongens. Roelof-Hartstraat. Amsterdam.

[4] Handleiding voor de beoefening der engelsche taal, bewerkt volgens de leerwijze van Gouin.

[5] Mr. J. Menalda van Schouweuburg, Director.

imitatively produced, the phonetics are not called into requisition; but when children fail to produce sounds imitatively, through the overpowering of habit, or in virtue of failing to instinctively discern what is requisite, the phonetic knowledge is available to help them. The teaching of language elsewhere calls for no special comment, and does not illustrate any features not already noticed.

17. *A modern exposition of language-teaching.*—Professor Emil Hausknecht affirms that the three essays on language-teaching which have had a more far-reaching effect than any others are—

1. "*Quousque tandem's*"[1] "Der Sprachunterricht muss umkehren." Heilbronn, 1882.
2. Graf Pfeil's "Wie lernt man eine Sprache am leichtesten und besten." Breslau, 1883.
3. Felix Franke's "Die praktische Spracherlernung auf Grund der Psychologie und Physiologie der Sprache." Heilbronn, 1884.

These titles, viz., (1) "Language instruction must change," (2) "How a language is most easily and best learnt," (3) "The practical acquisition of language on the basis of the psychology and physiology of speech," are suggestive. The theoretical principles have been set out by Dr. Waetzoldt in his "Die Aufgabe des neusprachlichen Unterrichts und die Vorbildung der Lehrer," Berlin, 1892 (The problem of instruction in modern languages and the preparation of teachers); but Dr. Hausknecht's testimony is valuable through certain practical ideas of his having been satisfactorily tested, not only in Germany, but also in Japan. The initial conditions assumed are:—

i. Fluency and correct pronunciation on the part of the teacher, especially on the part of the teacher of the elementary classes.

ii. A preponderance of oral instruction—with the books shut—in all stages of language-teaching, especially in the elementary stages.

iii. In teaching pronunciation in the elementary stages, the start must be made from sounds, not from letters. The teacher must, without teaching phonetics, possess an adequate knowledge of the science.

iv. Continuous pieces for reading, not single sentences, form in the elementary stages the basis on which the vocabulary and grammar are gradually built up.

v. The grammar is to be learnt in the elementary stages inductively. By means of an abundance of isolated instances the pupil is led first to an unconscious appreciation of what is correct, and then to a conscious recognition of the grammatical law.

vi. The materials for teaching the language are so chosen and arranged that they serve in an elementary way as an introduction to the social conditions, the organisation, the geography, the history, and the range of thought of the foreign people; yet the importance thus assigned to practical studies must not be carried so far that the emotional and the imaginative sides of the pupil's mind are in consequence neglected.

He claims, for the practical and certain results of the method, that—

(1) It renders the pupil capable of understanding at once the foreign idiom when spoken by the teacher, so long as he uses a vocabulary known to the pupil, and that without the pupil performing in his mind the process of translation into his mother-tongue; it renders him capable of answering at once in the foreign language questions put to him in it, and formed of words known to him.

(2) It leads him to a rapid and certain mastery of a comparatively large vocabulary.

(3) It gives him the capacity of understanding a passage easily and quickly on its first reading.

(4) It developes in him "linguistic-feeling" ("Sprachgefühl"), and gives him a sufficient knowledge of grammar.

(5) It renders him capable of expressing freely in the foreign language, even in writing, his thoughts on any topics that appeal to him.

Dr. Hausknecht recommends the following division of a four years' course:—

(1) Introductory and elementary stage	1½ years
(2) Junior course	1½ „
(3) Senior course	1 year.

In (1) he drills phonetically, that is, by ceaseless practice; he teaches the pupil to grasp sounds accurately, and to reproduce them clearly. The teaching of phonetics to the pupils would be superfluous, but is evidently required for the master.

For French, the *liaison* and the continuous passage are at once introduced, so that voice modulation and stress in sentences shall be illustrated and appreciated; but the use of phonetic texts is declared unnecessary. This step would last some four weeks, when the elementary stage would commence. This stage aims at—

(*a*) Direct understanding of the word spoken, *i.e.*, without conversion, actual or mental into the mother-tongue.

(*b*) Practice in the accidence.

(*c*) The acquisition of a large stock of words and phrases, and, unconsciously, of the most important phænomena of syntax.

(*d*) Exercise in hearing and production of whole sentences by new combinations of old material.

(*e*) Exercises in answering questions in the foreign language.

(*f*) Dictation of passages, constituting a variation of those in the reading book, or of the questions in (*e*).

Then follow exercises for training both the ear and tongue. A passage in the foreign language—short at first, but gradually increasing in length as the pupils progress—is learnt by heart, so that they may be able to translate readily into the foreign tongue, the equivalent in the vernacular being given. The instructor then delivers the piece extempore, wholly recast, but containing no new words, the pupils thereupon repeating each sentence. When six or eight have done so fluently and correctly, another writes the sentence on the black-board, any mistakes being corrected by the class. Ear and eye are thus made simultaneously active. This process, slow at first, soon becomes rapid, and fewer pupils need be asked to repeat the sentences.

The following is an illustration of it from the "Französisches Unterrichtswerk" of Plattner-Beaumier:—

Exercise.—"Un éléphant passait chaque jour devant la boutique d'un tailleur pour aller boire à la fontaine. Le tailleur lui donnait toujours quelque friandise et à la longue l'éléphant avait contracté l'habitude

[1] The pseudonym of W. Victor.

l'habitude de présenter sa trompe à la fenêtre pour avoir son cadeau. Un jour le tailleur était absent. L'éléphant passa et présenta sa trompe comme d'habitude. L'apprenti le piqua avec une aiguille. L'animal s'éloigna pour aller boire, mais à la fontaine il rempli sa trompe d'eau. A son retour il passa encore la trompe par la fenêtre et mouilla son offenseur comme un canard."

This is reproduced in two forms, one very simple, the other more developed. The former is as follows:—

"Un éléphant allait boire à la fontaine. Il y allait chaque jour. Il passait devant la boutique d'un tailleur. Le tailleur avait l'habitude de lui donner quelque friandise. Cet éléphant les aimait aussi. Il présenta toujours sa trompe pour avoir son cadeau. Un jour l'apprenti était seul dans la boutique. L'éléphant passa et présenta sa trompe comme toujours. L'apprenti le piqua avec une aiguille. L'éléphant alla à la fontaine et remplit sa trompe d'eau. A son retour il mouilla l'apprenti. C'était sa vengeance."

The more developed reproduction is the following:—

"L'éléphant est un animal très doux et très intelligent. Dans une ville un de ces animaux passait toujours devant l'atelier d'un tailleur pour aller à la fontaine. Le tailleur, qui aimait les animaux, lui donnait chaque jour quelque friandise, une pomme, une poire, ou un morceau de sucre. L'éléphant s'arrêtait toujours devant la boutique pour avoir son petit cadeau. Il passait sa trompe par la fenêtre pour le prendre. Mais un jour l'apprenti était seul dans la boutique lorsque l'éléphant passa. L'apprenti n'aimait pas les animaux et leur jouait souvent un mauvais tour. Lorsque l'éléphant présenta sa trompe, il le piqua avec une aiguille. L'éléphant alla boire, et la fontaine remplit sa trompe d'eau. Lorsque, à son retour, il passa devant l'apprenti, il lui lança l'eau à la figure."

Then follow, as far as deemed needful, a series of questions and answers based upon the same story; and next a concrete conjugation in the direct, interrogative, negative, and interrogative-negative and reciprocal forms, changing also the order of the persons. By concrete conjugation is meant such as the following:—

J'ai dans mon sac tout ce qu'il me faut . . . . il a dans son sac tout ce qu'il lui faut, etc.

And by reciprocal concrete conjugation:—

Question: Où est-ce que j'entends le chant des oiseaux?

Answer: Tu entends le chant des oiseaux dans les champs.

The junior course is commenced when the pupils have acquired some degree of "Sprachgefühl," or intuitive sense of the language; and some idea, by habit and unconscious assimilation, of the accidence and syntax. The middle stage is primarily that of reflective study of the language, involving attention to its grammar; and secondarily, more developed conversation-practice, starting from the reading passages and extending from them and breaking away.

The senior course consists of extensive reading of authors, free written compositions, enlargement of the vocabulary.

In the French classes quasi-officially connected with one of the Public Schools of the State, Fort-street, the system of teaching[1] closely follows that above outlined. It corrects imitative inaptitude by suggestions based on phonology, and in this way does much to secure accurate pronunciation. The grammar is learnt from the language and not the language from the grammar.[2]

Fluency is attained by rapid utterance of a French text, of which the pupils know the meaning (*see* section 21 hereinafter). Rapid sketches are drawn on a blackboard by the instructor; these serve as a basis for conversation in French, both question and reply being cast therein. Singing in French is introduced from the outset, and has proved to be of great importance in regard to pronunciation and memorising. At a later stage, history is taught in French, from an abridgment used in Parisian schools, having at the foot of each page a set of questions to be answered by the pupils. Dictation of selected pieces, commercial correspondence, and even book-keeping are included, to render practical the command of the language. Home-practice is facilitated by a "Phonetic Companion," specially developed, continuous practice being rightly regarded as essential in the attainment of fluency.

The method is psychologically on good lines and has been carefully thought out, a fact testified by the rapidity of progress made thereunder.

18. *The theory of language-teaching.*—From what has proceeded it is seen that the elements of good language-teaching are:

(*a*) To confer the power of accurate pronunciation.
(*b*) To awaken the impulse to speak and the linguistic-sense ("Sprachgefühl").
(*c*) To cause thought to be expressed without the intermediation of the mother-tongue.
(*d*) And therefore to cause it to commence with idiomatic and colloquial forms of speech.
(*e*) To develope the grammatical consciousness first through habit.
(*f*) To extend the literary appreciation of the language and the vocabulary by reading.
(*g*) To intensify the grammatical consciousness and to lead to a definitive knowledge of the grammar peculiar to the language by operating on the material already at the command of the student.
(*h*) All through to keep the power of vocal expression alive and in full exercise.

This is the way in which a language is *really* learnt; that is, learnt in such a way that thought clothes itself immediately in the sounds, in the words, of the language. Language so learnt is used by spontaneous impulse; construction, and grammar, are an after-thought aiding only in perfecting what is on the whole practically correct from habit.

Incidentally it may be said that the pedantic idea that language is to be modelled according to the grammar, which seems to arise spontaneously through the classic method, receives its quietus; and the truer idea that grammar expresses the discovered relations existing among the several kinds of words in the language, takes its place as a living idea in the pupil's mind.

In order that such a scheme of language-learning should be successfully established it is necessary—

(1) That the teacher should reproduce the sounds of the language accurately and with great distinctness, so as to make it difficult for the pupil to mis-hear; and so that imitative impulse shall be as strong as possible.

(2) That the pupil's hearing be thoroughly aroused to discern what may at first appear to be negligible differences of sound (*e.g.*, the difference between "o" in the French and in the English word "rose," and in the Swedish "o" in "skola," and the Dutch "oo" in "school," etc.); and that the pupil realise that the discrimination involves highly concentrated attention.

(3)

[1] By Monsieur Ed. Périer. See his "Illustrated method for easily learning and teaching French"; "An essay on Speaking French"; and "Phonetic Companion."

[2] Bréal's aphorism:—"Il faut apprendre le grammaire par la langue et non la langue par la grammaire."

(3) That the sound heard, *i.e.*, the vocable, be *directly* associated with the object or action indicated, so that the first association shall be between *sound* and *idea*.

(4) That the association of sound and object be, as far as possible, always visualised, all necessary external aids being utilised; this in order to intensify the association and to serve as a mnemonic aid.

(5) That the imitative impulse to reproduce the sound be strongly encouraged both by the teacher and by the pupil himself. If the class arrangement limit in any way the facility for repetition, the pupil should *at once* repeat the sound, *sotto voce* at least.

(6) That, as far as possible, the opportunity for instant reproduction of the sound be given by the teacher, so that by rehearing, and by the associated muscular effort (of the vocal organs, of course), it may be fixed firmly in the memory.

(7) That the pupil's consciousness be fully awakened to the significance of a vivid association between the sound heard, while fresh in the memory, and to the corresponding feeling when using the speech-organs in its reproduction. The effect of this is to make the necessary association between the sound and the vocal effort to produce it, so as to strengthen the impulse to vocally *use* the acquired knowledge.

(8) That all imitative difficulty or failure be corrected by phonetic indications from the teacher, shewing how to use the vocal organs, *i.e.*, how to dispose them so as to produce the sound required. (This may be done in a variety of ways, for example, to produce the "th," it is necessary to tell the pupil to put the tongue-tip between the teeth, and force the air out; on uttering any syllable, then it will be found that the "theta" sound has been produced. But sometimes other schemes of suggestion may be utilised. Thus to produce the German diminutive suffix "chen," if one breathe out as if for the aspirate "h," and then sound "yen," a sufficiently close approximation, to suggest to the pupil how the sound is to be made, is reached; afterwards, in all probability, the proper sound will soon be satisfactorily produced. Or, say the German "ü" or the French "u" is required. If the vocal organs be disposed so as to produce "oo," and being kept in position, the long "e" in English is sounded, an approximation will be reached which may serve as a new starting point in the attempt to produce the proper sound. This will sufficiently illustrate the point.)

So far, this is an education in regard to language of the organs of hearing and speech, and a direction of stimulus, exciting the motor centres to discharge so as to accustom the vocal organs with regard to words and sounds of the language, whether arranged in phrase or sentence or not.

If this development be taken as regular phonetic drill, however, it will be tedious; therefore it should be taken conversationally, so as to avoid the tedium; and, let it be remembered, that very exact enunciation on the part of the teacher makes *pure imitative impulse* do most of the work, and the phonetic elucidation will be reduced to a minimum with a corresponding saving of time.

Remembering that languages *can* be learnt colloquially, it is evident that grammar is not an essential in learning to use a language; and, as a matter of fact, very many people never learn grammar at all, but speak and write both accurately and well.

Grammar, however, after the speech-sense (Sprachgefühl) has been *developed, and after conversational facility has been attained*, does most undoubtedly facilitate progress, as well as add analytic form to the synthetic already acquired. That is to say, grammar broadens and deepens the appreciation of the languages, helping also to rapidly develope its precision. So also translation, after the synthetic knowledge is acquired, is helpful. But in this matter it ought to be remembered that *verbal* translation is injurious in the first stage. Translation originates a false idea if used early, viz., the idea that a word-and-phrase parallelism exists, which is only a half-truth. This is what spoils the classic scheme of translation.[1] Grammar too early learnt not only makes progress slow, but keeps the grammar element in consciousness when it ought to be subconscious. Hence we see that language-learning becomes thereby distasteful and slow. But, worst of all, *it is psychologically utterly and wholly bad. It inhibits all spontaneity* just as surely as it would if one were to compel a little child to revert to the thought of grammar in speaking.

Remembering that language arises from an *impulse* to make intelligible sound-communication, it is evident that everything that promotes the impulse is valuable. Rather let grammatical error be regarded as of slight moment, so that effort to speak be induced; the same applies even to the phonetics. It can be overdone, and one must trust to continued practice to improve the utterance, the accent, the speech-flow and modulation.

The whole may be summed up as follows:—

Languages can be most readily and fully learnt only by the conversational method, systematically developed, aided by phonetics and associative suggestions, mental visualisation, etc. The knowledge of the written forms, of the languages and of their analytical features (grammar, etc.) ought to come after they have been learnt colloquially. Thus the true method comprehends the five methods (*a*) to (*e*) of Section 5 of this chapter.

The Gouin, Bétis, Berlitz methods are all variations of the conversational development. How these are to be regarded in detail is a matter for more extended study. Johann Storm, of Kristiania, shapes his French conversational exercises, so as to impart the grammar and phrase-form, on conversations from real life. Carré makes his conversation depend upon direct view of the object, while Gouin proceeds on the basis of the mental image. Hartmann[2] and Lange[3] shew what use can be made of *pictures*. Whatever be the plan, it must be systematic, in order to achieve as much as possible in the very limited time available. So long as it conforms to the principles indicated, all will go well.

19. *Teaching a Language without a Foreign Teacher.*—The phonograph clearly is the next best thing to the living teacher, as a means of instruction; and when one attempts to learn a language there must inevitably be some scheme of pronunciation adopted. If this be a false one, there is much to *unlearn*, and the misfortune is that unlearning is always difficult and sometimes impossible. When modern languages, as is here so often the case, are acquired absolutely without regard to exact pronunciation, there is a more or less indelible false impression. All the associations are on unpractical and

[1] It is almost needless to point out that it is by no means contended that there is absolutely no such parallelism.

[2] Die Anschauung in neusprachlichen Unterrichte. Wien. 1895.

[3] Beobachtungen und Erfahrungen auf dem Gebiet der Anschauungsmethode. Wien. 1897.

and false lines. There is no impulse to speak; the speaking, such as it is, is unintelligible to the foreigner whose language is "used." Now the phonograph can at least be employed to instruct teachers, and even the children also; so that teachers throughout the country may learn the modern languages properly, with perhaps some aid by way of phonetic suggestions to facilitate their own difficulties as to reproducing the sounds heard in the *phonograph*. The following of these suggestions throughout all the schools of the State will create a new era in the language-teaching, and give us a real command of modern languages, with all the consequential benefits of wider culture, wider sympathies, and wider contact with other peoples.

20. *The International Phonetic Association.*[1]—The International Phonetic Association was established in 1886 by a small group of French professors, who had found that a system of phonetic writing was of great service in teaching English. The reputation of the method rapidly spread, and in 1888, a consequence of a general consultation on the question, an international phonetic alphabet was elaborated. This has since been very slightly modified, and is used in the journal published by the Society, viz., the *Maître Phonétique*, and now has a vogue among a large number of linguists and teachers of languages.

It is worthy of note that this Association has always combatted the classic method of teaching languages, and has not a little "contributed to the discredit into which that absurd method is falling more and more."

In the year 1900 there were 953 members in this Association, Mr. Sweet being Honorary President, and Professor W. Vietor, of Marburg, President. Its work is, apart from the question of language teaching, of great general interest. The conception of language learning, which may be said to express the trend of the Association's opinion, apart from that of individual members, is pretty much as follows:—

The initial study of a foreign language should not be that of the more or less archaic language of the literature, but of the language as it is daily spoken. The instructor's first care should be to perfectly familiarise the pupil with the *sounds*, avoiding, initially, the use of the ordinary alphabet. Phrases and idiomatic expressions, followed by easy and interesting stories, etc.; grammar inductively developed; the direct association of expressions in the foreign language, without the intermediary of the mother tongue; and, later, written exercises, relation of the stories aloud, free renderings and translations, etc.—indicate the order of the development.

The work of this Society is so important that it has been thought desirable to reproduce the list of the works they recommend for the study of Phonetics and Linguistic Pædagogy.

GENERAL PHONETICS.

W. Victor	Phonetische Studien. Marburg, 1888–93.
,,	Elemente der Phonetik. Edit. 4. Leipzig, 1898.
,,	Kleine Phonetik. Leipzig, 1898.
A. M. Bell	Sounds and their relations. London, 1882.
Burt	Elementary Phonetics. Toronto, 1898.
H. Sweet	Handbook of Phonetics. Oxford, 1886.
,,	Primer of Phonetics. Oxford, 1890.
J. Storm	Englische Philologie. Edit. 2. Leipzig, 1893.
M. Trautmann	Die Sprachlaute. Leipzig, 1886.
O. Jesperson	Articulations of Speech-sounds. Marburg, 1889.
,,	Fonetik. Kjoebenhavn, 1900.
P. Roorda	De Klankleer. Groningen, 1889.
L. Soames	Introduction to Phonetics. Edit. 2. London, 1899.
E. Sievers	Grundzüge der Phonetik. Edit. 5. Leipzig, 1900.
Vietor-Rippmann	Elements of Phonetics. London, 1899.
H. Klinghardt	Artikulations-und Hörübungen. Köthen, 1897.
P. Passy	Ecriture phonétique. Edit. 3. Paris, 1899.

HISTORICAL PHONETICS.

H. Sweet	History of English Sounds. Edit. 2. Oxford, 1888.
P. Passy	Etude sur les changements phonétiques. Paris, 1891.

EXPERIMENTAL PHONETICS.

P. Rousselot	Modifications phonétiques. Paris, 1889.
C. H. Grandgent	Vowel measurements.

MONOGRAPHS.

W. Vietor	Aussprache des Schriftdeutschen. Edit. 4. Leipzig, 1898.
,,	German Pronunciation. Edit. 4. Leipzig, 1898.
H. Sweet	Spoken Swedish, Portuguese, North Welsh; Danish pronunciation, Russian pronunciation. London.
A. Western	Englische Lautlehre. Leipzig, 1885.
,,	Kurze Darstellung d. engl. Aussprache. Edit. 3. Leipzig, 1897.
R. J. Lloyd	Northern English. Leipzig, 1899.
Ph. Wagner	Sprachlaute des Englischen. Edit. 3. Stuttgart, 1899.
P. Passy	Sons du Français. Edit. Paris, 1899.
,,	Abrégé du prononciation Française. Leipzig, 1897.
F. Beyer	Lautsystem des Neufranzösischen. Köthen, 1887.
,,	Französischen Phonetik. Edit. 2. Köthen, 1897.
J. Balassa	A Phonetica. Buda-pest, 1886.
K. Quiehl	Französische Aussprache. Edit. 3. Marburg, 1893.
K. Nyrop	Kortfattet Fransk Lydlære. Kjœbenhavn, 1893.
A. R. G. Vianna	Pronuncia normal Portugueza. Lisbon, 1892.
F. Araujo	Fonetika Kastellana. Toledo, 1894.
Lyttkens og Wulff	Svenska Sprakets ljudlæra. Lund, 1885.
P. Passy	Notes sur quelques patois. Paris, 1892-6.

PÆDAGOGY.

W. Vietor	Die neueren Sprachen (Review). Marburg, 1893.
,,	Der Sprachunterricht muss umkehren. Edit. 2. 1886.
H. Sweet	Practical study of Language. Edit. 2, London, 1899.
M. Bréal	Enseignement des langues vivantes. Paris, 1893.
F. Franke	Die praktische Spracherlernung. Heilbronn, 1884.
M. Walter	Französische Klassenunterricht. Marburg, 1888.
,,	Englisch nach der Reformplan. Frankfurt, 1899.
G. A. Schrumpf	How to begin French. Hertford, 1883.

K.

[1] The address of the "Association Phonétique Internationale," is 20 Rue de la Madelaine, Bourg-La-Reine, Seine, France.

K. Kühn	Entwurf eines Lehrplans. Marburg, 1899.
L. Graf von Pfeil	Lehren und Irrlehren beim Unterricht. Berlin, 1895.
W. H. Widgery	Teaching of Languages in schools. London, 1888.
Laudenbach-Passy-Delobel	Méthode directe. Paris, 1899.
Lenz-Diez	Enseñanza inductiva del Francés. Santiago, 1894.
A. Rambeau	Phonetik im Klassenunterricht. Hamburg, 1888.
P. Passy	Phonétisme au Congrès de Stockholm. Paris, 1887.
Jespersen-Lundell-Western	Quousque Tandem (Series of Publications).
R. Lenz	Fonetica aplicada. Santiago, 1893.
J. Grasé	Directe Methode en phonetisch schrift. Groningen, 1899.

TEXT BOOKS.

Beyer-Passy	Elementarbuch des gespr. Französisch. Köthen, 1893.
Rossman-Schmidt	Lehrbuch der franz. Sprache. Edit. Leipzig, 1895.
Franke	Phrases de tous les jours. Edit. 5. Leipzig, 1893.
K. Kühn	Französisches Lesebuch. Edit. 3. Leipzig, 1890.
,,	Französische Schulgrammatik. Leipzig, 1885.
,,	Kleine Französische Schulgrammatik. Leipzig, 1890.
O. Jespersen	Fransk Begynderbog. Edit. 2. Kjœbenhavn, 1897.
Jespersen-Wallenskœld	Fransk Elementarbok. Helsingfors, 1893.
Passy-Tostrup	Leçons de choses. Paris, 1895 et 1898.
J. Storm	Dialogues Français (avec traduction en diverses langues : Norvégien, Danois, Suédois, Allemand, Hollandais, Anglais, Finnois). 1880-1892.
Sœderhjelm-Tœttermann	Fransk Språklæra. Helsingfors, 1892.
C. H. Grandgent	Short French Grammar. Boston, 1894.
Alge-Rippmann	First French Book. London, 1898.
Mackay-Curtis	First French Book. London, 1900.
V. Spiers	First French Book. London, 1900.
J. Adamovic	Francuska Pocetnica. Agram, 1893.
Lenz-Diez	Enseñanza practica del Frances. Edit. 2. Santiago, 1895.
H. Sweet	Elementarbuch des gespr. Englisch. Edit. 2. Oxford, 1896.
P. Passy	Eléments d'Anglais parlé. Edit. 3. Paris, 1900.
A. Beljame	English Readers. Edit. 8. Paris, 1895.
Victor-Dörr	Englisches Lesebuch. Edit. 2. Leipzig, 1891.
O. Jespersen	Engelsk Grammatik. Edit. 3. Kjœbenhavn, 1899.
,,	Engelsk Begyndergrammatik. Kjœbenhavn, 1899.
Jespersen-True	Spoken Englisch. Edit. 4. Leipzig, 1897.
Jespersen-Sarauw	Engelsk Begynderbog. Kjœbenhavn, 1896.
Jespersen-Sarauw-Meijboom	Engelsch voor eerstbeginnenden. Groningen, 1900.
Nader-Würzner	Elementarbuch der Engl. Sprache. Wien.
,,	Englisches Lesebuch. Wien, 1886.
K. Brekke	Lærebog i Engelsk. Kristiania, 1887.
J. Grasé	Oefeningen in de Engelsche taal. Groningen, 1899.
J. Afzelius	Engelsk Elementarbok. Goeteborg, 1888.
A. Western	Engelsk Grammatik. Kristiania, 1888.
Lenz-Brosseau	Primer libro de lectura Inglesa. Santiago, 1895.
C. H. Grandgent	Italian Grammar. Edit. 3. Boston, 1891.
,,	Italian Composition. Boston, 1891.
Alge-Hamburger-Rippmann	Leitfaden fur Unt. im Deutschen. St Gall, 1899.
J. Ehquist	Tysk Elementarbok. Helsingfors, 1894.
J. V. Lindgren	Dansk ock Norsk Grammatik. Stockholm, 1894.
J. Poestion	Lehrbuch der Norwegischen Sprache. Leipzig, 1890.
Th. Goldschmidt	Méthode intuitive des langues. Copenhague et Paris, 1895-9.

PHONETIC READERS.

V. Ballu	Méthode de lecture. Paris, 1894.
P. Passy	Prémier livre (met. p. apprendre à lire). Edit. 3. Paris, 1896.
,,	Le Français parlé. Edit. 5. Leipzig, 1897.
,,	Versions populaires du Nouveau Testament. Paris, 1893-6.
,,	Lectures variées. Paris, 1897.
,,	Histoires pour enfants. Paris, 1896-9.
J. Passy et A. Rambeau	Chrestomathie Phonétique. Edit. 2. Paris, 1901.
Pitman	Phonetic Readers. Bath, 1884.
,,	New Testament. Bath.
L. Soames	Albany Phonetic Readers. London, 1892.
Nader-Würzner	Englische Lautschrifttexte. Wien, 1891.
Victor-Dörr-Edwards	Englisches Lesebuch. Leipzig, 1901.
Jeafferson-Bönsel	English Dialogues. Hamburg, 1891.
W. Victor	Lesebuch in Lautschrift. Leipzig, 1899.
Pierce-Hempl	Wilhelm Tell. New York, 1900.
A. G. Vianna	Extraits des Lusiades. Paris, 1892.
Djelali-Passy	Contes et chants Arméniens. Paris, 1899.
J. Spieser	Hebräische Lautschrifttexte. Paris, 1898.

DICTIONARY.

Michaelis-Passy	Dictionnaire Phonetique Français. Hannover, 1897.

PHONETIC PUBLISHERS.

J. Lievens	52, rue Delarue, St. Maur-les-Fossés, France.
E. Roche	52bis, rue Jacques-Dulud, Neuilly-s-Seine, France.
D. Soltau	Norden, Germany.
Breitkopf and Härtel	Leipzig, Germany.
B. G. Teubner	Leipzig, Germany.
Hesse and Becker	Leipzig, Germany.
R. Friedrich	Marburg, Germany.
S. Geibel & Co.	Altenburg, Germany.
Turnbull and Spears	Edinburgh, Scotland.
C. L. Brinkmann	Amsterdam, Holland.
Zollikofer'sche Hofbuchdruckerei	St. Gall, Switzerland.
Greiner and Pfeiffer	Stuttgart, Württemberg.
Languages Printing Company	New York, United States.

It is perhaps hardly necessary to mention that the above phonetic publishers use the complete founts of phonetic type, by means of which it is possible to so render almost any language as to make it, when spoken by anyone, intelligible to a native once the sounds have been properly learned. A study of systematic phonetics, with, perhaps, the assistance of the phonograph, renders this attainment possible for almost any person. Not only can the ordinary form of the language be represented, but practically any variation or dialect; and it may be mentioned that southern and northern English present considerable difference of appearance typographically when thus rendered into print phonetically.

Incidentally it may be mentioned that, by means of the phonetic type and the phonograph, language variation may in future be thoroughly studied.

21. *Ancient Languages.*—Perthes, referring to the teaching of Latin in higher schools, in his discussion, "Zur Reform des Lateinischen Unterrichts auf Gymnasien und Realschulen, 1885" (Upon the Reform of Latin instruction in the Gymnasiums and Real Schools), says:—

"Let no one deceive himself; knowledge of, and even certainty in regard to the applications of, grammatical rules is not true linguistic training. An essential requirement is the acquisition of linguistic feeling, or the intuitive language sense. The formation of this is directly hindered by such sentences as contain unknown words. Neither will translation from the mother tongue materially assist in its formation, though, for acquiring sound knowledge of grammar, this last is of considerable value." In the "Mastery Series" for Latin of Prendergast, the second edition of which was published as early as 1874, the author says, "It is essential to provide for the *bonâ fide* acquisition, as contradistinguished from the *study* of Latin, *because the systems now in vogue ignore and exclude the practice of oral composition, etc.* It was claimed for the system that:—

(1) It treats the sentence—not the word—as the unit of speech, and the memory as the faculty principally and most prominently to be called into action.
(2) It enjoins frequency, instead of continuity of action, in the acquisition of new lessons, and limits them to ten minutes at a time, in order that the memory may always work at its highest power.
(3) It provides typical sentences accompanied by analytical variations, which, with their English versions, illustrate and explain the latent constructions and inflections therein.
(4) It enables beginners to master the principles of the constructions in the concrete, instead of tracing them through the mazes of the abstractions of technical grammar.
(5) It employs the English versions of the mastered sentences to evoke the latter from the memory in ever-varying order of succession, and then to diversify them by altering them so as to correspond with alterations made in their English versions.
(6) It restricts beginners from confusing the memory by learning any words besides those in the prescribed lessons.
(7) It defines the term "mastery" with precision, in order to save beginners from being misled by a delusive thoroughness, and to secure that not one lesson shall be forgotten.
(8) It exhibits sentences arranged in couplets and triplets, each of which yields a series of exercises in composition so adjusted that even beginners cannot fail to work them out faultlessly unaided.
(9) It enables beginners to attain the art of constructing sentences idiomatically, thus qualifying themselves to translate also with facility.
(10) It delineates an easy and most successful mode of acquiring the true utterance of the sounds and tones of any language.
(11) It contains the essence of what may be called the lingual science, because it enables beginners to teach themselves to speak idiomatically and fluently without going abroad.
(12) Mastery is the realisation of thoroughness, not merely in reproducing idiomatic sentences at sight of their English versions with perfect fluency, accuracy, and readiness, but also in diversifying them with equal facility.

Prendergast is incisive on the fact that "technical grammar is not essential for beginners, but that, on the contrary, its study is *bewildering and obstructive.* The why of this has already appeared. There is no reason why Latin and Greek, or any other language, should not be learnt in the same way as modern languages, that is, by actual, suitably graduated practice, so that the grammar is based on pre-existing material, as it always is with the mother tongue. And there is every reason to believe that when it is so learnt, the almost universal abandonment of these languages after passing away from college or university will no longer be characteristic. There is something fundamentally wrong in any method which has this consequence, and it is that the "*Sprachgefühl*" *is not developed by the classical method of procedure.* That method evidently creates an inherent dislike for the languages, a dislike that is inveterate in all but a few instances; the evidence of which is that, as soon as the end is achieved for which perforce they had to be taken, they are discarded.

A definite scheme of pronunciation is a desideratum for which a consensus of opinion is required. There ought on this matter to be concerted action as between the schools of the Department of Public Instruction, the secondary schools, and the University of the State.

The feeling that, as far as teaching is concerned, the classical languages have not been fairly treated in the majority of schools is very wide-spread indeed. That the great amount of time formerly assigned to their study cannot in future be afforded is obvious, and they are likely to receive too often short shrift unless improvement in teaching is brought about. This question has been recently discussed by Professor J. P. Postgate, of Cambridge, in an article, entitled "Are the Classics to go."[1] Remarking that among languages, Hebrew, Greek, and Latin have had the greatest influence on the modern world, he joins issue with the confident assertion occasionally heard that the work of Greek and Latin is practically done. Believing, as he does, that these latter languages confer priceless benefits upon all higher human education, and that "The study of Latin should be kept as an integral part of *all* higher education, and that of Greek as an integral part of the higher *literary* training," he has considered the whole question of how best to maintain the study of them. Quoting Professor Hofmann,[2] as affirming that, according to the unanimous judgment of experienced teachers in mathematics and the natural sciences, the graduates of the Realschule, however much they may have at first excelled, are almost without exception overtaken in the later semesters by the students of the classical Gymnasium, he thinks the great *educative* value of the classic languages has by that and similar facts been abundantly proved. The unsatisfactory nature of their teaching he believes to be to a large extent responsible for the present attitude in regard to them. Formerly they were studied as *living* languages and literature; now they are too often studied as if they were *dead.* And speaking of recent improvements in teaching them, he says, "We have changed all that now, and *if the dead languages and literature are not to retire into the background*, they must be taught as if they were alive.[3] The late Professor Blackie used the conversational method, and his book of dialogues is not yet, I suppose, forgotten."

"Let it once be fairly tried, and I will engage to say that it will never be given up. For those who are taught under it will run away from their less fortunate compeers. Let it be tried in the teaching of Latin first, and the teaching of Greek will not be long in following suit."

The reformed pronunciation of Latin has been improved by two bodies, the "Modern Language Association" and the "Assistant Masters' Association." It

[1] *Fortnightly Review*, Nov., 1902, p. 866–880. [2] Professor of Chemistry, University of Berlin.
[3] Professor Postgate quotes "Sprechen Sie Attisch?" (E. Joannides, 1889). "Sprechen Sie Lateinisch?" (G. Capellanus, 1890), as valuable in learning Greek and Latin.

If teaching-method can be so improved that the expenditure of time in learning languages is greatly lessened, then the temptation to discard both Latin and Greek on account of the pressure of other necessary subjects in a curriculum, is correspondingly reduced. That this pressure really exists is sufficiently attested by the facts of the Reform movement in Germany.[1]

22. *Conclusions.*—The conclusions as to the proper methods of teaching language have been sufficiently set forth in the preceding sections, and do not need restatement. Put briefly, they are that the prevailing systems in this State are psychologically erroneous. and neither give a command of the languages ancient or modern, nor do they lead to a love of them. The modern languages are, of course, read by a few for their utility. The question of the inclusion of languages in various curricula is elsewhere considered.

One word may be added—there is quite as serious a recognition of the poor way that we have of teaching languages by well-informed men in England as is implied in this chapter. Haldane wrote, during the time the Commissioners were travelling, as follows[2]:—

"Nothing is more depressing to anybody fond of a foreign language than hearing it taught in a school in this country, and, to my mind, it is worse taught in the secondary schools than in the elementary. Take the teaching of French, for instance. If you go into a continental school you will find everything taught according to a carefully thought-out plan. The children are not taught grammar and a whole string of dry things. You will see the little things seated in front of the teacher, and in some regions the teacher is not allowed to teach, for example, French, unless he is of the same nationality as the children; for up to a certain stage the best teacher is found by experience to be the man of the same nation. The teacher speaks to them simply in French, and they try to reply. They do not try to learn swimming before going into the water. From the very beginning they are taught in this way; every word means an action, and they learn in an interesting way that savours of reality. If you go to Holland or to Germany you will, on the average, find people twice or three times as good linguists as they are here. *I should like to see the intelligence which one there finds applied to teaching introduced here also*, and I do not see why this should not be the case. I am certain the teachers would respond if the State gave them some stimulus to do so."

Language teaching can undoubtedly be made interesting and efficient; the evidence of that was seen in country after country. The quickening power that language gives, the command of scientific and technical information, the wider outlook on men and things, the broader sympathies, the sense of touch with the larger world, the cosmopolitan consciousness, if one may so speak, are all consequences of this efficiency; and it will be a bad omen for our future if our educational system does not aim at making us the peers of the people of other nations in this respect. To take even an ordinary place in exploiting the accumulated wealth of science and technology, languages are indispensable. From the point of view of the larger consciousness that we are here so especially in need of, they have a value that can be fully appreciated only by those who are capable of a macroscopic vision. If our people can be equipped for that larger view, and their objective be widened accordingly, it will be well for them, and the significance of language teaching will assume its proper place.

In every school where foreign languages are taught there should be either an instructor who speaks the foreign language perfectly as to accent, grammar, and idiom, as well as with the finished enunciation of a professional teacher of languages; or else, this being impracticable in many parts of this State, the school should be provided with a complete set of phonographic records for each language taught. In this way the ridiculous result of the present system, *viz.*, that students take honours at examinations of proficiency in languages, when very often they cannot express themselves colloquially at all, or are absolutely unintelligible to people whose language they are supposed to be speaking.

That an acquaintance with foreign languages is essential in all the higher callings of life, so as to keep in touch with the general progress of humanity in all departments, is so obvious as to need no advocacy. The intelligent control and development of industrial and commercial undertakings absolutely involve far greater attention to this matter than has been given to it by England and ourselves in the past. As pointed out, it is fully recognised by public men in England that we are nationally paying very dearly for our insularity. All public men who are sufficiently well-informed to realise the features of modern progress, and all professional and technical students, realise the absolute necessity of an acquaintance with at least the French and German, and perhaps also the Italian languages. The ease with which these can be acquired when well taught justifies the belief that there will be no difficulty in making the learning of languages in the future far more popular than it has been in the past. There is no department of knowledge in which the splendid achievements of Europe are not worthy of systematic attention; so fully is this recognised by all scientific students, that direct recourse to foreign journals is a feature of all modern study in any subject.

The psychological effect of a wider and more direct acquaintance with the industrial, commercial, technological, and scientific movement of the entire world is a mental state of greater alertness in regard to the possibility of our own development, and of keener appreciation of our own similar opportunity. When these facts are borne in mind, it is easy to realise that the part played by a knowledge of languages is more far-reaching than is commonly supposed, or than would appear at first sight. If the people of Australia are to acquit themselves well, the matter of languages cannot be neglected; and just in proportion as we have a wide and direct acquaintance with the movement of highly developed nations, so shall we be successful in the keen competition that assuredly promises to characterise the 20th century. A knowledge of languages is therefore of national moment.

[1] Die Reform des höheren Schulwesens in Preussen. Halle, 1902.
[2] Education and Empire. Richard Burdon Haldane, M.P., LL.D., K.C.

CHAPTER XXIII.

CHAPTER XXIII.

(PART 1.)

The Teaching of Geometry in Primary Schools, and its Reform.

[G. H. KNIBBS.]

1. *Introduction.*—Although the collections of geometrical propositions known as "Euclid's Elements of Geometry" will perhaps always be regarded as a noble monument of the genius of the Ancients, the belief that they constitute the best or even a good means of teaching geometry, is one that has practically long disappeared in the greater part of Europe, and is rapidly disappearing elsewhere. The Euclidean geometry is both tedious and restricted. One of the most successful attempts at superseding it in Europe was Legendre's "Eléments de Géometrie," which first appeared in 1794, the 11th edition being translated into English by Sir David Brewster in 1823. The latter editions contain trigonometry also.

Apart from the fact that Euclidean geometry is very limited in range, its method cannot be regarded either as logically perfect or practical, and experience has shewn that the Euclidean Elements often lead to strong dislike of the subject. Many propositions, most tediously proved, are obvious when hypothetical constructions are allowed, or when bisectors of angles are admitted, and when the notions of congruency and symmetry are introduced.

Geometry as taught in Europe is more *practical* in character, its range is wider, and the introduction of geometrical ideas often commences in the Kindergarten.

In order to give some conception of the way in which the subject is treated the nature of the teaching in several European countries is indicated more or less briefly.

In many of these countries, however, the teaching of geometry in the lower schools (Volksschulen, écoles élémentaires, etc.) is but slight, and is often confined really to intuitional instruction, and to such practical geometry as they get in the lessons in drawing. In such cases the conception of the proper mode of teaching geometry must be drawn from the higher programmes of instruction, from the method of educating their teachers in the subject, etc. This will at any rate shew the theory of its proper treatment, and will explain why translation from the lower school programmes are not given.

2. *Austrian programme for Geometry.*—The study of geometry commences in Austria with intuitional instruction concerning fundamental ideas, the straight line, circle, angles, parallels, and the simplest properties of triangles, linear and angular symmetry, the congruence of triangles and applications of these ideas.

The circle, quadrilateral and polygon are next considered, and then the following :—

Area.—The transformation of figures. Measurement of length and area. Pythagoras theorem. Homology. Reciprocal positions of lines and planes. Solid angles. Regular solids. Surface and volume computation. Scientific treatment of planimetry. Stereometry. Plane trigonometry. Trigonometrical problems. Analytical plane geometry. Conic sections.*

Although this programme is taken from those of the higher schools, the work commences in the Untergymnasium, and in any case it shews the way in which mathematical study is developed. The point to be noticed is that there is absolutely no study of the books of Euclid, as a method of learning geometry.

3. *Belgian teaching of Geometry.*—According to the official programme (Modelreglement en modelprogramme der lagere gemeentescholen ; règlement et programme types des écoles primaries communales), geometry, as a special subject, does not appear in the elementary schools of Belgium. It really enters into the teaching of geography and drawing however, and is taught by intuitional methods. The more developed teaching commences in the middle schools. Pupils enter these at the age of twelve. The official programme in geometry (meetkunde, géométrie) in them is as follows :—

1*st. Year.*—1. Definitions and preliminary notions. 2. Various cases of equality of triangles. 3. Theory of perpendiculars, and of oblique and parallel lines. Sum of the angles of any triangle, and of any polygon whatsoever. 4. Principal properties of quadrilaterals. 5. Problems by way of application.

2*nd. Year.*—1. Complete recapitulation of the preceding course. 2. Principal properties of the circle and of the figures resulting from its combination with the straight line. 3. Measurement of angles. 4. Problems involving perpendiculars, and parallels ; the construction of triangles and of circles, according to any given conditions. 5. Calculation of the rectangle, parallelogram, triangle, and trapezium. 6. Square on the sum and on the difference of two right lines, upon the hypotenuse of a right-angled triangle. Applications. 7. Numerical application of the calculation of the elements of a triangle.

3*rd*

* Die Einrichtung und Verwaltung des höheren Schulwesens in den Kulturländern von Europa und in Nordamerika. Dr. A. Baumeister. München. 1897, pp. 286-7.

3rd. Year.—Recapitulation of the preceding course. 2. Proportional lines. 3. Similar figures. 4. Numerical calculation of the elements of triangles. 5. Problems concerning proportional lines, figures of equal area, and similar figures. 6. Regular polygons, measurement of the circumference, and of the area of the circle, and its sector by practical methods. 7. Problems by way of application. 8. *Surveying:* Description and use of instruments. Surveying rods. Surveying chains. Cross-staff. Plane table. Measure of the area of plots of ground. Making plans by means of the chain, the cross-staff, the plane table and compass. The drawing of plans. Exercises in the field. 9. *Levelling:* Description and use of a water-level, of an ordinary level, of Lenoir level, use of sights. Operations in field. 10. Measurement and surface of polyhedra, and of the sphere, cylinder, and cone. (Teaching to be exclusively practical.) Numerical examples.

The following *observations* are made in the official programme by way of indicating more definitely the aim and method of the course.

(1) The theoretical part of the course comprehends essentially those propositions of plane geometry which have frequent application in practical life, and those which serve as their basis. Purely theoretical questions have been thrown on one side. It is not, however, sufficient to proceed, as in a primary school, by the merely intuitive and experimental method. The propositions ought to be rigorously demonstrated and firmly connected with one another.

By way of application, pupils should be required to demonstrate theorems, to resolve problems, and to find geometrical loci. While not interdicting questions which sharpen the spirit of inquiry, and give birth to a taste of purely theoretical studies, the teacher ought to select his examples as much as possible from ordinary life—*i.e.*, from the arts and crafts, the measurement of surfaces, volumes, industrial operations, surveying, etc.,—and numerical problems, and graphical constructions with the ruler and compass ought to constitute the most numerous of the applications. It is by the intimate association of theory and practice that the master will be able to make the results as fruitful as possible, and the geometrical course both a powerful means of intellectual education and an efficient preparation for a large number of professions.

(2) The teacher should be careful not to exclusively employ the *expositive* form of teaching. By logically conducted questioning, he should compel his pupils to themselves take part in the teaching. The practical knowledge of geometrical forms acquired in the primary course helps the pupils to readily understand the bearing of the master's questions; and, if they have acquired the habit of reflection, they will often find the proper demonstration to apply, to deduce from any new theorem studied, the corollaries to which it naturally leads, and to shew its relation to propositions previously demonstrated.[1]

It is hardly necessary to add that the books of Euclid do not constitute the text-book of geometry.

4. *Elementary Geometry in France.*—France led the way in the abandonment of the Euclidean notion of learning geometry. The scheme of instruction is so totally different from the method of reading Euclid's elements that the following synopsis of a programme is given in full, translated from the "Organisation Pédagogique des écoles primaires de Lille":—

ELEMENTARY COURSE.

Observations.—The pupils are from the first exercised in acquiring from a solid body the notions of volume, surface, line, and point. The work done in the successive months is as follows:—

October.—Point, line, various sorts of lines; straight, bent, perpendicular, and parallel lines.

November.—Manner of drawing perpendiculars and parallels. Set square, and mode of using; horizontal, vertical, oblique lines.

December.—Angle. Various kinds of angles. Measure of angles by means of protractor. Recapitulation of the work done in the quarter.

January.—Square, its definition. Remarks concerning its sides and angles. Rectangle, its definition.

February.—Triangle. Various kinds of triangles. Base. Height. Trapezium, its definition.

March.—Value of the three angles of a triangle. Shew this value by cutting a small piece of rectangular paper into two along the diagonal and applying them the one to the other. Recapitulation of the quarter's work.

April.—Circumference, circle, centre, diameter, radius, arc, chord, bend (versed line). Drawing of a circumference on paper and on the ground.

May.—Elementary notions concerning the cube (lateral and bounding surfaces, etc.), by means of a model, in relief.

June.—Notions regarding the prism and cylinder (model in relief). Recapitulation of the quarter's work.

July.—Notions concerning the pyramid, the cone, and sphere (models in relief).

August.—General recapitulation. Throughout the year there are to be frequent exercises in measuring and in visual comparison of magnitudes, etc. Approximate estimations of distances and valuations in metric measure.

MIDDLE COURSE.

October.—Line: Different kinds of lines, drawing and defining them. *Angle:* Different kinds of angles. Drawing and defining them. The measurement of angles. Constructing an angle equal to a given angle, or equal to the sum or the difference of two angles.

November.—Circumference: Definition, radius, diameter, chord, arc, tangent, secant, length of the circumference. *Polygons:* Definition. Perimeter. Diagonal. Regular and irregular polygons.

December.—Square: Definition, diagonal, surface, construction. Applications. *Rectangle:* Same as for square.

January.—Triangle: Definition, the four kinds of triangles. Simplest cases of the construction of triangles. Area of triangles. Recapitulation of the quarter's work.

February.—Parallelogram, rhombus, trapezium: their definitions, surfaces, constructions, applications.

March.—Circle and regular polygons: Their drawing; areas of their area. Recapitulation of areas.

April.—Combination of regular polygons suitable for paving, etc. Equilateral rectangles, squares, rectangles, hexagons, octagons. Area of a sector, of a segment, and of any polygon whatsoever. Problems of application.

May.—Volumes: The cube, its surface and volume, the same for parallelepiped and prisms. Problems involving application.

June.—The *cylinder, pyramid,* and *cone*: their surfaces, total surfaces, and volumes.

July.—Sphere Surface and volume. General recapitulation.

HIGHER COURSE.

October.—Angles: Adjacent angles, right angles, vertical angles. *Perpendiculars:* Erected from a point within or without a line. *Applications:* Distance of a point from a straight line. A line such that all the points are of equal distance; construction of a bridge equi-distant from two villages. Perpendicular to a line from a point within or without. (Exercises in drawing.)

November.—Triangles. Case of equality of triangles. Right-angled and isosceles triangles. *Application.* Construction of triangles.

December

[1] Organiek reglement voor de middelbare Scholen van den Stat Namur 1901, pp. 72–75.

December.—*Parallel* lines cut by a secant. Equal or supplementary angles. Sum of the three angles of a triangle. *Parallelogram* : Its properties. *Applications* : Measurement of an inaccessible point by means of a right-angled isosceles triangle. Recapitulation of the quarter's work.

January.—Circumference, circle, radius, diameter, chord, arc. Measure of angle at the centre and of the inscribed angle. *Application.* Determining the centre of a circumference or of an arc. Measure of an angle by means of protractor or of the graphometer.

February.—*Chords.* Equal chords and their properties. Tangents. Parallel secants. Perpendiculars from the centre on a chord. *Applications.* 1° : Drawing of tangents. 2° : Drawing of secants of definite length.

March.—Areas of the square, rectangle, parallelogram, rhombus, triangle, trapezium. Recapitulation of the quarter's work. *Application.* Ascertaining the area of a class-room, of a window, of a yard, etc.

April.—Area of regular polygons. Circle, sector, segment, irregular polygons. Square on the hypotenuse of a right-angled triangle. *Application.* Surveying, levelling.

May.—*Plane:* Idea of plane. Line perpendicular or oblique to a plane. Line parallel to a plane. Intersection of two planes. Angles formed by two planes which cut one another.

June.—Parallelepiped, and right prisms, opposite equal faces, cylinder. Parallelepiped and oblique prisms. *Applications.* Volumes of these bodies. Recapitulation of the quarter's work.

July.—Pyramid, cone, sphere, frustum of pyramid, and of cone. Volumes of these bodies. Problems of application.

August.—General recapitulation.

In regard to the above programme, it may be mentioned that the teaching in drawing takes account of much the same kind of work. We may take at haphazard an illustration—say November—of the higher course in Drawing :—

November.—Division of a circumference. Construction of the protractor. Triangles, construction with different data. Particular case of a right-angled triangle. Drawing of similar triangles, interior or exterior, with sides parallel or perpendicular. Various designs of pavements, engine-turned, frets ; flooring, oblique or straight.
Geometrical solids, groups.

The education of French teachers in the subject of geometry will be referred to in Chap. XXXV, sect 9. In the first and second years, the first two books of Legendre are studied, and the proportionality of lines, similarity of figures, the ratio of circumference to diameter, and the areas of figures ; also in solid geometry, the straight line formed by the intersection of planes, dihedral angles, the polyhedra, measurement of volumes, the cylinder, cone and sphere are considered.

In the third year practical trigonometry is taken in connection with the solution of triangles. Surveying is treated theoretically and practically in the field, the plane table and compass being used.

Thus it may be said that geometry is treated largely from the practical point of view, and with regard to the utility of geometrical knowledge.

5. *French Treatises on Elementary Geometry.*—Some notion of the character of French text-books on geometry is necessary to the understanding of the French programme for the teaching of the subject. This may be had from a glance at one of the earlier text-books—say, for example, S. F. Lacroix's " Eléments de Géométrie." This work commences with general conceptions of space, pointing out that any physical *body* in space necessarily has three dimensions, viz., *length*, *breadth*, and *thickness*. The bounding limits of three dimensional bodies are *surfaces*, which have but two dimensions, viz., *length* and *breadth* ; while the limits of surfaces, viz., whether they meet or intersect each other are *lines*, having but one dimension, viz., *length*. Again, the limits of lines, or their places of section, are *points*, which have no dimension. A straight line[1] is determined in three-dimensional space by two points, and can be prolonged unequivocally—that is to say, its prolongation can occupy one and only one position in space. A plane surface is defined as that in which a straight line will lie in every direction.

The development of the subject then proceeds as follows :—The properties of straight and circular lines, of perpendicular and oblique lines, of parallel lines, of proportional lines and similar triangles, of polygons, of the straight line and the circle, of inscribed and circumscribed polygons, of the area of polygons and of the circle. The consideration of the above constitutes the first section of the work, and includes 190 problems, theorems, and corollaries.

A second part treats of the following subjects :—Planes, and bodies terminated by plane surfaces. Planes and straight lines. Bodies terminated by planes, polyhedra. The measurement of volumes. Round bodies, included under which are the cone, the right cylinder, and the sphere. The comparison of round bodies. Under these various headings are included 123 more problems, theorems, and corollaries.

The complement to this course deals with plane and curved surfaces, commencing with the consideration of planes and of the sphere. The plane and the straight line. Under this heading are also a considerable number of propositions.

The second section of the complement treats of the generation of surfaces, viz., of conic and cylindrical surfaces, of curves of double curvature, surfaces of revolution, the intersections of curved surfaces. In continuation of the subject of the generation of curved surfaces, special forms are examined. The development of surfaces, planes tangent to various surfaces, and a *résume* of the theory of perspective, close Lacroix's treatment of the subject.

The most characteristic difference between this type of geometry and that developed in the books of Euclid is the relatively great generality of the former, and the simplicity of the proofs. Any acquaintance with the two systems will reveal the fact that the reading of the books of Euclid is a failure to acquire any wide acquaintance with geometry, for the subject has now enormously developed. This question will, however, be later more fully discussed.

6. *German Conception of Geometrical Teaching.*—The German view as to what constitutes the proper method of teaching geometry may be gathered from the following schemes of developing what are called "planimetry," "trigonometry," "goniometry," and "stereometry," etc. The propædeutics is intuitive instruction in geometry. The development is then as follows :—

Exercises in the employment of the compass and ruler (*i.e.*, "practical geometry"). The theory of the straight line, angle, and triangle.

Extension of the theory of the triangle. Theory of the parallelogram, chords and arcs of circles. Exercises of construction. Recapitulation

[1] The straight line has been defined as the shortest distance between two points, a definition which is very unsatisfactory. See Journ. Royal Society N.S.W., 1901, pp. 254-257. Lacroix's Elements, 15th edit., 1834, p. 2.

Recapitulation, and theory of circle. Principle of a real equality of plane figures. Pythagoras theorem. Calculation of areas of rectilinear figures. Exercises in construction.

Theory of homology. Proportionality of straight lines in circles, continual division. Regular polygons. Circumference and content of circles. Problems of construction.

Harmonic points, harmonic rays and transversals. Applications in algebra and geometry. Problems of construction, especially such as relate to algebraic analysis.

Trigonometrical problems, and solutions by planimetric constructions.

Stereometry and its application to geography and astronomy. Introduction to perspective drawing of forms in space.

The conception of co-ordinates. Fundamental conceptions of the conic sections.[1]

The above represents the course as taken in the Classical Gymnasium. In the Real Gymnasium and Oberrealschule the propædeutics and general development is much the same, but the subject is somewhat extended. For example, in addition, spherical trigonometry is more thoroughly done, and the fundamental theory of projective geometry, the most important parts of conical sections geometrically treated (elementar-synthetischer Behandlung), and analytic plane geometry are included.[2]

The geometrical instruction commences with the preparatory work of using the ruler and compass, and the consideration of simple bodies, so as to get clear conceptions thereof.

7. *Geometry in the Primary Schools of Hungary.*—According to the law, geometry is not an obligatory subject in the primary schools of Hungary. It is not neglected, however, and is always to be found in the programmes of the two highest classes (the 5th and 6th) in schools where there are several teachers.

In the fifth class, the principal properties of the line, angle, triangle, and polygon are studied, and the pupils learn to ascertain the areas of surfaces. In the sixth class, the pupils learn also the geometry of the plane and solid, and to calculate the surface of solid bodies.

In the complementary school, the properties of the circle and cylinder are considered, and the calculations of the surface of round bodies.

The teaching of geometry in the normal schools for primary teachers commences in the second class. Starting with elementary notions, it goes in this class as far as practical surveying, and the drawing of plans. In the 3rd class, the theorem of Pythagoras, the conic sections, and also the spiral, are treated. In the 4th class, *i.e.* the last, polyhedra are studied, and their volumes, surfaces, etc. calculated.

8. *Italy.*—In Italy, the books of Euclid are read in the Gymnasia. In addition, the studies in geometry include the measurement of magnitudes, the area of rectilinear figures, the trigonometrical relations between the sides and angles of a right-angled triangle, perpendiculars, and oblique surfaces, plane and parallel surfaces, angle between planes, solid angles, perpendicular surfaces, polyhedra, similarity of solid angles. Prisms and parallelepipeds, pyramids, surface and volume of cone, cylinder, and sphere. Similarity of figures.

In technical schools the above is extended to embrace homothetic and similar figures, the elements of descriptive geometry, plane trigonometry, the regular solids, and spherical trigonometry.

9. *Geometry in Russia.*—The following is the method of developing the subject of geometry in Russia :—

(1) Lines, angles, triangles, and their congruence. Quadrilaterals and polygons. The circle, arc, radius, diameter, chord, tangent, and secant. Concentric circles. Problems of construction in regard to all of the above.

(2) Relation of straight lines to one another. Similar figures. Angle in circle. Inscribed and circumscribed triangles and polygons. Circumference of circle. Areas of rectilinear figures of the circle and its parts (segments and sectors, etc.). Problems touching all sections. Position of lines and surfaces in space. Solid angles.

(3) Plane trigonometry.

(4) Recapitulation of the whole of (1), (2), and (3).

10. *Geometry in Primary Schools of Sweden.*—In Sweden the geometry of the lower primary schools consists of the drawing and measurement of lines, angles, triangles, quadrilaterals, circles, the computation of simple solids. In the higher course in the primary schools it embraces computations and the ordinary work in the first three books of Euclid. In the complementary schools, the geometry consists of the drawing, description and measurement of polygons and ellipses, of polyhedra, the sphere, etc.

11. *Geometry in Primary Schools of Switzerland.*—Regarding geometry as the science of spatial form, the teaching in Switzerland may be said to commence in the infant-schools and kindergartens. All Froebelian occupations that deal with the naming and examining of forms are educating the child in geometrical ideas intuitively.

In the first classes of the primary schools, the lessons in geography, in mensuration, in "tachymétrie" (measurement and estimation of distance, etc.), also constitute some form of teaching of this subject. This makes no pretension to being scientific, it is teaching by intuition, not by ratiocination (on *montre* plus qu'on ne *demontre*). Simple geometrical bodies are shewn to the children, their elements are analysed, the different parts are described and named, their relations are estimated or measured.

In the earlier stages of teaching, technical definitions are avoided, the development of ideas being based upon concrete objects of regular and definitely measurable shape.

The experience of Switzerland is that this intuitive geometry is a valuable aid in drawing and manual work[3]; and in the highest classes it takes the practical form in which the science originated with the Egyptians—that is, field practice in surveying: hence the teaching is mainly what is called by us *practical geometry.* These

[1] Die höheren Schulen in Preussen und ihre Lehrer. Adolf, Beier Halle, 1902, pp. 78-79.

[2] *Ibid.*, pp. 80-81.

[3] Education et Instruction par. F. Guex etc. "Cet enseignement tout intuitif de la géométrie trouve un puissant auxiliaire dans celui du dessin et des travaux manuels," p. 117.

These operations in the field, demonstrating the theoretical results deduced in school lessons, give the children elementary but essentially practical conceptions of the measurement of lines, angles, areas, etc. They make plans of a simple kind by using the set square, etc.; they level, draw contours, interpret the cadastral plans, and so on.

The following is a synopsis from the programme of the Genevese Primary Schools.

Children, 9-10.—4 lessons of half-hour per week.—Drawing and explanation of triangle, square, and rectangle. Area of the two last figures.

Children, 10-11.—2 hours per week. Recapitulation of preceding work. Triangles and quadrilaterals. Exact construction on blackboard by means of square and compass. Determination of their areas.

Children, 11-12 (2 hours per week). *First Semester*:—Recapitulation of last year's work. Drawing and determination of area, etc., of regular polygons, irregular polygons, the circle. Reduction of figures. The cube, parallelepiped, their surfaces, and volumes. *Second Semester*:—The prism and cylinder and their surface.

Practical exercises for boys:—Measurement of small plots of ground. Sketch-plans of school-hall, corridors, yards, etc.

Children, 12-13 (2 hours per week). *First Semester*, Boys:—Recapitulation of last year's programme. Surface and volumes of solids, parallepiped, prism, cylinder, pyramid, cone. Development of the surfaces. Construction of these developments, and practical application. *Second Semester*:—Truncated solids (cut by plane parallel to base). Various practical applications—heap of sand, trunk of tree, etc. Surface and volume of a sphere. Abridgments in practical methods in the calculation of surfaces, volumes, etc. Girls:—Applications of last year's work to form, shape, and design, etc.

It must not be forgotten that practical geometry is really taught also in the drawing lessons. The portions that are specially geometrical are as follows:—

Children, 7-8 (6 lessons of half hour each, per week):—Point, horizontal, vertical, and parallel lines. Simplest geometrical figures. Box of cubes (Froebel's 6th gift), for explaining division into parts.

Children, 8-9 (6 lessons of half-hour each, per week):—Recapitulation of previous year's work by means of objects that also admit of *new* ideas being presented; example, that of an angle—an opened book. Explanation of an *axis of symmetry*. Simple objects.

Children, 9-10 (4 hours per week):—Drawing of simple forms easily recalled from combinations of triangles, rectangles, etc.

Children, 10-11 (3 hours per week):—Plan of room. Scales of reduction. Vertical and oblique planes. Reconstruction of simple bodies by combining sections. Drawing of objects of three dimensions.

Children, 11-12 (girls 2 hours, boys 3 hours per week):—Recapitulation. Bodies formed by rotation, and explanation of their character by plane sections. Construction from sketches of a side view. Drawing of objects in *free* perspective.

Children, 12-13 (girls 2 hours, boys 3 hours, per week):—Drawing of solids and objects from sections and side elevations. *Development of their surfaces*. Notions of *normal* perspective.

To understand the above work fully it is necessary to take into account the education of the teachers in the mathematical subjects; for the interpretation of these synopses depends wholly on that. They of course mean much or little according to the culture of the teacher.

12. *Geometrical Education of Teachers—Switzerland.*—At the Küsnacht Seminarium the aim in the mathematical training of teachers is the formation of thoroughly clear numerical and spatial conceptions, with a view to conferring the power of making critical and scientific deductions, in the whole province of numerical and measurable magnitudes, thus leading to a clear understanding of the interrelations of mathematical truths.

In the 1st class of the Seminary for teachers, what is called *planimetry* ("Planimetrie"), is treated as follows:—

The intuitions of space. Fixation of the fundamental ideas. Straight line and circle. Linear and angular measurement. Parallels and perpendiculars. Central and axial symmetry. Congruence. Motion and rotation. Construction of triangles. Propositions regarding ordinary and special quadrilaterals. The secants, tangents and angles of circles. Comparison, transformation, and measurement of the surfaces of triangles and polygons.

In the second class *planimetry* and *trigonometry* are both dealt with as follows:—

The theory of similarity of plane figures. Variations of scale. The regular polygons. The areas o circles. Construction of simple algebraic expressions. Straight line and circle as geometrica loci. The method of solution of planimetric exercises in construction. Practical exercises with the simplest instruments in setting out and measuring distances and right angles. Application to the survey of small areas of ground.

Trigonometry.—The definition and functions of an acute angle. Complete treatment of right angles and isosceles triangles. Exercises in calculation, by the use of the numerical value of functions.

In the third class, trigonometry, stereometry and the theory of projection are taken, the development being as follows:—

Trigonometry.—Geometrical derivation of propositions concerning oblique-angled triangles, and extension of definitions. Practical problems, particularly such as are connected with triangulation, physics, and stereometry. General definitions and principles of angle measurement. The construction of trigonometrical expressions and examples of the trigonometrical analysis of geometrical constructions.

Stereometry.—Positional relations of space elements, in particular parallelism and perpendicularity. The notion of projection. Measurement of distances and angles. Spatial symmetry. Construction of solid angles, etc., with three and more edges. Euler's theorem and the regular polyhedra.

Theory of Projection.—The oblique parallel projection as method of demonstration. Projection of points, straight lines, plane polygons and simple objects, in plan or elevation. The ellipse as a projection of a circle, and its focal definition.

In

In the fourth class co-ordinate geometry is introduced, stereometry and the theory of projection are extended, and a methodical and historical review of the province of pure and applied geometry as regards the primary school is given.

Co-ordinate Geometry.—Rectangular and polar co-ordinates in space of two or three dimensions. Graphical representation of simple functions of a variable. Graphical solution of numerical equations.

Stereometry.—The sphere and its elementary tangent-surfaces. The plane section of its surface. Spherical triangle. The surfaces and volumes of elementary bodies, and of their simple parts. Application to the determination of weight.

Theory of Projection.—Projection of polyhedra and of elementary bodies with curved surfaces, in plan and elevation. Development and establishment by models. The more important map-projections. Simple exercises regarding points of sections, with application to shadows. The fundamental notions of geometrical perspective, referring particularly to vanishing points, and foreshortening.

Methodical and historico-critical review concerning the province of pure and commercial calculations, and geometry as concerning the primary school.[1]

It hardly needs pointing out that this course is an excellent preparation for the teaching of a much more thorough form of geometry than that to which we are accustomed in the primary schools here.

The use of the intuitive or assisted heuristic-genetic method (heuristisch-genetische Behandlung) is to win interest. An historical glance at the developments of modern geometry reveals at once the power of modern general methods as compared with the older special proceeding; and it is particularly desirable in the primary school that the material should be treated in the *simplest* and most *obvious* way. The children must be made to see clearly what is being taught. It is in this way that they obtain original and individual power. These views are impressed strongly upon the student-teachers during their course in the Continental training colleges.

It may be said that the teaching is comprehensive in other parts of Switzerland also. The above may be taken as representing the ideas of the German portion; but the French part also teaches geometry excellently.

For example, in the Geneva College mathematics is taught to student-teachers according to the following scheme:—

STUDENT-TEACHERS AGED 15.

Geometry.—The plane and the different lines that may be traced thereupon. Angles, perpendiculars, and parallels. Triangle, isosceles, right-angled. Equality of triangles. Sum of the angles of a triangle, and of a convex polygon. Quadrilaterals. The parallelogram. The circle. Properties of chords and tangents. Angle at centre, and inscribed angle. Inscribed and circumscribed polygons. Regular polygons and their properties. Proportional lines and similar figures. Principal cases of similarity between two triangles and two polygons. Metrical relations. Calculation of π. The area of plane figures, viz., of the rectangle, parallelogram, triangle, trapezium, polygon, and circle. Comparison of areas. Numerous exercises on all parts of the programme.

STUDENT-TEACHERS AGED 16.

Geometry.—The plane. The perpendicular and oblique to a plane; parallel planes, perpendicular planes, dihedral angles. Equality of two trihedra which have their three faces respectively equal. The polyhedra; prism, parallelepiped, pyramid, truncated pyramid, surface and volume of these figures. Spherical bodies: cylinder, cone, truncated cone and sphere; their surfaces and volumes. Numerous exercises upon all parts of the programme.

STUDENT-TEACHERS AGED 17.

Trigonometry.—Trigonometrical ratios of an acute angle. Solution of right-angle triangle; applications. Study of the trigonometrical functions of any angle whatsoever. Problems of inverse functions. Relations subsisting among trigonometrical functions of supplementary and complementary arcs, etc. The theory of projection. Addition and subtraction of arcs. Multiplication and division of arcs. Transformation of products of the sum of two sines or two cosines. Simple trigonometrical equations of one unknown. Relations subsisting between the angles and sides of any triangle whatsoever. Solutions of any triangles; the results should, as often as possible, be verified by means of drawing. Various applications. The elements of spherical trigonometry. Fundamental relations. The solution of triangles.

STUDENT-TEACHERS AGED 18.

Analytical Geometry.—Introduction. The graphical representation of a phænomenon or a law. The notion of co-ordinates. Problems concerning the point; harmonic division. Area of the triangle and polygon. Transformation of co-ordinates. The straight line; equation of a line, its various forms, intersection of two lines, angle of two lines, distance to a point from a straight line.

The circle.—Equation of the circumference of a circle, circumference passing through three given points, tangents. Power of a point in relation to a circumference. Intersection of two circumferences. Geometrical positions.

Conic sections.—Synthetic studies: demonstration of fundamental properties by means of a cone of revolution, construction of conics by points, property of tangents. The ellipse and equation of curve related to its axis of symmetry, equation of the tangent, the ellipse considered as the orthogonal projection of the circumference of a circle, conjugate diameters, area of the ellipse.

Hyperbola.—Equations of the curve related to its axis of symmetry, discussion of the equation, the equation of the tangent, conjugate diameters.

Parabola.—Equation of the curve related to its axis of symmetry and the tangent at its summit, the equation of the tangent, sub-tangent, and sub-normal, conjugate diameters. The equation common to the ellipse, hyperbola and parabola in rectangular and polar co-ordinates.

Besides the study of geometry, etc., there is also a considerable time spent on the consideration of the methodology subject from a teaching standpoint.

13. *Geometry in the United Kingdom.*—The reading of the several books of Euclid's elements as a means of learning geometry has been maintained in England by the powerful influence of its older Universities. Despite this it is now widely recognised that such a course has been to the detriment of the English nation, in regard to its apprehension not only of geometry, but also of mathematical subjects generally. Many eminent geometricians, realising acutely the great advantages inhering in continental methods of teaching mathematics, have tried from time to time to replace the reading of Euclid by methods leading to a quicker, more extensive and more powerful acquaintance with the subject.

Among

[1] See Jahrb. d. Unterrichtwesens in der Schweiz. 14 Jahrg., pp. 184–185. Zürich, 1902.

Among recent attempts to present the truths of elementary geometry in a more simple, general and unexceptionable form, may be mentioned that of Professor Henrici. His elementary geometry treating of congruent figures is practically an introduction of continental conceptions of the subject, though in its detail it is cast in his own form. Professor Henrici, starting with the ordinary intuition of space, defines a definite portion thereof as a *solid*, the boundary of this being a *surface*. The boundary of the surface is a *line*, and of a line, a *point*. He next proceeds to shew that, in general, a line is generated by the motion of a point, a surface by the motion of a line, and a solid by the motion of a surface. Explaining the notions of congruency, reciprocity, axial and central symmetry, and the nature of loci, he shews how the application of these to the problems and theorems of geometry lead to great simplification, and further that a large number of tedious Euclidean proofs are rendered so obvious as really to dispense with the need of specific statement. At the close of his little work, he points out that curves can be generated in other ways than by the motion of a point; for example a curve may be regarded as an envelope.

Such a method of studying elementary geometry as Henrici outlined has the great advantage that the proof of each proposition is to a large extent self-contained, and the generality of the method not only deepens the appreciation of geometrical truth but greatly extends the power of a geometer, to say nothing of the fact that the total geometrical truth contained in the elements of Euclid is acquired not only in a short time but also very easily, as compared with a direct study of such elements.

A discussion took place in the British Association for the Advancement of Science on the teaching of Mathematics at the Glasgow meeting in 1901. This led to a report being presented on the subject at the Belfast meeting in September, 1902, during which time the Commissioners were travelling in Europe. Quotations will be given from both of these, since they throw light upon the attitude in the United Kingdom as to the question of the proper method of teaching geometry as a branch of mathematical science.

The tenacity with which many English mathematicians have clung to Euclid's elements may be thought remarkable, especially when it is borne in mind that the totality of geometrical truth in those elements is, as above said, not large. This feeling will be greatly discounted, however, when the real facts of the average state of mathematical equipment in Europe and in England are understood, and when too it is recollected that the old-fashioned method of teaching has greatly hampered our nation in taking its proper place in the world's mathematical activity, notwithstanding that England has undoubtedly produced mathematicians of the highest order. The English Reform Movement will be outlined in the paragraphs immediately following.

14. *Some English opinions as to Euclidean Geometry.*—It is beyond the limits of this chapter to give any adequate account of the discussion of the proper way of acquiring a knowledge of geometry. All that is practicable is to give a few recent references thereto.

15. *Professor Sylvester.* As far back as 1869 in an address to the British Association for the Advancement of Science, Professor Sylvester said :—

"I would rejoice to see Euclid honourably shelved, or buried 'deeper than did ever plummet sound' out of the school-boy's reach." . . . . . "The early study of Euclid made me a hater of geometry." Of Professor Sylvester's great eminence as a mathematician it is unnecessary to speak.

The paper on the teaching of mathematics read by Professor Perry and the discussion it raised in Sections A and L of the British Association has been published by Messrs. Macmillan (1901). The views expressed hereunder are quoted from that source, the paging being as in the pamphlet.

16. *Professor J. Perry* alleged that the existing methods of teaching geometry do not aim at thoroughly developing a knowledge of the subject, or a love of it, but rather at qualifying to pass Examination (p. 5), and he thought that they were also defective in that they did not pay sufficient attention to the fact that "the earlier the age at which you give one the chance of exercising his individuality the better" (p. 8). He charges the existing mathematical teaching with being unpractical, inadequate and tedious. "I believe," he says, "that men who teach demonstrative geometry, and orthodox mathematics generally, are not only destroying what power to think already exists, but are producing a dislike, a hatred for all kinds of computation, and therefore for all scientific study of nature, and are doing incalculable harm." (p. 16). He deprecated the complication of geometry by introducing unnecessary arithmetic (p. 20). He states the demerits of demonstrative geometry in the following terms :—

"The average English boy takes unkindly to abstract reasoning, and if compelled to such study when unwilling is hurt mentally for life; loses his self-respect first, then his respect for all philosophy; gets to hate mathematics.

"Even for exceptional young boys demonstrative geometry is bad educationally because they reason about geometrical magnitudes before they know what these magnitudes really are; they apply the same reasoning to more complex ideas of which they have the same ignorance; they become vain of their specious knowledge; they get to hate all applications of mathematics." (pp. 21-22.)

His scheme then propounded for the learning of geometry was as follows (pp. 28–29) :—

Geometry.—Dividing lines into parts in given proportions, and other experimental illustrations of the sixth book of Euclid. Measurement of angles in degrees and radians. The definitions of the sine, cosine, and tangent of an angle; determination of their values by graphical methods; setting out of angles by means of a protractor when they are given in degrees or radians, also when the value of the sine, cosine, or tangent is given. Use of tables of sines, cosines, and tangents. The solution of a right-angled triangle by calculation, and by drawing to scale. The construction of any triangle from given data; determination of the area of a triangle. The more important propositions of Euclid may be illustrated by actual drawing; if the proposition is about angles, these may be measured by means of a protractor; or if it refers to the equality of lines, areas or ratios, lengths may be measured by a scale, and the necessary calculations made arithmetically. This combination of drawing and arithmetical calculation may be freely used to illustrate the truth of a proposition. A good teacher will occasionally introduce demonstrative proof as well as mere measurement.

The method of representing the position of a point in space by its distances from three co-ordinate planes. How the angles are measured between (1) a line and plane; (2) two planes. The angle between two lines has a meaning, whether they do or do not meet. What is meant by the projection of a line or a plane figure on a plane. Plan and elevation of a line which is inclined at given angles to the co-ordinate planes. The meaning of the terms "trace of a line," "trace of a plane."

The

The distinction between a scalar quantity and a vector quantity. Addition and subtraction o vectors. Experimental illustrations.

In setting out the above syllabus, the items have been arranged under the various branches of the subject.

It will be obvious that it is not intended that these should be studied in the order in which they appear; the teacher will arrange a mixed course such as seems to him best for the class of students with whom he has to deal. A good teacher must understand that no examination made by any one other than himself can be framed which will properly test the result of his teaching. He must endeavour to give knowledge which becomes part of his pupil's mental machinery, so that the pupil is certain to apply it in all sorts of practical problems, and will no more allow it to become rusty than his power to read or write or walk."

The advanced course included "greater elaboration of the work specified in the elementary course, that is, much more practice in such computation from more complex formulæ. Demonstrative geometry *based upon* Euclid," some trigonometry, etc., and geometry as follows:—(pp. 31-32.)

"Geometry. How the position of a point in space is defined by its rectangular co-ordinates x, y, z, or by its polar co-ordinates r, θ, ϕ; the relations between x, y, z, and r, θ, ϕ.

Determination of the three angles α, β, γ which a given line makes with the three co-ordinate axes; the relation

$$\cos^2 \alpha + \cos^2 \beta + \cos^2 \gamma = 1.$$

Determination of the angles between a given line and each of the co-ordinate planes.

When a plane is given by its traces, to determine its inclination to each of the three co-ordinate axes and planes.

The above may be treated analytically or graphically.

Representation by its projections on the three co-ordinate planes of a line whose position and real length are given.

Determination of the angle between two given lines; the angle between two planes whose traces are given. Represent by its projections the line of intersection of two planes whose traces are given.

Vectors.—The scalar product and vector product of two given vectors, with illustrations. Easy Vector Algebra."

17. *Professor Hudson*, of King's College, London, in opening the discussion, among other things, said (pp. 32-34):—

"Geometry is, perhaps, the very worst case. It is taught sometimes merely as an exercise of memory. I lay it down as a sort of axiom that the understanding of the pupil ought to be exercised in all his studies, in everything that he learns. . . . The first lessons in geometry may be given in play with bricks and other models. When the boy is able to wield a pair of compasses without danger, he should, as a sort of play, draw various figures. This will excite his curiosity to know why certain results, such as the bisection of a straight line, are attained, and prepare him for a course of geometrical reasoning."

"A reform in the teaching of geometry is consistent with the retention of Euclid's order. No change of text-book will be efficacious unless the system of learning by heart is entirely given up."

It may be noted here that the last dictum in reference to Euclid's order has little support outside of England and, perhaps, Italy.

18. *Professor Forsyth*, of Cambridge, remarks that (pp. 37-39):—"A great deal is said as though all those boys who are taught arithmetic should be taught geometry. I think it requires to some extent a special faculty to appreciate geometry. . . . Every child is willing to draw in some form or other; and by taking proper opportunity an indication will be given of an appreciation of geometry. Before I began to teach a boy the subject of geometry, I would take care that the boy has shewn some sort of facility in using ruler and compasses. He should be made to go through a certain amount of common practical geometry. I want him to be able to use his instruments, and to do something that is accurate in the measurement of distance. It is only after a boy has undergone a certain amount of training, and shewn a certain amount of facility in geometrical drawing, that in my opinion he ought to be turned on to the study of geometry; and the way in which he should be turned on to the study of geometry would be to utilise the practical knowledge that he is already familiar with and continues to acquire. By guiding him among things with which he is already familiar, he may be enabled to pass from the practical working of his instruments to reasoning about the operations he has carried through. But Professor Perry may say that my suggested method is not taking him to Euclid. It may be so; at any rate it is a desirable preliminary to geometrical reasoning, for it gives the materials about which the reasoning is to be made. Without being an ardent defender of the Elements of Euclid as a text-book, still I would make it the basis of the teaching of a pupil, at any rate at the present time. So far as I can make out, one of the reasons why the book is adopted so largely in our country is that there is no other book which teachers in general would use, and which finds general acceptance to the same extent as Euclid. Not that I would adhere to the original proofs to the exclusion of all else;—that is not done in any of the books that deal with the Elements. But the sequence is a recognised sequence, and, within that restriction, there is reasonable opening for any teacher's individuality. Of course I know that there are ardent defenders of Euclid, who regard his work as being so completely logical that it should not be altered. I do not share in their view, "Knowing the large number of assumptions implicitly made and never stated."

. . . Indeed, if one had to make an honest confession of opinion, it would be to say that the one thing in which we are notoriously deficient in England is the proper training of teachers. A proper system of training teachers should be established."

19. *Major MacMahon*, then President of Section A of the Association—the section dealing with mathematics—appeared inclined to retain Euclid's Elements. He says (pp. 39-40):—

"We are asked to give up Euclid. Before we do that we must have something else put before us. The Association for the Improvement of Geometrical Teaching has not advanced a proper substitute. I have tried to find out from those who have been prominent in that Society what it really proposes as a substitute for Euclid, but without success. I look upon Euclid as an instrument for the cultivation of the mind. I think it should be taught in conjunction with geometrical drawing. . . . All algebra students

students should be taught the foundations of numerical magnitudes on *squared* paper, and in that way algebra, and also trigonometry, would form a suitable introduction to geometry, which, I think, should be taught before geometrical conic sections. I think solid geometry, trigonometry, and spherical astronomy should be taught together."

20. *E. M. Langley*, of the Bedford Modern School, expressed his disbelief in the adoption of Euclid's elements, and the failure to provide for the *continuous* teaching of geometry in the following terms (pp. 40-42) :—

"No words can condemn too strongly the practice of beginning the study of geometry by 'learning Euclid,' as it is called. When a batch of new boys is handed over to us to 'begin Euclid' we are confronted by difficulties from which we might well shrink if we did not know that they have been and are habitually overcome (only overcome, however, as a rule, at an unspeakable cost to both pupil and teacher). We have to train ordinary boys who have previously seldom reasoned formally and continuously about anything—(1) to reason formally and continuously, (2) about things of whose names and properties they are ignorant. . . . . He (*i.e.* the teacher) may, while they are learning Euclid, do much by familiar and well-chosen illustrations, by the use of models, and by work with ruler and compasses, to encourage the growth of sound geometrical ideas in his pupils' minds. He may, however, be able to arrange that before beginning their formal course of deductive geometry they shall go through a course of experimental geometry, and thus gain a knowledge, sound and thorough as far as it goes, of the subjects which they are to reason formally later on.

"As to the need of such a course I do not think there can be any doubt. Even if a child has been fortunate enough to have been taught in a good Kindergarten up to the age of 7 or 8, and to have been taken by carefully trained teachers through a well-considered course, there still exists a great gap between this and his introduction to Euclid at the age of 11. In these three or four years he is sure to lose much of what he has previously gained. What is wanted is a school course to bridge over or fill up this gap." . . . . "After a course like this, pupils would come to their course of formal deductive geometry well stored with sound geometrical ideas, and capable of reasoning upon them. But besides a first experimental course which shall lead up to and prepare for the deductive one, there is need for a second one which shall accompany it, and give a similar experimental knowledge of subjects higher up in the school course and beyond it." . . . . "Loci, with their application to the solution of problems and Plane Perspective, might be gradually introduced, care being taken that ideas should be induced to form themselves in the pupil's mind without any consciousness on his part that he was learning to use powerful scientific arms with formidable technical names."

21. *Professor Everett* stated his view in the following terms (pp. 44-46) :—

"The teaching of geometry has been too pedantic. The minds of boys and girls are not ripe for dealing with abstractions. The way in which Euclid begins (especially if the whole body of Definitions is taken first) gives the learner the impression of a castle in the clouds.

"A moderate amount of practical geometry should come first, including methods of bisecting lines and angles, drawing lines at right angles, making a triangle with sides of prescribed lengths, and inscribing a regular hexagon in a given circle. This will give the learner definite conceptions, and help him to feel that he is on solid ground.

"Side by side with Euclid *or a substitute for Euclid*, verification by actual measurement of carefully drawn figures should be encouraged. It is useful as a test of the accuracy with which measurements can be made by the methods employed, and also useful as a check against mistakes—which are liable to be made in abstract reasoning as well as in other matters. . . . Too much time and labour are often devoted to subjects not necessary as means of further progress—for instance, to geometrical conics, and to very elaborate exercises in trigonometry."

"Another subject that is too long postponed is solid geometry. It is postponed so long that most boys do not get it at all. Considering that we live and move in space of three dimensions, it is unreasonable and unpractical to confine all accurate thinking and teaching for three or four years to two-dimensional space. The result is to produce an instinctive shrinking from all three-dimensional thinking, as if it involved some terrible mystery. It should be *taught in a realistic manner*, with the aid of models; and the properties of direction-cosines should be introduced before the learner has got very far in trigonometry."

"I agree with Professor Perry in recommending the use of squared paper for a variety of purposes."

22. *Professor Rücker*, now Sir A. W. Rücker, then president of the British Association, said (p. 48) that it was "well to approach the subject in the first instance, as far as possible, on the concrete side."

23. *Professor Silvanus P. Thompson* strongly supported the complete reform of mathematical education. He says (p. 49) :—

"Pupils should be taught how to differentiate and how to integrate simple algebraic expressions before we attempt to teach them geometry and these other complicated things. The dreadful fear of the calculus symbols is entirely broken down in those cases where, at the beginning, the teaching of the calculus is adopted. Then, after the pupil has mastered those symbols, you may begin geometry or anything you please. I would also abolish out of the school that thing called geometrical conics. Teach it as a pure piece of geometry, and do not confine it to conics. There is a great deal of superstition about conic sections. The student should be taught the symbols of the calculus and the simple use of these symbols at the earliest age, instead of these being left over until he has gone to the College or University."

24. *Mrs. W. N. Shaw*, referring to geometry, says (p. 52) :—

"Geometry is, perhaps, the subject which suffers most from inefficient teaching. I do not agree that we should abolish Euclid from the schools; Euclid's methods are very valuable as specimens of sound reasoning, and as illustrating the nature of a proof; *the absurdity of our present system lies in using Euclid as a means of teaching geometrical facts.* For that purpose the children should handle solid bodies, and from them obtain plane figures. The faces of crystals supply many of the plane figures treated of in Euclid, and obtaining the figures from natural objects gives life and interest to the subject such as cannot be induced by drawing lines arbitrarily on paper. When the names of the figures are familiar language to the child,

and

and he has for himself observed and classified their properties, he may be interested by an account of Euclid and his times, and be incited to find how the properties he has observed for the few objects he can handle can be shewn to be generalised truths for abstract forms. Moreover, it should not be forgotten that mathematical subjects have also a long and interesting history, and a great deal would be gained from a literary point of view if the history of mathematics to the part reached by the pupil were made known in a reasonable manner. The lives of great mathematicians and other men of science should be studied, the state of the special subject when they lived should be known, and their additions to it made manifest. It could not fail to be stimulating to the best of students to learn something of what any man of genius had done to extend our knowledge of his subject, and the benefits we reap from such extension."

25. *Professor Greenhill* refers (pp. 53-54) to "the superiority of French methods over our own, and the backward state of our methematical instruction," and he points out that the plotting of graphs of simple algebraical curves on squared paper are inculcated in French treatises.

26. *Professor Olaus Henrici*, who himself was the author of an excellent text book on a reformed geometry, says (p. 55) :—

"I agree that the method of teaching should be developed by the student himself on the concrete system. I also believe that the whole teaching of mathematics would be revolutionised if every child in the country were taught something of geometrical drawing. The elements must be taught scientifically; the child must understand the reasoning and the meaning of the result of reasoning. There should be not merely drawing to scale by the drawing of the same figure to different scales" . . . . . "I hope mathematicians will not find it beyond their dignity to write more elementary books on the subject in a more scientific way."

27. *Professor Alfred Lodge*, while realising that reading Euclid's elements is an unsatisfactory way of learning geometry, seems inclined to retain Euclid to some extent. He says (pp. 56-58) :—

"I wish to urge, with Professor Perry, that the teaching of elementary mathematics should be as far as possible concrete; that, for example, areas of rectangles and other plane figures should be calculated from actual measurements made by the pupils themselves, and that volumes and surfaces of solids should be studied in the same way. The distinction between lengths, areas, and volumes would by such means become instinctive." . . . . . "In other parts of the subject there are of course many ways in which geometry (plotting of variable quantities, solution of simultaneous equations, etc.) can be made helpful and stimulating."

"In connection with geometry many teachers agree that Euclid as a text book labours under many disadvantages; it pays more attention to logic than geometry, and the constructions given in it are for the most part *eminently unpractical*. It is too much divorced from practical geometry and mensuration. But it is easier to find fault than to suggest a remedy, especially so long as a knowledge of Euclid is absolutely necessary for examinations. But even in the study of Euclid much could be done to make its results more real and interesting to the average boy. Some practical acquaintance with geometrical magnitudes and measurements should precede any study of Euclid. Then in working at Euclid accurate but varied figures should be insisted on, and results should be frequently tested by actual measurements and numerical work. Many ideas become thoroughly assimilated 'through the fingers' which would otherwise remain in the air."

"Examining bodies could materially assist in the more rapid assimilation of Euclid if they would agree to a few modifications of their system of setting questions."

He argues the desirability of using *hypothetical constructions*, by which many propositions can be readily established. That he realises the desirability of change is manifest from the following passage (p. 58): "I have mentioned only a few points in which I think improvements could be effected, pending the introduction of *a standard geometry other than Euclid*."

28. *Professor Miall* meets the objection that there is no other available text book, or that various text-books would lead to confusion in the following words (p. 59) :—

"We are asked : How can the pupils be examined in geometry if one has studied one book and another a different one? What a measure does that question give of our educational methods. First comes the examiner; then, I suppose, the teacher; but where does the pupil come in? The difficulty does not exist outside the English-speaking nations, who have Euclid as a school-book entirely to themselves. Elsewhere it is not found to be too hard to say who is competent in geometry and who is not. The teacher in all parts of his work is too much dominated by examiners and inspectors; he is not at liberty to try things for himself."

29. *Professor Minchin* openly expresses the belief that the Euclidean order is a defective one. He says (p. 59) :—

"What they (the Civil Service Commissioners) ask is that there should be no departure from Euclid's order. *I think Euclid's order is bad and should be departed from*, but I do not see what else the Civil Service Commissioners can do, because the real culprits in the matter are the head-masters of the public schools who stand in the way, and will have Euclid as the text-book. I think that geometry ought to be taught to the young in connection with arithmetic. Again, I think that those who teach mathematics have not yet learned the enormous value of graphical methods in the solution of all kinds of problems."

30. *Professor Andrew Jamieson* approved generally Professor Perry's advocacy of a "rational system of teaching mathematics." (p. 62).

1. *Sir John Gorst* stated (pp. 63—64) :—

"In teaching mathematics in my younger days I had what was a very unique experience. I taught, or attempted to teach, mathematics to the Maori boys and men in New Zealand." . . . . . "But when in my youthful enthusiasm, finding the extreme rapidity with which they learnt the rules and practised the problems

problems of arithmetic, I proceeded to try to teach some of them Euclid, or rather geometry after the Euclid fashion, I absolutely and entirely failed. There was not one of them that could grasp or understand the simplest of the propositions of Euclid." . . . . . "Had I had the advantage of the discussion to which I had listened to-day, I should have abandoned teaching in the ordinary way until they had been familiarised with angles, lines, areas, and geometrical figures, of which the Maori youth was absolutely ignorant. I suppose by a method of that kind, even the least developed intellect of the uncivilised native of New Zealand might have been brought to take in some of the very simple propositions of geometry." . . . . . "It might have been possible to make Maories familiar with the concrete objects of geometry, but it was absolutely impossible to get into their minds those general and abstract propositions which to them had no meaning whatever."

Sir John Gorst touches the heart of the question, viz., the misappropriateness of the method of making Euclid's Element the basis of a scheme of teaching geometry.

32. *Principal Oliver Lodge* strongly dissents from the view that reading Euclid's Elements is learning geometry. He says (pp. 65–66) :—

"The 'linear' demonstration of Euclid, where in order to be rigorous the whole order of the propositions must be remembered, is artificial; and although supposed to be peculiarly crucial *it is not really demonstrative in a satisfying manner, because it is easy with a little ingenuity to demonstrate a fallacy by such a process as that;* and it takes more than a beginner to be able to detect the flaw." . . . . . "It is injudicious for him—a school boy—to imagine that he could always reason himself into the truth by a strictly Euclidean process, and that he would always be able to detect the flaw when there was one.

"I venture to say that the Euclidean geometry considered as a philosophical system, though highly ingenious and delightful from some points of view, is based upon a fallacy –that is to say, is based upon an erroneous view of what constitutes proof, an erroneous view as to the nature of axioms." . . . . . "The basis of experience underlying all axioms is so purposely masked in Greek geometry that it has been thought (and I suppose by Euclid was thought) to be non-existent. And so geometry appears to be built upon air—a kind of mental figment, a self-woven wraith, instead of what it really is, a very abstract variety of science; and as such it has constituted a bad introduction to science, and so far from assisting to withstand a tendency to deal with book knowledge alone, it has over-emphasised that tendency, and polluted what might have been the earliest effort of the mind to get into reasoning contact with Nature herself."

33. *Oliver Heavside* clearly agrees with the more concrete forms of teaching mathematics. He writes (pp. 67–68) :—

"Boys are not philosophers and logicians. Boys are usually exceedingly stupid in anything requiring concentrated reasoning. It is not in the nature of their soft brains that they should take kindly to Euclid and other stuff of that logic-chopping kind. But they usually possess another sort of mental ability—namely, the ready acquisition of new facts and ideas—and that is what should be taken advantage of." . . . . . "Now, the prevalent idea of mathematical works is that you must understand the reason why first, before you proceed to practice. This is fudge and fiddlesticks. I speak with confidence in this matter, not merely from experience as a boy myself, and from knowledge of other boys, but as a grown man who has had some practice in applications of mathematics.

"There is so much to learn nowadays, really valuable knowledge of all sorts that it seems to me a wicked sin to go in the old way, with . . . . Euclid". . . . "*The general inability of boys to study Euclid profitably is no reason why they should not learn geometry. Even stupid boys could do that, when properly directed and experimentally assisted.*[1] And as regards mathematics in general, I think it a very important assistance to have it taught in conjunction with elementary physics. That is, geometry *and* other natural facts."

34. *Dr. J. Larmor* states (pp. 69–70) :—

"I believe the methods advocated by Professor Perry are in the main the right ones for beginners, and are in fact the methods actually followed or aimed at by most reflecting people who have to do with elementary education whether in school or college." . . . . "I am even of opinion that if there is to be a reform in the methods of elementary instruction, the most promising way to work towards it is through carefully conducted public examinations."

35. *W. N. Shaw* writes (pp. 71–72) :—

"I had reluctantly to allow, year after year, that it is possible to spend years over the study of elementary mathematics, and to pass with credit an examination in Euclid without comprehending the nature of a proof or the elements of scientific method."

"In all seriousness the teaching of mathematics in schools as a part of the general education of the average youth is in my experience a pitiful failure, which results in many cases in the student regarding the subject as merely foreign to his intelligence."

36. *Dr. Sumpner* quotes Mr. Oliver Heavside, with approval and opposes the continuance of Euclid. He expresses himself as follows (pp. 78–79) :—

"As regards the necessity for the reform of geometrical teaching, which has already been alluded to in this discussion, I am largely in sympathy with the view of Oliver Heavside, who has said (*Electro-Mag. Theory*, Vol. I, p. 148) :—

"As to the need of improvement there can be no question whilst the reign of Euclid continues. My own idea of a useful course is to begin with arithmetic, and then, not Euclid, but algebra. Next, not Euclid, but practical geometry, solid as well as plane; not demonstrations but to make acquaintance. Then, not Euclid, but elementary vectors, conjoined with algebra, and applied to geometry. Addition first, then the scalar product. This covers a large ground. When more advanced bring in the vector product. Elementary calculus should go on simultaneously, and come into the vector algebraic geometry after a bit. Euclid might be an extra course for learned men, like Homer. *But Euclid for children is barbarous.*"

37.

[1] The *italics* are not in the original.

37. *W. D. Eggar*, in referring to geometry, says (p. 81) :—

"A course of geometrical drawing to be agreed upon which should replace Euclid II, IV and VI. Books I and III to be taught still, but in conjunction with geometrical drawing. Euclid II.—12, 13, to be transferred to trigonometry, which should begin at an earlier stage."

38. *A. J. Pressland* recommends the discarding of Euclid. He says (p. 82) :—

"*Euclid must be discarded.* In drafting a 'Code Geometry' to replace the latter it might be assumed that some pupils have already had manual training, and that all will take a course of Geometrical Drawing."

39. *Sir Philip Magnus* obviously agrees with much that Professor Perry has said about the abandonment of Euclid. He writes as follows (pp. 84-86) :—

"With what Professor Perry has said about the use of Euclid as a text-book I am in complete accord. . . . . It is difficult to understand the permanence of Euclid's *Elements* as a school text-book. *It is bad geometry and imperfect logic.* Throughout Europe it has been abandoned, and nothing tends more to impede the proper study of Geometry in all our schools than the use of Euclid. Nevertheless, it remains. *As a discipline, or training in logic, Euclid is defective ;* for not only is the reasoning faulty, but it is not the kind of reasoning used in sifting evidence and drawing conclusions in the affairs of ordinary life. When we are asked, '*What book shall we substitute for Euclid?*' *the answer is,* '*None.*' Geometry must be taught like any other branch of science without the necessary reference to any particular text-book, and it must be taught practically. It is to be hoped that Professor Perry's renewed protest against the use of Euclid may be heard in our schools and class-rooms, and above all in our examination halls . . . The teaching of mathematics in many of our schools has got into a groove, and has become a matter of mechanical routine. It neither exercises the mind of the teacher nor of the pupil. There is no subject in which reform of method is more needed, and Professor Perry has rendered a real service to education in directing thought to the subject."

40. *Professor D. E. Smith*, in referring to Professor Perry's argument that Euclid should be abandoned, says (p. 90) :—

"Well, why not? She is about the only country left that uses it, and as one looks at the mathematics of the world since Newton's time he certainly cannot feel that the results of England's use of Euclid have been such as to render the monopoly necessary."

41. *Professor Horace Lamb* says (pp. 91–92) :—

"A good text-book to replace Euclid is much wanted ; but it should be issued with some authority, and Cambridge is practically the only place that could confer this (!). It should also be revised every five or ten years, so that changes may be introduced gradually. Also it should be Euclidean in method, if not in phraseology. If anything else is attempted, a disastrous muddle will ensue, to be followed after a few years by a reversion to Euclid, as happened once, I think, in Italy."

This notion that Cambridge is the only place that can issue *an authoritative text-book*, and that the English people cannot reform any element of education *recognised* as defective (it is explicitly admitted that Euclid's elements are defective) until Cambridge issues such a text-book, explains why it is difficult to secure reform in England, even when the need of reform is fully admitted.

42. *Professor Perry*, in reply criticises very severely English education. He says (pp. 93–101) :—

"The average Englishman hates school education, because every specimen of it that he has seen offends his common-sense. And Oxford hates all ideas of education through mathematics and natural science, because what she has seen in that way everywhere has been offensive to her common-sense."

"It will be found that my syllabus contains almost all the new suggestions which were made by speakers who had no time to study it. (1) Experimental geometry to precede demonstrative. (2) Some deductive reasoning to accompany experimental geometry. (3) Mathematics to enter into the experimental science syllabus as much as possible. (4) Rough guessing at lengths, weights, etc., to be encouraged. (5) Recognition of the incompleteness of any external examination. (6) The importance of familiarising a boy with problems in three-dimensional space. (7) A hard and fast syllabus undesirable ; even the sequence of subjects to be left to a good teacher's initiative. If my critics will consult the new syllabus in Practical Geometry, of the Board of Education, they will see that a very great reform has been effected in this subject, and that it is no longer a mere collection of rules ; it is now really an educational subject allowing a student to let his mind and imagination develope in several of many directions, and bringing him into contact with many subjects through the common-sense application of a very few general principles."

"Take it that we are all agreed upon the following points :—

1. Experimental methods in Mensuration and Geometry ought to precede demonstrative geometry, but even in the earliest stages some deductive reasoning ought to be introduced.
2. The experimental methods adopted may greatly be left to the judgment of the teacher ; they may include all those mentioned in the Elementary Syllabus which I presented."

Professor Perry's work has undoubtedly brought to a focus the long endeavour to secure a thorough and much needed reform in English mathematical teaching, and that reform has now taken still more definite shape in the report of the British Association meeting in 1902, a document the importance of which demands that it be quoted in full as hereunder :—

43. *The Belfast Report on teaching of Geometry, etc.*—At the Belfast meeting in September last year of the *British Association for the Advancement of Science*, a report on the teaching of elementary mathematics was presented by the Committeee, specially appointed for that purpose, consisting of Professor Forsyth (Chairman), Professor Perry (Secretary), Professor Chrystal, Mr. W. D. Eggar, Mr. H. W. Eve,

Professor

Professor Gibson, Dr. Gladstone, Professor Greenhill, Professor R. A. Gregory, Professor Henrici, Professor Hudson, Dr. Larmor, Professor A. Lodge, Sir O. Lodge, Professor Love, Major Macmahon, Professor Minchin, Sir A. W. Rücker, Mr. Robert Russell, and Professor S. P. Thompson. That report, only just published, expresses the most recent English view as to the best methods of teaching mathematics and especially geometry, and is therefore given in full. Two schedules have been suggested, one on Euclidean lines, and the other a programme intended to accompany a general course on Arithmetic, Algebra, and Experimental Science. The first is by Mr. Eggar and the second by Professor Perry. These are also given in full.

44. *The Committee's Report*—The following is the Committee's Report:—

"In submitting the present report, the Committee desire to point out that this is not the first occasion on which the British Association has attempted to deal with the teaching of elementary mathematics. About thirty years ago a similar body was appointed to consider part of the subject, viz., 'the possibility of improving the methods of instruction in elementary geometry'; and two reports were presented, one at the Bradford meeting in 1873 (see the Report, volume for that year, p. 459), and the other at the Glasgow meeting in 1876 (see the Report, volume for that year, p. 8)."

"The two reports advert to some of the difficulties that obstruct improvements in the teaching of geometry. One of these is alleged to be 'the necessity of one fixed and definite standard for examination purposes'; apparently it was assumed that this fixed and definite standard should not merely be required from all candidates in any one examination, but also be applied to all examinations throughout the country. In order to secure the uniformity thus postulated, the Committee, thinking that no text-book had been produced fit to succeed Euclid in the position of authority, and deeming it improbable that such a book could be produced by the joint action of selected individuals, suggested the publication of an authorised syllabus. In their second report they discussed the merits of a particular syllabus, that of the Association for the Improvement of Geometrical Teaching; but, in spite of such commendation as was then expressed, the syllabus has not been generally adopted."

"It is still true that (in the words of the former Committee) 'in this country at present teaching is guided largely by the requirements of examinations.' For some time to come the practice of the country is not unlikely to allow examinations to retain at least a partial domination over teaching in schools. Accordingly, if the teaching is to be improved, it seems to be a preliminary requisite that examinations should be modified; and, where it is possible, these modifications in the examinations should leave greater freedom to the teacher, and give him more assistance than at present."

"On the other hand, there is a tendency in this country whereby, in such matters as teaching and examination, the changes adopted are only gradually effected, and progress comes only by slow degrees. Accordingly, the general recommendations submitted in this report are such that they can be introduced easily and without any great alteration of the best present practice. It is the hope of the Committee that the recommendations, if adopted, will constitute merely the first stage in a gradual improvement both of teaching and of examinations. For the most part only broad lines of change are suggested; this has been done in order to leave as much freedom as possible to teachers for the development of their methods in the light of their experience."

"*Is Uniformity Imperative?*—The Committee do not consider that a single method of teaching mathematics should be imposed uniformly upon all classes of students, for the only variations then possible would be limited by the individuality of the teacher. In their opinion, different methods may be adopted for various classes of students, according to the needs of the students, and corresponding types of examination should be used."

"It is generally, if not universally, conceded that a proper training in mathematics is an important part of a liberal education. The value of the training depends upon the comprehension of the aims of the mathematical subjects chosen, upon the grasp of the fundamental notions involved, and upon the attention paid to the logical sequence of the arguments. On the other hand, it is freely claimed that in the training of students for technical aims, such as the profession of engineering, a knowledge of results and a facility in using them are more important than familiarity with the mathematical processes by which the results are established with rigid precision. This divergence of needs belongs, however, to a later stage in the training of students. In the earliest stages, when the elements of mathematics are being acquired, the processes adopted can be substantially the same for all students, and many of the following recommendations are directed towards the improvement of those processes."

"*Teaching of Practical Geometry.*—The former Committee recommended (and the present Committee desire to emphasise the recommendation) that the teaching of demonstrative geometry should be preceded by the teaching of practical and experimental geometry, together with a considerable amount of accurate drawing and measurement. This practice should be adopted, whether Euclid be retained or be replaced by some authorised text-book or syllabus, or if no authority for demonstrative geometry be retained."

"Simple instruments and experimental methods should be employed exclusively in the earliest stages, until the learner has become familiarised with some of the notions of geometry and some of the properties of geometrical figures, plane and solid. Easy deductive reasoning should be introduced as soon as possible, and thereafter the two processes should be employed side by side, because practical geometry can be made an illuminating and interesting supplement to the reasoned results obtained in demonstrative geometry. It is desirable that the range of the practical course and the experimental methods adopted should be left in large measure to the judgment of the teacher; and two schedules of suggestions, intended for different classes of students, have been submitted to the Committee by Mr. Eggar and Professor Perry respectively, and are added as an Appendix to this Report."

"*Should there be a single authority in Geometry?*—In the opinion of the Committee it is not necessary that one (and only one) text-book should be placed in the position of authority in demonstrative geometry; nor is it necessary that there should be a single syllabus in control of all examinations. Each large examining body might propound its own syllabus, in the construction of which regard would be paid to the average requirements of the examinees."

"Thus an examining body might retain Euclid to the extent of requiring his logical order. But when the retention of that order is enforced, it is undesirable that Euclid's method of treatment should always be adopted; thus the use of hypothetical constructions should be permitted. It is equally undesirable to insist upon Euclid's order in the subject-matter; thus a large part of the contents of Books III and V could be studied before the student comes to the consideration of the greater part of Book II."

"In

"In every case the details of any syllabus should not be made too precise. It is preferable to leave as much freedom as possible, consistently with the range to be covered; for in that way the individuality of the teacher can have its most useful scope. It is the competent teacher, not the examining body, who best can find out what sequence is most suited educationally to the particular class that has to be taught."

"A suggestion has been made that some Central Board might be instituted to exercise control over the modifications made from time to time in every syllabus issued by an examining body. It is not inconceivable that such a Board might prove useful in helping to avoid the logical chaos occasionally characteristic of the subject known as Geometrical Conics. But there is reason to doubt whether the authority of any such Central Board would be generally recognised."

"Opinions differ as to whether arithmetical notions should be introduced into demonstrative geometry, and whether algebraic methods should be used as substitutes for some of the cumbrous formal proofs of propositions such as those in the Second Book of Euclid: for opinions differ as to the value of strictly demonstrative geometry, both for training and for knowledge. Those teachers who do not regard algebraic methods as proper substitutes for geometrical methods might still use them, as well as arithmetical notions, for the purpose of illustrating a proposition or explaining its wider significance. It is the general opinion of the Committee that some association of arithmetic and algebra with geometry is desirable in all cases where this may be found possible; the extent to which it may be practised will depend largely upon the individual temperament of the teacher."

"Every method of teaching demonstrative geometry has to face the difficulties inevitably associated with any complete and rigorous theory of proportion. In the opinion of the Committee, not merely is Euclid's doctrine of proportion unsuited for inclusion in elementary work, but it belongs to the class of what may be called university subjects. The Committee consider that the notion of proportion to be adopted in a school course should be based upon a combination of algebraical processes with the methods of practical geometry."

"*Examinations in Geometry.*—As regards examinations in geometry, the Committee consider that substantial changes in much of the present practice are desirable. In most, if not in all, of the branches of mathematics, and especially in geometry, the examinations ought to be arranged so that no candidate should be allowed to pass unless he gives evidence of some power to deal with questions not included in the text-book adopted. Such questions might comprise riders of the customary type, arithmetical and algebraical illustrations and verifications, and practical examples in accurate drawing and measurement. The Committee consider the latter of particular importance when the range is of an elementary character; some influence will be exercised upon the teaching, and some recognition will be given to the course of practical geometry that should be pursued in the earlier stages."

"*Arithmetic and Algebra.*—The Committee are of opinion that in the processes and explanations belonging to the early stages of these subjects, constant appeal should be made to concrete illustrations."

"In regard to arithmetic, the Committee desire to point out what has been pointed out so often before, that, if the decimal system of weights and measures were adopted in this country, a vast amount of what is now the subject-matter of teaching and of examination could be omitted as being then useless for any purpose. The economy in time, and the advantage in point of simplification, would be of the greatest importance. But such a change does not seem likely to be adopted at present; and the Committee confine themselves to making certain suggestions affecting the present practice. They desire, however, to urge that teachers and examiners alike should deal with only those tables of weights and measures which are the simplest and of most frequent practical use."

"In formal arithmetic, the elaborate manipulation of vulgar fractions should be avoided, both in teaching and in examinations; too many of the questions that appear in examination papers are tests rather of mechanical facility than of clear thinking or of knowledge. The ideas of ratio and proportion should be developed concurrently with the use of vulgar fractions. Decimals should be introduced at an early stage, soon after the notion of fractions has been grasped. Methods of calculation, accurate only to specified significant figures, and, in particular, the practice of contracted methods, should be encouraged. The use of tables of simple functions should be begun as soon as the student is capable of understanding the general nature of the functions tabulated; for example, the use of logarithms in numerical calculation may be begun as soon as the fundamental law of indices is known."

"In regard to the early stages of algebra, the modifications (both in teaching and in the examinations) which are deemed desirable by the Committee are of a general character."

"At first, the formulæ should be built on a purely arithmetical foundation, and their significance would often be exhibited by showing how they include whole classes of arithmetical results. Throughout the early stages, formulæ and results should frequently be tested by arithmetical applications. The arithmetical basis of algebra could be illustrated for beginners by the frequent use of graphs; and the practice of graphical processes in such cases can give a significance to algebraical formulæ that would not otherwise be obtained easily in early stages of the subject."

"In passing to new ideas only the simplest instances should be used at first, frequent reference still being made to arithmetical illustrations. Advance should be made by means of essential development, avoiding the useless complications of merely formal difficulties which serve no other purpose than that of puzzling candidates in examinations. Many of the artificial combinations of difficulties could be omitted entirely; the discussion of such as may be necessary should be postponed from the earlier stages. Teachers and examiners alike should avoid matters such as curious combinations of brackets; extravagantly complicated algebraic expressions, particularly fractions; resolutions of elaborate expressions into factors; artificially difficult combinations of indices; ingeniously manipulated equations; and the like. They have no intrinsic value or importance: it is only the mutual rivalry between some writers of text-books and some examiners that is responsible for the consideration which has been conceded to such topics."

"*General Remarks.*—If general simplification, either on these or on other lines, be adopted, particularly if graphical methods are freely used, it will be found possible to introduce, quite naturally and much earlier than is now the case, some of the leading ideas in a few subjects that usually are regarded as more advanced. Thus the foundations of trigonometry can be laid in connection with the practical geometry of the subject-matter of the Sixth Book of Euclid. The general idea of co-ordinate geometry can be made familiar by the use of graphs; and many of the notions underlying the methods of the infinitesimal calculus can similarly be given to comparatively youthful students long before the formal study of the calculus is begun."

45. *Mr. Eggar's Programme for Experimental Geometry.*—The following is the scheme submitted by Mr. Eggar for teaching geometry practically on Euclidean lines :—

"Accurate measurements of lines, angles, areas, and (if possible) volumes should precede any formal definitions. The following suggestions are intended for the earliest stages."

"*Instruments.*—Hard pencil, compasses, dividers, straight-edge graduated in inches and tenths, and in centimetres and millimetres ; protractor (if rectangular, its connection with the division of the circle should be carefully pointed out) ; set-squares (45° and 60°) : notebook of squared paper ; tracing paper ; scissors and loose paper for cutting out and folding."

"It is important that careful draftsmanship and the use of properly adjusted instruments should be insisted on. All constructions should be drawn in fine pencil lines. Inaccurate work, or work done with soft or blunt pencils, should receive very little credit."

"*Processes.*—Test of a straight line ; intersection of two lines ; notion (not definition) of a point ; measurement of a length ; estimation of the second place of decimals of inches or centimetres ; use of set-squares for drawing parallel lines ; construction and measurement of angles from 0° to 360° by the use of a protractor ; limits of error in setting off angles ; test of a right angle ; test for accuracy of set-squares ; their use in drawing perpendiculars."

"The drawing of parallels and perpendiculars by the aid of compasses ; the bisection of angles and straight lines ; construction of triangles from given dimensions ; the fundamental properties of triangles verified and illustrated by drawing ; similar triangles ; the division of lines into equal parts and into parts in given proportion ; test of equality of angles by the superposition of the angles of similar (not equal) triangles by means of tracing-paper."

"The construction of rectangles, parallelograms ; and quadrilaterals, from adequate data ; notion of a tangent line ; construction of tangents to circles, using drawing-office methods ; notion of a locus ; construction of circles satisfying given conditions ; verification of the properties of circles."

"Measurement of area ; use of squared paper ; area of an irregular figure found by counting the number of squares."

"Illustrations and propositions relating to the areas of squares, rectangles, parallelograms, and triangles. Calculation of these areas from given dimensions (*e.g.*, base and altitude), and verification by squared paper."

"The length of the circumference of a circle determined experimentally (*e.g.*, by rolling a coin with an ink mark on its rim down an inclined sheet of paper, or by wrapping a strip of paper tightly round a cylinder, pricking the paper where it overlaps, unwrapping and measuring the distance between the two marks) ; the area of a circle determined by squared paper."

"The area of a rectangular sheet of paper can be calculated from measurements in inches and in centimetres, and hence the number of square centimetres in a square inch can be obtained by division. To how many places of decimals may the result be regarded as accurate?"

Construction of paper models of solids to illustrate the notions of surface and volume."

"Measurement of volume should be illustrated by cubical bricks. Cubes of 1 inch and 1 centimetre can be obtained cheaply. Volumes of rectangular solids, prisms, cylinders, and cones should be measured where possible, and the results verified by displacement of water if access to a physics laboratory is to be had. Measurements of area and volume form a useful introduction to the notion of an algebraic formula."

"As a pupil advances in elementary algebra, geometrical illustrations may be employed with advantage. *e.g.*, the verification with squared paper of the formulæ corresponding to the propositions of Euclid, Book II., graphs, the solution of quadratic equations with ruler and compasses."

46. *Professor Perry's Programme.* Professor Perry's programme as previously stated is intended to constitute a part of a course on arithmetic, algebra, and experimental science, and is as follows :—

"Practice in decimals, using scales for measuring such distances as 3·22 inches, or 12·5 centimetres."

"Contracted and approximate methods of multiplying and dividing numbers ; using rough checks in arithmetical work ; evaluating formulæ."

"*Mensuration.*—Testing experimentally the rule for the length of the circumference of a circle, using strings or a tape measure round cylinders, or by rolling a disc or sphere, or in other ways ; inventing methods of measuring approximately the length of curves ; testing the rules for the areas of a triangle, rectangle, parallelogram, circle, ellipse, surface of cylinder, surface of cone, &c., using scales and squared paper ; propositions in Euclid relating to areas tested by squared paper, also by arithmetical work on actual measurements ; the determination of the areas of an irregular plane figure (1) by using Simpson's or other well-known rules for the case where a number equidistant ordinates or widths are given ; (2) by the use of squared paper when equidistant ordinates are not given, finding such ordinates ; (3) weighing a piece of cardboard and comparing with the weight of a square piece ; (4) counting squares on squared paper to verify rules. Rules for volumes of prisms, cylinders, cones, spheres, and rings, verified by actual experiment ; for example, by filling vessels with water, or by weighing objects of these shapes made of material of known density, or by allowing such objects to cause water to overflow from a vessel."

"The determination of the volume of an irregular solid by each of the three methods for an irregular area, the process being first to obtain an irregular plane figure in which the varying ordinates or widths represent the varying cross-sections of the solid ; volumes of frustra of pyramids and cones ; computation of weights from volumes when densities are given."

"Stating a mensuration rule as an algebraic formula. In such a formula any one of the quantities may be the unknown one, the others being known. Numerical exercises in mensuration. The experimental work in this subject ought to be taken up in connection with practice in weighing and measuring generally, finding specific gravities, illustrations of the principle of Archimedes, the displacement of floating bodies, and other elementary scientific work. A good teacher will not overdo this experimental work ; he will preserve a proper balance between experimental work, didactic teaching, and numerical exercise work."

"*Use*

"*Use of Squared Paper.*—The use of squared paper by merchants and others to show at a glance the rise and fall of prices, of temperature, of the tide, etc. The use of squared paper should be illustrated by the working of many kinds of exercises, but it should be pointed out that there is a general idea underlying them all." The following may be mentioned :—

"Plotting of statistics of any kind whatsoever of general or special interest; what such curves teach; rates of increase."

"Interpolation, or the finding of probable intermediate values: probable errors of observation; forming complete price-lists by manufacturers; finding an average value; areas and volumes as explained above."

"The plotting of simple graphs; determination of maximum and minimum values; the solution of equations. Very clear notions of what we mean by the roots of equations may be obtained by the use of squared paper."

"Determination of laws which exist between observed quantities, especially of linear laws."

"Corrections for errors of observation when the plotted quantities are the results of experiment."

"*Geometry.*—A knowledge of the properties of straight lines, parallel lines, right angles, and angles of 30°, 45°, and 60°, obtained by using and testing straight-edges and squares; dividing lines into parts in given proportions, and other experimental illustrations of the Sixth Book of Euclid; the definitions of the sine, cosine, and tangent of an angle, and the determination of their values by graphical methods; setting out of angles by means of a protractor, when they are given in degrees or radians, also (for acute angles) by construction when the value of the sine, cosine, or tangent is given; use of tables of sines, cosines, and tangents; the solution of a right-angles triangle by calculation and by drawing to scale; the construction of any triangle from given data; determination of the area of a triangle. The more important propositions of Euclid may be illustrated by actual drawing. If the proposition is about angles, these may be measured in degrees by means of a protractor, or by the use of a table of chords; if it refers to the equality of lines, areas, or ratios, lengths may be measured by a decimal scale, and the necessary calculations made arithmetically. This combination of drawing and arithmetical calculation may be freely used to illustrate the truth of a proposition. A good teacher will occasionally introduce demonstrative proof as well as mere measurement."

"Defining the position of a point in space by its distances from three co-ordinate planes. What is meant by the projection of a point, line, or a plane figure, on a plane? Simple models may be constructed by the student to illustrate the projections of points, lines, and planes."

"The distinction between a scalar quantity and a vector quantity addition and subtraction of vectors; experimental illustrations, such as the verification by the student himself of the triangle and polygon of forces, using strings, pulleys and weights."

47. *Conclusion of Part* 1.—What has preceded will perhaps give a sufficient idea of the vivid recognition of the need of radical reform in the teaching not only of geometry but also of mathematics generally. Our own English system is greatly hampering us in competition with the people of other lands, and in view of the fact that mathematics and its applications are becoming increasingly significant in the industrial, commercial, and scientific life of the world, it will be well for us to treat reform in geometry as a question of *urgency*. In the next part this path of reform will be outlined.

CHAPTER XXIII.

(PART 2.)

Reform in the Teaching of Geometry.

[G. H. KNIBBS.]

48. *Introduction as to Reform.*—In considering the urgent necessity for reform, two features are at once suggested as prominent, viz :—

(1) The scope of geometry.
(2) The methodology of its teaching.

These can be considered in general and in detail. We consider the matter first from its general standpoint.

49. *The Scope of Geometry.*—When the reading of Euclid's elements is completely abandoned as a means of becoming acquainted with elementary geometry, the way is clear for an enormous yet easy extension of the subject. This may be seen as follows :—

Geometry has been defined as the "Science of Space," a definition open to obvious objections which need not be here discussed. A better definition is *the science of spatial forms.* All objects with which we are acquainted have volume, hence one should commence with *solid forms.* It is easy even for a child to understand that we may confine attention to the *boundary* of a solid object; hence the idea of *surface* arises, and, as a special case, *plane surface*; and from the boundary of a surface the idea of a *line*; and,

as a special case, the *straight line*. Again using the idea of limiting our attention, one may regard the *point* as marking the boundary of a line. These *elementary forms*, viz., solids, surfaces, lines and points, are the subject matter with which geometry has to deal.

The subject has two great divisions :—

(A) The nomenclature of spatial forms, *i.e.*, of solids, surfaces, lines.

(B) The properties of spatial forms, *i.e.*, the quantitative and positional relations that subsist among them.

This division is not absolute, for often a geometrical figure is defined by a property, as when a parabola is said to be the locus of points, the distances of which from a fixed line and a fixed point are equal, or when equidistant straight lines are said to be parallel. It is, nevertheless, radical—inasmuch as the attention may be directed either to the mere description of a geometrical figure, or to the various properties which lie concealed therein.

While it is true that no geometrical relationship is really established by experimental methods since they are subject to physical limitations, it is also true that their concrete representation greatly aids in the acquirement of clear conception as to what is intended to be indicated. Familiarity with a conception, certainly facilitates an examination of what is implicitly contained therein ; and this is why mere nomenclature is, after all, of some importance as a preliminary step even in geometry.

The subject ought, therefore, to be treated (first) in the concrete form, the concepts of the ideal figures with which pure geometry is concerned being derived therefrom. This, however, is a question in the methodology of the subject, a matter to which reference will again be made.

The ordinary method of considering the merest fraction of geometry (Euclid's elements), in the most abstract form, has therefore the great disadvantage, not only of artificially and tediously treating the subject, but also of producing grave misconceptions as to its content. It is far better that the *range of* geometry should be understood, even if only by a mere glance at concrete representations of the type forms, the properties of which have been more or less completely investigated.

The scope of geometry may be understood not only as denoting its range, but also as indicating its *implication* in other sciences, or in the ordinary affairs of life. This also ought to be considered in dealing with the subject. The complete dissociation from all practical application which is characteristic of the classic method of teaching geometry prevents its great utility being perceived, and also prevents the ideal significance of ordinary industrial and other occupations being adequately appreciated ; for all geometers will agree that in resolving practical problems we should accustom the pupil to pass from the concrete case not only to the abstract, but also to recognise the type of case to which this abstract belongs.

50. *Methodology of Geometrical Teaching.*—From what has preceded, it is clear that the ordinary methods of teaching the various branches of geometry, that is, a method based on its analysis and methodical development along given lines, is logical and not pædagogical methodology, and the difference is fundamental. Logical development may be appropriate for shewing very advanced students the line of development of a particular subject, or for reviewing it in its totality as a special field of knowledge, but it is inappropriate for communicating the subject[1].

The only appropriate way, that is, the only way that keeps alive the recognition of the unity of all branches of knowledge, is to develope the subject *throughout its range*, as far as the capacity of the pupils will allow.

"When should the teaching of geometry commence?" may be asked. The answer is : "In the Kindergarten", as has before been said. Secondly, the teaching should be *continuous* from the Kindergarten upward.

But the present system of dissociating arithmetic, algebra, and geometry and drawing, should be completely abandoned. The more intimately these subjects are initially connected the better ; and the connection should be informal. It is better that children should not parcel off the different branches of knowledge, but rather see them all as intimately related.

The above principles may be set forth as follows :—

(1) The teaching of geometry should commence in the Kindergarten.

(2) It should be continuous through all classes.

(3) It should be associated in the early stages with the elementary teaching in arithmetic, algebra, drawing, and any form of manual work.

(4) The special differentiation of the subject should take place gradually.

(5) Its initial stages should be intuitive.

(6) Its next stage should be practical.

(7) Its more developed stage should be mainly demonstrational.

(8) Its highly developed stage should be mainly analytic.

Only the simplest elements of analytic geometry will of course be reached in the Primary School for some time to come, owing to existing limitations in teaching qualifications.

It will be necessary to outline these items somewhat more fully, since so many persons regard the learning of Euclid's elements and learning geometry, as equivalent.

To follow such a course as has been indicated means the *complete abandonment of the reading of Euclid's elements.*—Very little acquaintance with continental mathematics and continental mathematicians, is quite sufficient to shew that their powers have in no way been limited by the abandonment of Euclid's elements as a means of learning geometry. It may also be stated that the reading of French treatises on mathematical subjects is, for those who have any knowledge of that language, one of the best ways of acquiring mathematical knowledge. (*See* Professor Greenhill's testimony.)

Geometry

[1] In English text books, for example, the differential calculus is often developed in one text book, the integral calculus in another, instead of simultaneously. This will conspicuously indicate the type of defect referred to.

Geometry in the Kindergarten.—In the Kindergarten all the teaching should be Froebelian, *i.e.*, intuitive. Here the child is to be awakened to the consciousness of geometrical form and relation, and he learns a few names.

The geometrical forms and relations to be recognised and named are :—

(i) *Geometrical Forms.*—Solid, surface, line, point.

(ii) *Geometrical Relations.*—Large, small; equal, unequal; greater, less; whole, part; contact, separation; touching, crossing.

(iii) *Simplest Geometrical Element and its Relations* (zero dimension).—Point—many, few, number, place or position.

(iv) *Geometrical Elements* (one dimension).—Line—curved, bent, straight; long, short; its ends, points; its position.

(v) *Special cases of lines.*—Straight line, equal lines, oblique lines, perpendicular lines, parallel lines. Ring or circle. (Congruency of circles of equal diameter.)

(vi) *Geometrical Elements* (two dimensions).—Surface—curved, bent, straight; great, small; its edges, lines, position.

(vii) *Special cases of Surfaces.*—Flat or plane surface; oblique surfaces, perpendicular surfaces, parallel surfaces; line on, or oblique or perpendicular to surface. Line parallel to surface. Surface of ball or sphere. Curved line thereon.

(viii) *Geometrical Elements* (three dimensions).—Ball or sphere; cube, its faces plane surfaces; block (rectangular parallepiped), its edges straight lines.

(ix) *Special Forms.*—Equilateral triangle, square, any triangle, any rectangle; circle, circle round triangle (inscribed triangle), circle in triangle, circle round square. Circle in square,

(x) *Special Relations.*—Equalities between lines, surfaces, solids, multiples, or parts of the solids, surfaces, and lines.

(xi) Regularity (symmetry), irregularity (asymmetry).

(xii) Direction, change of place, or position, quick, slow (velocity). Weight: heavy, light (mass).

The last ideas, though not in the common acceptation purely geometrical, may and ought to be fused with geometrical ideas; or, to state it more generally, the elementary conceptions of kinematics and kinetics ought to be incorporated with elementary conceptions of space and its forms.

In the Kindergarten period, almost everything must be sacrificed to *interest*, and success in teaching will depend wholly upon the teacher's power of interesting the children, not in the abstract but concrete form. For example, to illustrate the "solid," a ball, cube, cylinder, anything may be taken, and the *special name* must be first learnt, the name *solid*, afterwards. And while the name is important, it is not absolutely essential, and, if not easily learnt, the absence of a *name* will not wholly prevent the child perceiving geometrical *facts*.

All children appear to like colour; the use of colours in connection with their geometry is thus desirable, not only to teach colour but also to intensify interest.

Again, the Froebelian gifts will lend themselves readily to geometrical teaching, and are useful aids thereto. Children are taken with pretty forms also, and in stick-laying, etc., it is easy to get in some geometrical instruction. The properly-educated and trained Kindergarten teacher will have no difficulty, either, in acquainting himself or herself with the necessary geometry, or in teaching it according to Kindergarten methods.

52. *Geometry in the Primary School.*—In the lower Primary School the great body of the geometrical teaching should be intuitive and practical, the demonstrational part being simple. It will, however, not be difficult to carry the demonstration as far as is done by Henrici in his little treatise, before referred to, on congruency, symmetry, etc.

In the higher Primary School demonstrational work of a serious nature can well be undertaken, graphics and projective geometry seriously treated, and the difficulties at present found, arising from ignorance of conceptions or lack of interest, will in all probability be wholly absent under the reformed system of teaching. Drawing should play throughout a conspicuous part in the teaching, a matter which will be more fully explained in the next section.

53. *Practical Geometry and Geometrical Drawing.*—Practical geometry and geometrical drawing are subjects which can be treated simultaneously; they have obviously much in common. The work could be commenced in the kindergarten. For example, it might well start with geometrical exercises in paper-folding, the following series of exercises giving a suggestion as to procedure :—

Geometrical Exercises in Paper-folding :—

(i) Formation of straight and parallel lines by the folding of paper.

(ii) Right angles (the cardinal points), square, rectangle, etc.

(iii) Angles of 45°, 22½° etc. (the eight wind directions), lozenge, parallelogram, etc., of 135°, 45°, etc., (rhombus).

(iv) Angles of 60°, 30°, 15°, etc., by folding. Equilateral triangle, hexagon, etc.

(v) Division of any line into 2, 4, 8, etc., parts, and into 3, 6, 12 parts, etc.

(vi) Division of any angle into 2, 4, 8, etc., parts, and into 3, 6, 12 parts, etc.

(vii) Set of parallel lines, and multiplication of any particular angle.

These are a few of many similar exercises that can be provided. They are thus far restricted to linear and plane geometry, but can readily be extended to include exercises in solid geometry. With, of course, a little cutting, the following forms can be readily produced :—

(viii) Cube, tetrahedron, octahedron, some simple regular crystalline forms.

Practical

Practical geometrical exercises using ruler, scale, and "compass" (for drawing circles) would appropriately follow the geometrical paper-folding exercises. These might be developed somewhat as follows :—

Exercises in Practical Geometry :—

(i) Direct subdivision of any line with and without scale into given number of parts.

(ii) Drawing of perpendiculars from point within or without a line with set-square, with compass, and with scale only. *Locus* of vertices of right-angled triangles on a line as hypotenuse, (a semicircle.)

(iii) Drawing of parallel lines with compass, and with scale only.

(iv) Bisection of angle, when vertex is visible, and when vertex lies beyond the paper. Division of angle into 4, 8, etc., parts.

(v) Construction of any triangle, of regular polygons, of 2, 4, 8, etc., sides : 3, 6, 12 etc., sides

(vi) Various exercises dependent on the preceding. Ornamental and architectural forms, tessellated, and rose patterns, etc. The preceding exercises might appropriately be followed by intuitive proofs of certain propositions, for example :—

(viii) Shew *intuitively* that the square on hypotenuse of *isosceles* right-angled triangle is equal to sum of the squares on the other two sides.

(viii) Shew *intuitively* that parallelograms on equal bases and of equal vertical height are equals (by superimposing the parallelograms and cutting off a piece from one of the parallelograms and adding to the opposite side so as to make the figures identical.

(ix) Shew *intuitively* that triangles are half of parallelograms (by dividing along the diagonal).

(x) Drawing right angled triangles with all their sides whole units[1], and then with the base and perpendicular any whole units. Test arithmetically the theorem of Pythagoras.

(xi) By construction divide line so that square on one part is equal to rectangle on whole and other part ; test arithmetically.

(xii) Construct triangle with angles at base double of third angle (Euclid, IV, 10) ; test the drawing by way of verification.

These exercises could be given a concrete form, as well as an abstract form.

The course could then be followed by exercises on the circle. For example :—

(xiii) Given a circle to find its centre.

(xiv) Describe circle under different conditions : (*a*) Circle in triangle ; (*b*) through three points ; (*c*) through two points and touching line ; (*d*) to touch line at given point, and pass through point ; (*e*) to touch two lines, one at a given point ; (*f*) to touch two lines and pass through any point between them ; (*g*) to touch three lines ; (*h*) to touch lines and circles under various conditions ; (*i*) to touch circles only ; (*j*) to describe an arc of circle without finding centre ; (*k*) describe circle to contain any angle.

(xv) Attempt to measure ratio of circumference to diameter of circle directly.

(xvi) Area of circle by means of squared paper. Find π from this.

(xvii) Exercises in use of protractor, and in making a protractor.

Euclid's Elements introduce no conic section but the circle. It is very desirable, however, that children should be early introduced to other curves than the circle, and to non-Euclidean constructions. For example :—

(xviii) Through a given point to draw a straight line the intercept of which between two given lines shall be a given length.

(xix) Trisect any angle.

(xx) Find point on circle so that the sum of the distances to two points without shall be as great or as small as possible,

and similar questions. This will subsequently awaken in the pupil a recogition of the limits imposed on Euclidean geometry by its postulates.

The conic sections are practically very important, particularly the ellipse and parabola. Hence the geometrical drawing should embrace :—

(xxi) Various modes of describing the ellipse ; finding focal points, etc.

(xxii) Similarly in regard to parabola.

(xxiii) The equilateral hyperbola ; any hyperbola. The limiting relations between the hyperbola, parabola, and ellipse might be lightly touched upon.

As soon as elementary algebra is studied, the representing of an algebraic expression by means of a curve ought to be undertaken, arithmetical calculation and squared paper being used. This would be of the nature of an elementary lesson in "curve-tracing."

In the higher Primary Schools the above could be extended to the drawing of all the curves, the work being kept as simple as possible. The exercises could then be somewhat as follows :—

(xxiv) The logarithmic curve and curve of sines.

(xxv) Simple cases of evolutes, involutes, circles of curvature.

(xxvi) Cycloids, prolate, common, curtate, epicycloid, hypotrochoid.

(xxvii) Spiral of Archimedes, hyperbolic spiral, the lituus, the logarithmic spiral.

(xxviii) The Cassinian ovals, lemniscate, etc.

(xxix) The cissoid and conchoid.

(xxx) Catenary, tractory, etc.

(xxxi) Limaçon, cardioid.

(xxxii) Cartesian ovals.

xxxiii) The Versiera, quadratrix, etc.

xxxiv) Curve of pursuit, etc.

(xxxv) Dipolar and magnetic curves.

(xxxvi) Mechanical contrivances in drawing curves.

(xxxvii) Mechanical contrivances for reducing and enlarging figures. The

[1] The following say :—3, 4, 5 : 5, 12, 13 : 7, 24, 25 : 8, 15, 17 : 20, 21, 29, etc.

The beauty of many of these forms make their drawing of æsthetic value, and they are therefore also of practical value technically. The theory should throughout be intuitive and be illustrated by models, as far as possible. It is very desirable that children should be familiarised with at least the names of forms other than those occurring in Euclid's Elements.

In solid geometry it would be sufficient to have models of the conicoids, *i.e.*, the ellipsoid, hyperboloid of one and two sheets, elliptic and hyperbolic paraboloids, etc. It is also desirable to shew by a model the properties of curves of double curvature. Actual geometrical drawing could hardly be carried this far in primary schools.

It should not be forgotten that the development of geometry on the preceding lines can be made far more interesting and altogether easier than learning the books of Euclid; and however superficial the knowledge coming in this way be, the conception of the scope of geometry will be more in keeping with the subject, and ultimately greater breadth of geometrical knowledge and greater mathematical power will result.

54. *Demonstrational Geometry.*—Euclid's Elements ought to be completely abandoned except as an illustration of early methods of teaching geometry. In its place such a geometry as Henrici's might well be put, or translations of the continental geometries used. The habit of depending upon particular text-books ought however to be discarded, and the subject studied on liberal lines.

The course in practical geometry, and the geometrical forms with which the pupil has become practically acquainted, will make the study much easier than under the present tedious system. As said by Professer Henrici, "Geometrical drawing belongs in fact to a branch of geometry of which Euclid knew nothing (little?) and where Euclid's propositions are of little use."

The aim of a suitable geometry would be:—

(a) To enable the pupil to realise the truth of geometrical relationships in their generality and as far as possible by mental or physical inspection of the figures, instead of by following a long process of reasoning.

(b) To make the proofs of each proposition, as far as possible, self-contained by introducing such general conceptions as congruency, axial and central symmetry, and by using hypothetical constructions.[1]

(c) To make the truth of propositions obvious by bringing figures into positions of symmetry. (This may be regarded as the analogue of bringing figures into perspective position in projective geometry.)

(d) To illustrate the two ways, each reciprocal to the other, in which figures can be brought into such positions of symmetry, thus revealing the important principle of duality.[2]

The whole geometrical truth embodied in Euclid's books may be learnt in a very short period by bandoning his method and following the above suggestions.

It may here be remarked that as soon as demonstrational geometry is systematically studied, it is well to introduce at once, what the concrete preparation has qualified the pupils to receive, viz., the conception of the *ideality* of the forms, with which *pure geometry* deals. Thus the circle of pure geometry is not actually the circle of geometrical drawing, though the latter may serve to *represent* it crudely. Not only should the conception be reawakened of forms of one dimension constituting the boundary of forms of a higher dimension (*e.g.*, surface as the boundary of solid, line as that of surface, and point as that of line), but also the forms of one dimension being *generated* by the motion of forms of a lower dimension. Thus it can be explained that the track, trace, or *path* of a *point* moving out of its position, is a *line*; the path of a moving line, except it move along itself, is a *surface*, and similarly the path of a surface, with the same limitation, is a *solid*.[3]

It may be further remarked that Euclid does not deal with *negative* geometrical forms. In geometry, negative may be understood in two senses, viz., that which implies a deficiency which can be made good only by the addition of a positive quantity, or it may imply merely change of "sense," *i.e.*, of the direction of a line or of its rotation in generating an angle. This difference should be explained in reference to lines, angles, areas, etc. The idea of defect, requiring the addition of an equal positive quantity to produce a zero result, should also be carefully introduced and explained, the difference between the two being briefly indicated. The representation of negative quantities by *position* in some cases will lead to no error, in other cases it may and has led to extraordinary errors of reasoning. 55.

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[1] Examples (*a*). If the third angle of an isosceles triangle be supposed bisected, it is *obvious* from symmetry without other proof that the angles at the base are equal, or Proposition IV., *may be regarded as* proving it. Really oppositely symmetrical figures are *assumed* by Euclid to be susceptible of inversion, and his argument in Proposition IV. in strictness fails. (*b*) Let A, B be two points outside any circle. Suppose an ellipse described with these points as foci and *touching* the convex side of the circle at C. It is *obvious* that AC + CB is a minimum distance without any other proof, that is to say no other point C can be taken on the circle which will make AC + CB as small.

[2] The principles of reciprocity, duality, etc., may be illustrated by the following definitions, etc., from Henrici's geometry (see pp. 37, 91–2, 96).

Two points have a line in common; or, the join of two points is a line.

Axial Symmetry.—Definition: If two figures in the same plane can be made to coincide by turning the one about a fixed line in the plane through an angle of continuation, the two figures are said to be symmetrical with regard to that line as *Axis of Symmetry*. If the two figures are halves of one figure the whole figure is said to be symmetrical with regard to the axis, and this axis is said to be an *Axis of Symmetry*, or simply an *Axis* of the figure.

Every line perpendicular to the axis corresponds to itself, and cuts corresponding lines in corresponding points.

Two lines have a point in common; or the join in two lines is a point.

Central Symmetry.—Definition: If two figures in the same plane can be made to coincide by turning the one about a fixed point in that plane through an angle of continuation, the two figures are said to be symmetrical, with regard to that point as *Centre of Symmetry*. If the two figures are halves of one figure, the whole figure is said to be symmetrical with regard to a centre, and this centre is said to be a *Centre of Symmetry* or simply a *Centre* of the figure.

Every line through the centre cuts corresponding lines in corresponding points.

[3] The conception of the motion of a solid moving out of a three-dimensional space into an *imaginary* space of still higher dimension, and of its path *therein*, constituting an imaginary geometrical form in that higher dimension might be simply mentioned, to excite the interest of the few pupils capable of higher abstractions. This can be illustrated by the representation of imaginary quantities in algebra by passing out of the plane of delineation.

55. *Descriptive and Projective Geometry.*—In addition to this elementary geometry, some idea should also be given of the nature of the contributions of Monge,[1] Poncelet,[2] Möbius,[3] Jakob Steiner,[4] von Staudt,[5] Chasles,[6] Cremona,[7] and others. It does not matter how simple the description of their work is made, the simpler the better, it will help to give a grasp of the significance of synthetic geometry. Under the present system English pupils go on with Euclid, with almost absolute unconsciousness of the great developments of modern *geometry, and even enter and leave their universities practically ignorant of geometry*, and often with a feeling of dislike in regard to it.

Models and the simplest exercises in perspective, and then in projective geometry will help to awaken the pupil to the fact that such a field of knowledge exists.

56. *Analytical Geometry.*—As soon as algebra is commenced, simple exercises in the graphical representation of algebraic formulæ are desirable. For example: That $y = a + bx$ represents a straight line, b being tangent of the angle of intersection with the x axis; that $y = a + bx^2$ is a parabola; and so on. As the algebra advances so should the geometry. Circular functions (and in the higher primary schools also elliptic and hyperbolic functions) could be introduced by plotting. The simpler parts of analytical *geometry* would in this way be made easily intelligible.

57. *Trigonometry as Geometry.*—Simple exercises in trigonometrical functions would readily familiarise pupils with them; such exercises, for example, as the calculation arithmetically of the value of sines, tangents, secants, etc., from geometrical constructions and scaling; the construction of triangles from trigonometrical ratios and a side or sides; and other simple exercises of like character.

58. *Surveying as Geometry.*—It will be observed that elementary surveying, including field practice, is taught in France, Switzerland, etc. (see their programmes). The utility of this is undeniable not only in the case of rural populations, but generally. The rendering of geometry practical helps also to make it more interesting. The plane table, a simple measuring tape, a simple circumferenter, level, and clinometer are all that are needed. These instruments are used by continental teachers, and lessons are given in "practical geometry in the field."[8]

59. *Unity of Mathematical Subjects.*—The present dissociation of arithmetic, algebra, trigonometry, and the various forms of geometry ought to be abandoned, and every opportunity taken of illustrating their interconnection. Thus any lesson in any one branch of mathematics ought, whenever it might seem desirable, to introduce elements from any other branch, the matter being always kept within the range of comprehension of the pupil.

60. *Conclusion.*—It will be seen from the preceding that complete reform of geometrical teaching, and in fact the whole range of mathematical teaching, is recognised in England as urgently needed. It is certainly needed here. The conservative clinging to Euclid is greatly hindering us; it not only creates dislike, it also greatly *wastes* the time of children. *Geometry properly taught is not a difficult subject*, its elementary truths can be easily perceived, but they are made difficult and tedious by the present system of teaching, which, as said in Chapter III, section 15, is an example of didactic materialism therein, a system which pays no adequate attention to the capacity of the pupils. The development of geometry in the elements of Euclid is unsuited for teaching, and hinders children from acquiring in a reasonable time a proper amount of geometrical knowledge.[9]

The path of reform has been sufficiently indicated. The conclusions may be briefly expressed as follows:—

(1) As a text-book guiding the method of learning geometry Euclid's Elements should be abandoned.
(2) Geometry should commence in the Kindergarten and proceed continuously.
(3) Geometrical drawing or practical geometry should precede demonstrational.
(4) Demonstrational geometry should be more general, and proofs should as far as possible be self-contained.
(5) Projective and analytic geometry should be introduced as early as possible in an elementary form.
(6) Geometry should be taught in connection with other mathematical subjects.
(7) Trigonometry should not be dissociated therefrom.
(8) Elementary field geometry should be taught (*i.e.*, elementary surveying).

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[1] Géométrie descriptive. Paris, 1795.

[2] Traité des propriétés projectives des figures. Paris, 1822.

[3] Barycentrische Calcul. Leipzig, 1827.

[4] Systematische Entwickelung der Abhängigkeit geometrischer Gestalten von einander. Berlin, 1832.

[5] Geometrie der Lage. Nürnberg, 1847.

[6] Traité de géométrie supérieure. Paris, 1852.

[7] Elements of Projective Geometry, translated by C. Leuesdorf. Oxford, 1885.

[8] These are known as "Exercises d'arpentage" (Exercises in surveying), or when distances are measured telemetrically, as "démonstrations tachymétriques" (demonstrations of telemetry). See p. 56. Rapports du Jury International, Education et enseignement, Paris, 1902, for an illustration of a school having its lesson in "leçon d'arpentage."

[9] The text-book by Mr. Maclardy, the mathematical master in the Training College at Fort-street, Sydney, is a step in the right direction in connection with the study of Euclidean Geometry; and though it in no way represents the curriculum in geometry above advocated, it will be found a very useful volume for anyone taking any interest in the subject.

CHAPTER XXIV.

CHAPTER XXIV.

The Teaching of Geography in Primary Schools.

[G H. KNIBBS.]

1. *Introduction.*—As in the case of most other subjects, the teaching of geography has been widely discussed in Europe. In a monograph by Professor André Oltramare, of Geneva, on Rousseau, in referring to the necessity, in teaching, of abandoning as far as possible mere conventional signs and of dealing directly with realities, he says:—"Rousseau. . . . . Ses disciples ou ses successeurs, Basedow, Pestalozzi, Frœbel, ont enfin réussi à le remplacer par une initiation au savoir, plus rationelle, conforme à l'évolution naturelle de l'esprit qui va du concrét à l'abstrait, du fait particulier à l'idée générale, de la réalite complex aux notions simples par la voie l'analyse."[1] (Rousseau . . . . his disciples, or his successors, Basedow, Pestalozzi, Frœbel, have at last succeeded in replacing it—*i.e.*, the use of conventional signs, words, etc.—by a more rational initiation to knowledge, and one conformed to the natural evolution of the mind, which passes from the concrete to the abstract, from the particular fact to the general idea, from complex reality to simple conceptions, by way of analysis.) This may be said to be the key to modern conceptions of geographical, and also much other, teaching.

It is almost needless to say that the learning of long lists of rivers and their lengths, mountains and their heights, towns and the numbers of their inhabitants, the detailed features of coast lines, etc., is recognised as a misconception of any useful elementary geography, to say nothing of its tedium. Schemes of teaching the subject will be indicated hereinafter.

2. *Geography and its Divisions.*—The subject is a wide one, and touches so many others that it may and has been regarded as an associative subject: that is, one unifying others of very different character, as, for example, history and mathematics, physics, etc., for, obviously, geography has intimate relations with these, as also with many other subjects.

The division of geography into the following sections,[2] viz.: I, Comparative; II, Mathematical; III, Physical; and IV, Political, hardly gives an adequate idea of its subdivisions for teaching purposes. In Chapter XL, section 18, it has been divided into

(*a*) Topographical.	(*c*) Commercial.	(*e*) Physical.
(*b*) Industrial.	(*d*) Political.	(*f*) Mathematical.

Other divisions might easily be suggested, illustrating the fact that it has a dualistic character, touching abstract science on the one hand and the human relationships on the other. The following division will illustrate this:—

GEOGRAPHY.

Scientific side.	*Humanistic side.*
Mathematical.	Historical.
Morphological.	Political.
Topographical.	Commercial and Industrial.
Physical, etc.	Ethnographical, etc.

Other suggestions of division will readily occur. Again, these sections are subject to subdivision, and then it would be found that there is much inter-connection. For example, on the mathematical side, the figure of the earth would be dealt with and the geometry of that subject, and consequently the history of the attempt to ascertain that figure.

Yet, again, the development for teaching purposes must not be the merely logical or analytical. On the contrary, its whole range should be developed simultaneously to whatever extent the capacities of the pupils will permit; so that the above order is not pædagogical at all, and would be wholly unsuited.

A good illustration of this last may be had from Vol. X of the International Education Series.[3]

This treatise, after introducing the subject by reference to its motive, theory, method and difficulties, starts directly on the study of the structure of a river basin and of a continent. The fundamental conception seems to be the significance of the distribution of air, land, and sea, and of the morphology of the two latter for the economy of the life of the world. The following quotation from the introduction to the treatise will give a fair conception of the author's outlook upon the subject:—

> The uses of slopes in the economy of world life may be summed up:
>
> (*a*) The character of joined slopes is the basis for the remembrance of all that has taken place on the land.
> (*b*) The inclined surfaces distribute the soil; physical forces crack off, break, abrade and grind up the solid rock. Under the law of gravitation, the sloping land distributes over its surface the ground-up masses of soil. The upper parts of slopes are the store-houses of soil—material for all the surface below.
> (*c*) The amount of rainfall depends largely upon the height and arrangement of slopes.
> (*d*) The distribution of heat is modified by height.
> (*e*) Drainage depends entirely upon the arrangement of land surfaces in slopes. Water percolating through soil down inclined surfaces gives rise to vegetation, and upon vegetable life animal life depends.
> (*f*) The upraised masses of land determine the coast lines.
>
> A knowledge of structure (pure geography) is the indispensable foundation of all geographical knowledge; without this knowledge the science of geography is impossible.
>
> *The purpose of learning structural geography, it may be repeated, is the acquisition of a concept or mental picture which corresponds to the surface structure of the earth in general outlines and prominent features.* Proceeding deductively, from the highest generalisation downward, a knowledge of structural geography consists of—
>
> (i) *Concept of the whole earth* as a sphere.
> (ii) *Position of the Continents* on the globe and their relations in position to the oceans.
> (iii) *Position of the Oceans* and their relations to the continents and islands. (iv)

[1] Recueil de monographies pédagogiques. Lausanne, 1896, p. 15.
[2] Encyclopædia Britannica, X, 175.
[3] How to Study Geography. Francis W. Parker, New York, 1890.

(iv) *General Structure of the Continents.*—(*a*) Great slopes; (*b*) continental axis; (*c*) land masses; (*d*) secondary axis; (*e*) great rivers basins; (*f*) river systems; (*g*) coast lines.
(v) *Distribution of Heat.*—(*a*) Movements of the earth; (*b*) inclination of axis; (*c*) zones; (*d*) distribution of heat, modified by height.
(vi) *Mathematical Geography.*—Latitude, longitude, time.
(vii) *Ocean Currents.*—(*a*) Cause; (*b*) effects upon atmosphere; (*c*) effects upon distribution of heat.
(viii) *Atmosphere.*—(*a*) Movements; (*b*) causes; (*c*) regular winds; (*d*) distribution of moisture; (*e*) condensation, (*f*) rainfall; (*g*) effect of winds upon distribution of heat.
(ix) Distribution of soil.
(x) Distribution of vegetation.
(xi) Distribution of animals.
(xii) Distribution of races of men.[1]

It is easy to see from the above how extremely interesting the subject can be made, and how much there is in Mr. Parker's view that, in a certain sense, "geography is the open door to all the sciences." Such a proposition is in a measure true of all subjects, the truth being that they are all intimately related, and should, as far as possible, be treated in that light in our schemes of instruction, instead of being severed, as too often they are. This is well expressed in the following passage of Mr. Parker :—

> The day is slowly coming when all the elementary sciences with history and literature will be essential factors in teaching from the beginning to the end of the common school course. Wise and thoughtful teachers will, after due deliberation, drop some of the isolated spelling, technical grammar, and figure reckoning to make room for the direct study of life and the preparation for life. It will be gradually discovered that reading, spelling, grammar, numbers, drawing can be best taught as immediate aids to the study of the thoughts of God in Nature.

3. *Value of Geography.*—The general value of geography is immediately evident from almost any good indication of its subject-matter; and the above clearly shows not only its utilitarian value, which is, of course, obvious, but also its *educative* value. While strong claims have been put forward for the educative function of geography, the precise nature of its service in this respect is very differently understood by different individuals. In 1893, Dr. Finsler, of Berne, argued that in its highest treatment geography should be ancillary to history, and he considered that in the "maturity examination" of the gymnasium all reference to it as a special subject might be dispensed with. This position led to a controversy, in which opposite views were put forward by Dr. Brückner, also of Berne, Professor Rosier, of Geneva, and Dr. Hotz, of Basel.

Dr. Brückner's position may be stated as follows :—He claims that the subject may be so taught as to—

(i) Develope will power.
(ii) Produce reverential feeling.
(iii) Educate the faculty of observation.
(iv) Be practically useful.
(v) Constitute an associating element between various subjects in a curriculum, *e.g.*, history and natural science.
(vi) Render travel more educative.
(vii) Oppose insularity on the one hand, and intensify patriotism on the other.

In the Geographen Kalender,[3] some reference is made to the place and position of geographical instruction, the historical development of school geography, the place of geography among other subjects, the teacher and the teaching of the subject, and its place in the curricula of the schools. Some idea of its position, as compared with other subjects, in German estimation may be had from the following table:—

Subject.	Gymnasium Classes.								
	VI.	V.	IV.	III. L.	III. U.	II. L.	II. U.	I. L.	I. U.
German and Historical Tales ...	3 1	2 1	3	2	2	3	3	3	3
Latin	8	8	8	8	8	7	7	7	7
Greek	...	...	...	...	...	...	6	6	6
History	...	...	2	2	2	2	3	3	3
Geography	2	2	2	1	1	1	...	...	...
Mathematics	4	4	4	3	3	4	4	4	4
Natural Science.....	2	2	2	2	2	2	2	2	2
Total of all subjects	25	25	29	30	30	30	30	30	30

Subject.	Realschule Classes.					
	VI.	V.	IV.	III.	II.	I.
German and Historical Tales	5 1	4 1	5	5	4	4
Geography.....	2	2	2	2	2	2
Total of all subjects.....	25	25	29	30	30	30
	Preparing School for Teachers.			Seminary for Teachers.		
	III.	II.	I.	III.	II.	I.
Geography.....	2	2	2	3	2	1
All subjects	34	37	37	38	38	33–35

The numbers denote the hours devoted to each subject of study. The brackets indicate subjects in which there is considerable geographical teaching of an historical, or mathematical, or other ancillary character. The

[1] *Op. cit.* pp. xxv–xxvii.
[2] 1. Brückner.—Die Stellung der Geographie auf dem Gymnasium. Bern, 1893. 2. Rosier.—L'Enseignement de la géographie dans les Gymnases, et la place de cette Science dans le Programme des Examens de Maturité. Genève, 1893. 3. Hotz.—Der Geographieunterricht am schweizerischen Gymnasium. Aarau, 1893.
[3] Erster Jahrgang, 1903-4. Gotha, Justus Perthes, 1903. Herausgegeben von Dr. Hermann Haack, pp. 157 et seq.

The practical value of geographical knowledge in industrial and commercial developments, and in the defence of one's country, are so obvious as to hardly need statement. And yet is the geography of our own territory yet sufficiently known in these respects? Is there available any adequate maps enabling a teacher to explain the industrial or other activity characteristic of each part of the State?

4. *The Maps of Finland.*—In regard to this last point it may be said that perhaps the best way of understanding our own position in regard to geographical and general topographical information is to compare ourselves with other countries; and for this purpose we may go even as far afield as Finland, about which country the popular idea is very imperfect. Finland published in 1897, in its own capital, Helsingfors, a set of excellent maps,[1] of which the following brief description will give some vague idea. The maps are numbered as hereunder:—

(1) District divisions of the Grand Duchy of Finland.
(2) Heights of the surface, shewn by contour-lines indicating every 50 metres up to 200, then 300, 500, 1,300, tinted so as to give instant idea as to relative height.
(3) A very complete geological map.
(4) Map shewing distribution of clays, sands, evidences of glaciation, moraines, etc.
(5) Map shewing the isothermal lines for each month, and also for the year, based on ten years' observations, 1880–1889.
(6*a*) Map shewing isobars for each season, and also for the whole year.
(6*b*) Maps shewing prevailing directions of wind for each season, and also for the year, for ten different stations.
(7*a*) Series of maps shewing the number of days per year that the temperature rises above 0, 5, 10, 15 degrees centigrade.
(7*b*) Series of maps shewing the range between the highest and lowest temperatures for several seasons, and also for the whole year.
(8) Map illustrating the total fall of snow for eight months of the year.
(9*a*) Maps illustrating the distribution of total fall of snow for years 1890–1, 1891–2, 1892–3, and 1893–4.
(9*b*) Maps with curves shewing the total rainfall for the years 1894, 1895.
(10*a*) Maps illustrating the occurrence of frost in summer.
(10, 11*a*, 11*b*, 12, 13, 14, 15, 16) Statistical maps, etc., of various kinds.
(17) Maps illustrating the population density of different parts of Finland, shewing the number of inhabitants per square kilometre (10 divisions, tinted according to the density of population).
(18) Diagram giving analysis of population statistics.
(19) Map shewing distribution of the Finnish, Sweden, and Russian schools.
(20) Eight small maps illustrating agricultural statistics.
(21) Eight more maps of the same character.
(22) Map shewing the various waterfalls and their energy (horse-power).
(23) Map shewing the distribution of the metal industries and the quarries.
(24) Map shewing the distribution of various other industries.
(25*b*, 25*c*) Diagrams of statistical information concerning exports, imports, and shipping.
(26) Map shewing the lighthouses on the shores of Finland, the arcs of visibility, etc., with drawings of the form of each lighthouse, for purpose of recognition.
(27) Map shewing the roads, railways, and canals of Finland.
(28) Diagram shewing the number of persons and quantity of freight carried on the State Railways.
(29) Map shewing the telegraph and telephone systems of Finland.
(30) Map shewing the post offices and postal system.
(31) Map illustrating ancient discoveries in Finland.
(32*a*) Map shewing political and other boundaries and districts of Finland.
(32*b*) Two ancient maps of Finland (Olaus Magnus, 1539; Andreas Bureus, 1626).

In these maps, the different items of information are so arranged that there is no confusion. This is effected by making the basis a map with black outlines and using colours to enter all other information. As specimens of cartography, such maps are greatly to be preferred. Not only is their appearance greatly enhanced by such treatment; they are also much more convenient to use. The crowding of a large amount of information together on a single map, instead of limiting to certain definite purposes and multiplying the number of maps according to requirements, is open to strong objections.

With the equipment in the way of maps possessed by Finland, geography can be much more realistically and thoroughly taught than is possible with us.

Incidentally it may be noticed that the Swiss maps are also excellent specimens of cartography.

5. *Geography and Defence.*—Reference has already been made to the utility of local geographical knowledge in the matter of defence. *Apropos* of this, the following passages from the address of the President of the Geographical Section of the British Association for the Advancement of Science on 11th September last year may be quoted[2]:—

> For the economic development of the country, it cannot be too strongly urged that a general geographical outline of its surface is indispensable to the selection of lines for special technical examination, whether for roads, railways, canals, or telegraphs. How often lately, in the history of our colonial or frontier progress, have vast sums been expended on special lines of railway in ignorance of the fact that better alignments of infinitely less physical difficulty would have been at once revealed by a general geographical map even on the smallest scale! In short, regulating the progression of public works, the development of commerce, the proper recognition of the frontier boundaries, the administration of justice, and the military control of a large and growing colony, or of a long stretch of military frontier, is to be armed with a perfect summary of what that country contains in the shape of a geographical map; and yet it is only quite lately that this fact has been recognised by English administrators and English generals in their dealings with new colonies and new frontiers. Russia learnt the lesson a generation ago at least. . . . . In our African colonies it has, alas! been discovered a little too late that geographical surveys are a sound preliminary to military operations, but the discovery once made it is not likely to be overlooked. Here, indeed, was presented a most forcible illustration of the danger of building up a geographical puzzle map; of piling one on to another the results of local fiscal surveys in the hope that when they were all put together they might make a good topographical guide to the country. Needless to say, the result was disastrous from the scientific point

[1] Aktiebolaget F. Tilgmann, Helsingfors, 1897.
[2] *Vide* address by Colonel Sir T. H. Holdich, C.B., K.C.I.E., F.R.G.S. Report. B.A.A.Sc., London, 1903.

point of view, and it might almost be said of it that it was disastrous from the military point of view as well. . . . . However that may be, I can only express my own conviction that geographical mapping will be found to be an urgent necessity in every corner of the unmapped world subject to British influence. . . . We cannot afford to wait, and the great geographical problem of the age is how to reverse the natural sequence of scientific procedure, and to obtain maps of the unmapped world which no subsequent geodetic operations shall condemn as inaccurate.

In this connection it may be noticed that children in the Geneva primary schools, age 11–12, make, as an exercise in "geometry," fair sketches of their school-halls, school-yards, etc. (see Chap. V, section 6), and in "arithmetic" the Vaudois children of the same age do much the same thing; while in the year 13–14 the latter learn also "elementary surveying exercises in the field," and become acquainted with the use of cadastral plans, etc. In both cantons the pupils are accustomed to geographical sketching, and copying maps also. It may be mentioned that exercises in elementary surveying (*arpentage*) are in favour in the greater number of the important rural schools of France.[1]

French teachers, in passing through their course in the normal school when qualifying for the position of primary teachers, learn surveying in their third year, undertaking such actual work in the field as levelling, measurement of areas, etc. (Chap. XXXV, section 9). The advantage of this in countries like those of Europe, where the conscription obtains, needs no comment, for such preliminary training in surveying and topographical work is of obvious value in military operations, reconnaissance, etc. The detailed geography of any country for any special purpose could readily be developed by pupils who have been taught as indicated.

6. *Pædagogic Theory of Geographical Teaching.*—The primary teaching of geography may well commence in the kindergarten. In the case of the infant child, says Dr. Guex, "La géographie, c'est la faune et la flore, les fleurs, les animaux, les pierres, qui sont chaque jour sous les yeux de l'enfant" (Geography is the fauna and flora, the flowers, animals, stones, that are daily before the child's eyes). This has been previously referred to in treating of kindergarten (see Chap. IV, section 17).

The initial stages of the development of the subject may take place somewhat as follows:—

The idea of *topography* originates in the child-mind with any attempt on a child's part to take account of the relation between his school and home, and of any other places or localities he has thought of as intermediate, or related thereto. These are *orientated*, first, *relatively*, by observing the direction, say, between school and home, in relation, etc., in which either or both lie; and, *absolutely*, when he recognises the *cardinal points* from the sun's positions, for these give an initial direction independent of the accidental direction of streets, etc. The child's conceptions of terrestrial *morphology* commence as soon as he takes account of the slopes, rivulets, etc., and other differences of configuration. His geography is extended to the outer world the moment he is curious as to where the streams come from or go to; from whence come the roads or railways, or to where they lead. In this way his geography commences to embrace the larger world.

The child's geography becomes *physical* the moment he observes the effect of configuration of surface on wind, rain, mist, etc.; when he recognises the influence of vegetation, or other variation of surface, or of sheets of water on temperature; when he relates the seasons to the position of the sun, etc.

As soon as he observes the presence of any industry, and that it requires some condition, as proximity of water, etc., water-power, his geography becomes *industrial*; and when he realises that things come from afar to his native place, and that things are dispatched therefrom, it becomes *commercial*. If he sees any people characteristically different from his own, it becomes *ethnographic*; and as each element is added, so his geography includes a wider and wider field.

Many-sided interest and reality, rather than systematic treatment, is first to be aimed at; and this realistic way of teaching can focus interest on multitudes of things that help geography, and at the same time carry thought outward to other things in Nature also of interest.

From the above it is seen that the pædagogic order of development is totally different from the logical or analytic order, and that while the topographical and morphological divisions of geography first attract attention, *the teaching should, as far as possible, cover the entire range within the child's comprehension.*

In this connection, the value of elementary geological knowledge may be referred to. The intimate connection between geography and geology through the morphology of the earth's surface is obvious on the least consideration. The school museum may be made the basis of securing interest and *real* knowledge. It is little use describing the different features of the earth's formation by means of prettily coloured diagrams; what is wanted are real samples of the various rocks and minerals, and means of interesting the children in regard thereto.

It is easy to see that thoroughly and realistically taught primary teachers, furnished with proper equipments and opportunities of teaching, will carry the plane of education much higher, not so much as regards mere verbal and unpractical knowledge, but as regards real knowledge, actually appropriated, and properly understood.

This is not yet secured in our system in this State, but is secured in the Continental systems of training teachers. They are, throughout, realistically educated by instructors having real, as distinguished from mere literary, knowledge; and the student-teachers are brought into direct contact with the things to which they must refer in their teaching. For example, the geological side of geography, which enters at once into any thorough description of the earth's surface, demands, at least, some acquaintance with stratigraphical geology and petrography, and, therefore, the teacher of geography must come into contact with the subject-matter of these branches of science.

The requirements of proper geographical teaching may be summed up as—

(1) Adoption of the intuitive method, *i.e.*, realistic teaching.
(2) Treatment of the whole range of the subject, graduating it to suit the comprehension of the children at each stage.
(3) Use of (*a*) pictures; (*b*) reliefs; (*c*) maps.
(4) Sufficiently wide and realistic education of teachers in cognate subjects.

Some reference will now be made to the form of teaching in various countries, commencing first with Belgium. This will make it apparent that the one theory of teaching the subject is practically adopted by the whole of Europe and, it may be said, also by America. 7.

[1] Rapports du Jury International. Paris, 1902, pp. 55-56. Fig. 26 in the "Rapports" shows a class at work.

7. *The Belgian Programme in Geography.*—The teaching of geography (Aardrijkskunde) in the communal primary schools (Lagere gemeenteschoolen) takes the following form, according to the official programme here translated :—

LOWER DIVISION.

(1.) The cardinal points (De hoofwindstreken). Method of orientating oneself observing the position of the sun. Exercises therein. The intermediate points.
(2.) *Plans.*—The class-room, school, street, group of habitations, the communal territory—(*a*) teaching to read plans; (*b*) sketching as far as possible—1°, the principal parts of a plan; 2°, the cardinal directions and those indicating intermediate points.
(3.) Discourses on birth-place, geographical facts and nomenclature, national productions, occupations of people, industry and commerce. Walks, excursions.
(4.) First idea of the canton.
(5.) Visual horizon: form of the earth.
(6.) Shew on the sphere—(*a*) the land and sea; (*b*) the five continents and the great oceans.
(7.) Shew on the sphere Belgium and its neighbouring countries.

MIDDLE DIVISION.

(1.) *Orientation.*—Revision of notions taught in the lower course.
(2.) Plans and charts—(*a*) Sketching of the plan of the school-ground by the pupils; the plan of the street; (*b*) reading the simplified map of the communal territory; (*c*) the canton: reading the map; (*d*) drawing from memory several sketches relative to the map of the communal territory and to the map of the canton, by the pupils. Appreciation of the distances.
(3.) Great circles of the sphere.
(4.) Boundaries of the five continents on the sphere. Several great voyages, indicated upon the sphere (those of Columbus, Vasco de Gama, and Magellan). Indication of the principal States of Europe and their capitals.
(5.) *Belgium.*—(*a*) Boundaries, form, extent, population—comparison with other countries; inhabitants, languages, form of Government. (*b*) Division into provinces; boundaries, chief town, and several important towns in each province, several of the great lines of railway. (*c*) Summary of physical geography; general aspect, plains, plateaux, hills, valleys; watersheds, basin of rivers; course of the Escaut (Scheldt) and the Meuse, with indication of principal tributaries; the most important canals. (*d*) Most important productions of the principal region of Belgium. (*e*) Detailed description of the natal province; tracing of maps and sketches.

HIGHER DIVISION.

(1.) *Belgium.*—Recapitulation of the preceding course. More developed study of the physical geography and of the great agricultural and industrial regions. Commerce. Ways of communication by land and sea; ports; merchandise imported and exported.
(2.) Short description of each of the provinces, with drawing from memory of maps and sketches.
(3.) Practical use of the "Official Guide for travellers upon the railways of Belgium" (officiëelen reisgids op de Belgische spoorwegen).
(4.) *Europe.*—Summarised description of its shores, seas, gulfs, straits, islands, and peninsulas. Indication of the principal chains of mountains; also of the largest plains and plateaux. Most important rivers. Principal countries of Europe, boundaries, governments, great cities, natural wealth, industry. Most important commercial relations with Belgium.
(5.) Very succinct treatment of Asia, Africa, America, and Oceania. Several great voyages, the route being drawn in chalk upon the sphere.

In schools where circumstances permit, the following may be profitably added :—

1.) *Conceptions of Cosmography.*—Orientation by means of compass and pole-star. Latitude and longitude; determination of a point upon the surface of a sphere. Measurement of distances on a sphere. Conception of the movements of rotation and revolution of the earth. The day and night; the seasons. The lunar phases, eclipses, and comets.
(2.) *Maps.*—Reading of a graduated series of charts relative to the communal territory. (Charts of the War Department.)

From the above programme it will be seen that the endeavour is to make the teaching realistic. The part played by excursions will be dealt with in a separate section: it will suffice here to state that interest is excited, observation stimulated, and knowledge made far more real by this method.

8. *German Conception of the Teaching of Geography.*—Seyfert's conception of this subject may be regarded as expressing the German view of geographical teaching. He divides the subject into the physical, political, and mathematical branches. On account of the measureless wealth of material, he argues that the selection for teaching must be made with the greatest care.[1] He recognises the prominent rôle which local geography must play, and lays down as a principle that as the region considered is further and further away, so may the material be more and more restricted. (Je ferner sie uns liegen, desto mehr ist der Stoff zu beschränken.) The humanistic relations of geography need special regard. Especially in mathematical geography must the power of comprehension of the children be carefully considered, for "the centre of gravity of geography does not lie in the matter but in the proper treatment" of the subject (Der Schwerpunkt der Geographie liegt nicht im Stoff, sondern in der rechten Behandlung).

Naturally, says Seyfert, progress in geographical knowledge should be from the locality to more distant places, though it is desirable finally to apply the acquired knowledge to the fatherland, and to one's own district. The visible region, about the child's school or home, he affirms to be of importance as constituting an equivocal limit between his own region and distant regions. Consequently he would develope the subject thus :—

(*a*) Home.
(*b*) Visible region, province, the narrower fatherland.
(*c*) Mathematical geography as far as it is essential to the proper understanding of maps. Germany.
(*d*) Europe.
(*e*) Foreign countries, mathematical geography. Germany.

To each of these sections a year would be given. Seyfert lays great stress upon the *educative value* of the subject. (Muss sie hauptsächlich ihres bildenden Wertes wegen behandelt werden.)

The value of relief-maps, and of pictures, in the formation of realistic ideas, and in transforming the conventions of the ordinary map into significant signs, and the importance of a proper articulation of the material of instruction, are insisted on.

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[1] Schulpraxis, Methodik der Volksschule. Leipzig, 1900, p. 107.

9. *Programme of Geographical Teaching in Saxony.*—The following indication of the development of the subject of geography in the schools of Saxony, drawn mainly from the "Lehrplan" of the evangelical primary schools of Dresden,[1] will give a more definite idea of the detailed treatment of the subject (Erdkunde).

The teaching of geography is designed to lead to an accurate knowledge of one's own locality, then of the lesser and the greater fatherland, passing on to a knowledge of Europe and other parts of the world, finally leading to a clear idea as to the place of the earth, cosmically.

The principles laid down for control of the teaching are:—

(*a*) The instruction must proceed from that which is near to that which is more remote, obtaining the fundamental conceptions of geography from a regard of one's own surroundings, and, by measurement and comparison with the known, aiming at an understanding of things further away.

(*b*) Inasmuch as acquaintance with one's own district and the fatherland is a means of developing patriotism and civic excellence, it is to be extended and consolidated as the pupil passes from class to class. Home and fatherland are to constitute in every class the starting point for all geographical instruction.

(*c*) The so-called mathematical geography is also in each class to be so connected with the physical and political, that as the knowledge of the world's surface is extended, a significant picture of the earth as a cosmic body will be acquired.

(*d*) Intuitive consideration of the subject-matter is to be furthered by actual observation in the school, school excursions, interpretation of the maps and atlases. Sketches of maps and charts, geographical pictures, special natural productions, etc., are means to the end sought, viz., the attainment of realistic knowledge.

The teaching in the classes of the above material is developed as follows:—

Sixth Class.—2 hours per week. Attention in this class is given to the locality and its immediate surroundings; to its more important natural products, the treatment throughout being as far as possible "intuitive" (in anschaulicher Weise). The direct aim of the instruction is to awaken in the children the habit of careful observation of the surroundings. There is also a certain amount of sketching done.

The instruction refers to the following matters (Lehrstoff):—

(1) The schoolroom. Outline. The four cardinal points.
(2) The school-house, and premises. Observation of the daily path of the sun. Measurement of the shadows. The surroundings of the school premises.
(3) The valley of the Elbe at Dresden. The bed and course of the river. The gauge of the Elbe (Elbpegel). Right and left banks. The bridges over the Elbe. Neighbouring streams (Weisseritz, Priesnitz).
(4) The old city. The market (old and new market). Principal streets.
(5) The castle and terrace. Names of the principal buildings, with a short account of their purpose.
(6) Going eastward. The suburb Pirna. The Bürgerwiese. The oaks and beeches. The Royal garden. The pond and lake. The blackbirds and doves. The suburb Striesen. Blasewitz. The pines. Loschwitz. The vines.
(7) Going southerly. The Lake suburb. Räcknitz. Loam and clay. The hill; its slopes, summit, ridge, railway.
(8) Going south-west. The suburb Wilsdruffer. Löbtau. Plauen. Coal. Rocks, cliffs, etc.
(9) Going north-west. The Weisseritz. Friedrichstadt. Briesnitz. Cherry-tree, rye and wheat.
(10) Going north. The new city (Neustadt). The Leipzig suburb. Antonstadt and Albertstadt. The heath. Firs and birches.
(11) The weather. Heat, cold, wind, clouds, rain, ice, snow.
(12) The sun and moon.

Fifth Class.—2 hours per week. In the summer semester, consideration is given to the local region, special reference being made to its history: in the winter, to the administrative district of Dresden, and in outline the other districts of Saxony.

A. *Local Geography* (Heimatskunde).

(1) The plan of Dresden, the names and positions of various parts of the city. The principal streets.
(2) Dresden, the city of the first Wettins. The bridges. Otto the Rich. The Wettin fête, 1889.
(3) Dresden, the residence of the Albertines, the castle of the Georges. Church and school of the Holy Cross.
(4) Dresden and the Reformation. The Moritz (Maurice) monument. The Luther monument. The Evangelical Cathedral. Father Augustus and Mother Anna (monument). The "Ostravorwerk."
(5) The new city (Neustadt). Augustus the Strong (monument). Japanese palace. Block-house.
(6) The old city under the kings of Poland. The new Frauenkirche. The Brühl Terrace. The Catholic Cathedral. The Tower. The bombardment of Dresden in 1760. The Church of the Holy Cross.
(7) The Battle of Dresden in 1813. The Moreau Monument (the Marcolini Palace). The Körner Monument.
(8) Albertstadt. Various parts of the same. King John and King Albert. The entry of troops in 1871. The Germania at the old market.

B. *Geography of Germany* (Vaterlandskunde).

(9) Along the Elbe, upwards. Saxon Switzerland. Mountains, rivers, localities, branches of industry.
(10) Going western. The valley of the Weisseritz. The Tharandt forest. Freiberg. The Erzgebirge. The Freiberg valley. Mining. Mountains, rivers, localities.

(11)

[1] Lehrplan für die evangelischen Bezirksschulen der Stadt Dresden. Dresden, 1900, p. 84. See pp. 43–49.

(11) Along the Elbe downwards. Meissen and Albrechtsburg (Böttger). Lommatzsch (Saxon husbandry). Riesa. The Elbe haven. The railway. Strehla.
(12) The north-eastern district of Dresden. The valley of the Röder. Raderberg (glass manufactory). Raderburg and Grossenhain.
(13) The district of Bautzen (physical). Mountains, rivers, and natural products.
(14) The district of Zwickau. Reference to the Erzgebirge, railways, rivers, and natural products.
(15) The district of Leipzig. The political geography of Western Saxony does not yet come under review in this class, so that both these districts are preferably treated together.
(16) The heavens, horizon, the eight wind directions. Individual constellations.

Fourth Class.—2 hours per week. The environs of Dresden and its trade. The political geography of Saxony. Germany. Its boundaries. Mountains. Principal rivers (physical geography). The globe and its principal lines (mathematical geography).

The subject-matter (Lehrstoff) is treated as follows:—

A. *Local Geography* (Heimatskunde). About 6 hours.
(1) Plan of the surroundings of Dresden.
(2) Shipping of the Elbe.
(3) Principal roads leading towards Dresden.
(4) The Dresden railway stations and railway lines.

B. *Geography of Germany* (Vaterlandskunde).
After recapitulation of any work in physical geography in Class V, political geography is commenced.
(5) The district of Bautzen. Zittau (linen industry), Löbau (agriculture). Bautzen (history, the Wends), Kamenz (cloth manufacture and pottery).
(6) District of Dresden. The subject matter treated in Class V is to be merely recapitulated and completed.
(7) The district of Zwickau. Some of its principal valleys and lines of trade.
(8) District of Leipzig. The geographical examination of Germany, in respect of its physical features.
(9) The boundaries of Germany. Boundaries by land and water.
(10) The Alps. The upper German table-land.
(11) The mountains of Central Germany; the Fitchtelgebirge.
(12) The North German lowlands.
(13) The principal rivers of Germany, with their most important tributaries.
(14) The climate of Germany, and its natural products.

C. *Mathematical Geography.*
(15) The earth as a sphere. The equator. The zones. Distribution of land and water (the globe).

Third Class.—2 hours per week. Brief consideration of the locality and of the historical monuments connected therewith; the political geography of the German Confederation and of its States and peoples. Principal features of the physical geography of Europe. The motion of the earth about its axis.

A. *Local Geography* (Heimatskunde). The review of the history of Dresden, with special regard to its monuments and other noteworthy historical buildings (about 6 hours).
B. *Geography of Germany.*—After recapitulation of the physical geography taken in Class IV, the political geography of Germany is commenced. Regard is had to the most important towns, particularly of individual peoples; their activity, their trade, and so forth, are reviewed. Places historically significant are treated with reference to their place in general history.
C. *Geography of Europe* (Physical Division).—The boundaries, seas, and divisions of the sea. Islands, peninsulas, countries, mountains, principal rivers, climate, and natural products, etc., are discussed.
D. *Mathematical Geography.*—Terrestrial co-ordinates (latitude and longitude). The motion of the earth about its axis. The pole; divisions of the day.

Second Class.—2 hours per week.

A. *Local Geography.*—In the local geography the city and State administration are to be referred to. In the geography of Germany and general geography, the political geography of European countries, with special reference to their relation to the German Empire, are to be considered. The position, boundaries, and magnitudes of the four other continents are to be treated, and finally, in mathematical geography, the motion of the earth about the sun. The State buildings in Dresden. The Ministerium. The "Landhaus," court-houses, etc. The city administration (town halls, custom house, banks, hospitals, churchyards, etc.). Churches and schools, seminaries. Gymnasiums (10 hours).
B. *German and General Geography.*—General consideration of the four other divisions of the earth. Areas, boundaries, oceans, islands, peninsulas (16 hours). Main outlines of political geography of European countries, with special regard to their relation with Germany. Recapitulation of the German States, with their areas and populations (42 hours).
C. *Mathematical Geography.*—Motion of the earth about the sun. The seasons. The moon. Eclipses. (12 hours.)

First Class.—(2 hours weekly). Local geography in respect of local industry, trade, art, and science. The geography of the narrower and larger Fatherland in respect of its unity, its commerce and industry. Also that of the extra-European divisions of the earth. Mountains, rivers, products, countries, and principal cities. Finally, the principal celestial phænomena.

A. *Local Geography* (Heimatskunde).—The industrial life of the locality; its commercial trade; its Custom-houses, exchanges, and banks. Museums and collections. Academy of painting. The Polytechnicum, and so on. (4 hours).

B. *German and General Geography.*—The extra-European divisions of the earth, viz., Asia, Africa, America, and Australia; their mountains, principal rivers, states, capital cities; such as have some commercial relations with Europe being specially treated. The European colonies, with special reference to the German. (60 hours.)

C. *Mathematical Geography.*—The solar system, planets, comets, the stellar universe, the milky way, the pole-star, individual constellations.

From the above it will be seen that the subject "geography" not only includes the historical, morphological, industrial, commercial, physical, and mathematical elements, it also embraces cosmographical features. It is taught, as far as possible, intuitively; it relies on realities, and not on mere description; and, when one takes into account the equipments in the way of maps, pictures, globes, etc., for teaching the subject, it is clear that it is thoroughly treated.

The fusion of geographical and historical ideas in the geographical teaching of European countries, where history has been full of stir and interest, assists the memorising of both series of facts.

10. *The Teaching of Geography in Switzerland.*—In the greater number of the cantons of Switzerland the teaching of geography commences with what may be called its local form (*Heimatskunde*, géographie locale). This is for two reasons. It ensures a sufficient knowledge of the country for military purposes; secondly, geography is in this way more realistically learnt. To commence with the geographical facts with which one is in daily touch is to make the subject understood. Rousseau, Girard, and Pestalozzi have greatly influenced this form of developing the subject. It will be remembered that in the "Emile," Rousseau urged that the teaching should commence, *not* with the representation of the objects, but with the objects themselves; that, instead of shewing a globe, or map, the geographical feature should be directly indicated. His starting-points would be the school itself, and the child's own dwelling. From these he extends the purview to the town, the streams in the neighbourhood, the hills and valleys, and so on. Commencing with one or two objects as data, the child is to fill in the others roughly, in their relative positions, thus learning the topography of the country; in this way the pupil *makes his own map* of his immediate surroundings.

The advocacy of this method of learning was characteristic with Rousseau. "Reading," said he, "is the plague of childhood, and almost the only occupation given the child . . . . Books are to him instruments of torture. . . . I hate books. They only teach one to speak of what he does not know. . . . The child who reads does not think; he merely reads, he is not informed; he learns words. . . . Things! Things! I can never sufficiently repeat that we assign too much power to words. It is by the first word with which the child contents himself, the first thing that he learns on the testimony of others without seeing its utility himself, that his judgment is lost. . . . *Never substitute the sign of a thing for the thing itself, except when it is impossible to shew the latter*; for the sign absorbs the child's attention, and makes him forget the thing represented."[1] The principle applied in the teaching of geography aims at ensuring that the idea formed shall be real, and that the geographical terms learnt shall stand for the real things. This method of intuitive teaching has taken a strong hold in modern education, and has practically reformed the old-fashioned methods, not only in the case of geography, but in almost everything else susceptible of being intuitively taught.

This teaching of *local geography* is considered as a necessary preparation. By compelling the pupil to view facts directly, it places him, as it were, "before the great book of Nature, teaching him to see, observe, and judge for himself, thus making the child a little conqueror, moving slowly, but surely, to the discovery of the world."[2]

In this intuitive method, the local study is not an end in itself. The child does not study the commune as commune, or the district as district, he studies to furnish himself with a series of mental images as clear-cut and as complete as possible, which shall serve, in some measure, as *prototypes*, so that when he is spoken to about other countries, he will be able to mentally visualise what he hears, not vaguely and inaccurately, but sharply and exactly. Definite mental images are the bases upon which all real knowledge is built, and these simple lessons about local geography not only vivify the child's conceptions of the totality of geographical facts, they establish also such conceptions with clearness.

The importance of teaching in this way depends upon a well-known psychological fact, viz., that children tend to think rather of concrete cases than of generalisations. The ideas derived directly have a reality and vividness, which greatly assist in the later use of their imaginations.

Here it may be remarked that, in many places, the topography is such that the illustration of geographical facts is seriously limited; so that, although every advantage is taken, the result is inadequate. In such a case, pictures must make good the defect.

In another place (Chapter LI) reference has been made to the great value of "*photochromes*," which reproduce photographically, and in their natural colours, the appearance of the various features of the earth's surface. These are important aids to geographical teaching, supplementing the intuitive method, and making the teaching thoroughly realistic.

Among the pioneers in the intuitive method of teaching was Pestalozzi, whose geographical lessons, given at Yverdon in 1804, are referred to by Professor L. Vuillemin in his "Remembrances." He says:—

"The first elements of geography were taught to us on the soil. As a beginning, our walk was directed towards a narrow valley in the neighbourhood of Yverdon, through which the Buron flows. We were made to contemplate it as a whole and in detail, until we had a true and complete mental picture of it. Then we were each invited to lay in a store of clay, which was found on one side of the valley, and we wrapped it up in large sheets of paper we had brought for this purpose. On our return to the castle, the long tables were divided among us, and we were left to reproduce in relief the valley which we had just studied. The following days brought new walks and new explorations, each affording a higher point of view, and each time a fresh extension was given to our work. We went on in this manner until we had accomplished the study of the basin of the Buron, and from the height of Monté la, which completely overlooks it, had grasped it in its entirety, and until we had finished our reliefs. Then, but only then, we passed from the relief to the geographical map, not being shewn it till we had thus acquired an understanding of it."[3]

Karl

[1] Recueil monographies pédagogiques. Lausanne, 1896, p. 15. The passage is not italicised in the original.

[2] *See* Rapport sur Education et Instruction. Lausanne, 1897, pp. 90–1.

[3] Quoted from Joan Berenice Reynold's Report on "The Teaching of Geography in Switzerland and North Italy.' London, 1899, pp. 12–13.

Karl Ritter (1779–1859), who perhaps deserves the name of founder of modern geographical science, came directly under the influence of Rousseau and Pestalozzi, visiting the latter twice at Yverdon. In his great work, "Die Erdkunde in Verhältniss zur Natur und zur Geschichte des Menschen" (Berlin, 2 vols., 1817–1818, "Geography in relation to Nature and to the History of Man"), Ritter determined to apply Pestalozzi's method to geography—that is, he made it intuitive, and he humanised it. Guyot, a pupil of Ritter's, appointed in 1838 to the Academy of Neuchâtel, has given this form of geography, viz., that which takes account of its relation to man, a predominant influence in Swiss schools.

Still wider aspects of the subject of geography have been brought into view through the growth of science, and the above conception of the scope and meaning of its various parts have been greatly modified by fusion with what may be called the purely scientific conception, as distinguished from the purely humanistic. Thus, as we have seen, modern methods of teaching geography take account of the atmosphere, the hydrosphere, and the lithosphere, with which we have directly to deal, not only in relation to man and his needs, but as facts of direct interest in themselves, and this has greatly extended the significance of the subject.

A point on which stress has been laid in Switzerland is the simplification of manuals and atlases, and the bringing together of the illustration and the text where it is referred to. For example, in the "Manual Atlas" of the W. Rosier,[1] there are about 200 figures and 60 coloured maps. This manual is much used in the cantons of Geneva, Vaud, and Neuchâtel.

The shewing of salient features, and avoiding crowding small maps with detail, is desirable, and enables a clear idea of a country to be formed much more readily.[2]

11. *Geography in the different Cantons of Switzerland.*—There are of course some differences of teaching in the different cantons. According to Miss Reynolds,[3] no attempt is made in the *primary* schools of the Appenzells, Fribourg, Schwyz, and Uri, to teach more than the geography of Switzerland.

In the primary schools of Baseltown, Basel, Berne, Glarus, Lucerne, St. Gall, Solothurn, and Unterwald, the geography of Europe and the rest of the world is all taught in two hours a week for one year, *i.e.*, considerably less than 100 hours.

From the programme given for the Geneva schools, it will be seen that in the year 8-9, three half-hour lessons a week cover the following treatment:—

Conversation in reference to the school neighbourhood, the streets in vicinity, the village and commune, the orientation of the school-room, the relation between various localities and the school, and in reference to streams, lakes, hills, mountains.

The following years there are four half-hours devoted to the reading of maps, etc., outline of plan of class-room, of the parish; the study then embraces the town, canton, the mountains, the lake, the Rhône. The communes and principal localities, various types of cultivations, important industries, the roads, etc., the outline map of the canton are treated in greatest detail. The terrestrial globe, the continents, and oceans are briefly considered.

In the next year the movement of the earth is considered, the zonal divisions, and the earlier subjects are more developed.

In the following year, 11–12, other countries of Europe come under review, their products, industries, commerce, great lines of railways, and the general conceptions of the distribution of heat over the entire earth are also taken into account. Map sketches and drawings also form part of the course.

In the last year, 12–13, in addition to other matters, the United States and its relation to Europe is discussed.

The work in the adjoining canton (Vaud) is not radically different.

It will be seen from its programme (Chapter V, section 8) that both the intuitive method is followed, and humanistic elements are at once introduced. The child is then led on to the consideration of the most prominent features of his birthplace, and from that to the topographical features of the country he knows, to its lines of communication, to the occupations of its inhabitants, and to their relations with the external world; and, in closing the course, the subject is extended so as to really include the simpler elements of cosmography.

This is, perhaps, a sufficient indication of the details of the development of the subject. It may be noted, however, that the equipment for teaching is excellent.

12. *Geography for Swiss Teachers.*—The method of teaching geography in their normal schools throws light upon the Swiss conception of the subject. The "Lehrplan des Lehrerseminars in Küsnacht" (Curriculum of the Teachers' Seminary at Küsnacht) will serve to give a definite idea of the matter.

In the first and second classes of the normal schools the aim of the teaching is to make the student realise the influence of the characteristic features of various countries upon the life of the population, and special forms of activity of the inhabitants.

In the 3rd and 4th classes, treating of general geography, it is endeavoured to ensure a recognition of the influence over the whole earth of the important countries. Finally, the earth is regarded as a body in space, and an insight is given into the determination of place and time thereon.

First Class (two hours).—Territorial geography of the most important parts of Europe, with special reference to Switzerland and its surroundings. The representation of the form of the surface in topographical and geographical maps.

Second Class (two hours).—Territorial geography of the remaining part of Europe and of other continents.

Third Class (one hour)—*General Geography.*—The most important features of terrestrial morphology, of oceanography, and of climatology. The distribution of the most important plants and animals, and of the human race. The characteristic features of commerce and exchange.

Fourth

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[1] Manuel Atlas destiné au degré moyen des écoles primaires, par W. Rosier.

[2] See such works as "Géographie locale," par B. Dussaud et W. Rosier; "Premières leçons de géographie," par W. Rosier; "Der geographische Unterricht auf der Stufe der Volks-und Mittelschule," von G. Stucki; "Première année de géographie, par H. Elzingre."

[3] *Op. cit.*, p. 8.

Fourth Class (one hour)—*Mathematical Geography.*—Orientation of the heavens from a fixed point on the earth. Horizontal and equatorial co-ordinates of the stars. The astronomical triangle. The apparent movement of the sun and moon, and the determination of time.

Orientation with a variable standpoint. Geographical co-ordinates and astronomical determination of position. Form and magnitude of the earth. Distances of the sun and moon. The heliocentric standpoint of Copernicus. Scientific evidence of the earth's rotation and revolution. The law of actual motion.

In treating geography, it is required that its place, as intermediate between the literary-historic and the mathematical-scientific groups of subjects, be carefully attended to. Its *educative value* lies in the fact that it reveals the mutual relationship between the character of a country and the life of its people, while its *practical value* depends upon a careful selection of data in regard to names, places, areas, population, and statistics of production of important places, states, and countries. Mere memorising is not made unnecessarily burdensome. It is rather upon the arousing of proper conceptions as to magnitude and form, and of real representations by means of various intuitional material, that satisfactory results depend, not upon the charging of the mind with a large number of statistical figures. In recapitulation, political geography is renewed and increased in interest by regrouping countries with regard to their histories and relationships.

The connection of physical geography with physics and chemistry; morphological, botanical, zoological, and mathematical geography with the historical development of the conception of the world as a body in motion in space, are carefully exhibited, simple apparatus being used in demonstrating the possibility of determining some elements of cosmic phænomena, simple calculations also being made.[1]

Geographical excursions will be later referred to, but in endeavouring to understand the actual nature of geographical teaching in Switzerland, and, in fact, in Europe generally, it is to be borne in mind that the cognate subjects are well taught to teachers, so that, both in school teaching and excursions, the interrelations of geography with other forms of knowledge can easily be made apparent.

13. *Difference between Geography and Cartography.*—Dr. F. Guex, of Geneva, points out clearly that map-making is not necessarily the teaching of geography. "Nous n'avons pas mission de former de petits cartographes" (it is not our work to make little cartographers), he says. While he, in common with other Swiss educationists, recognises that map-drawing, however technically unskilful, is an excellent way of compelling pupils to recognise the significance of scale, and to help them to read maps, and also that the drawing of sketches from memory assists in the recognition of the relative position of geographical objects, the mechanical character of mere drawing makes it often waste of time. To require complete maps to be copied from an atlas, is to occupy the hand rather than the mind, and is not valuable as a teaching process. To ask for sketches or diagrams, representing in a simplified manner the form of a continent or country, the position of its mountain chains and rivers, or of its principal cities, is on the other hand very valuable. The completion of blank charts, by colouring and the putting in of names, is, Dr. Guex affirms, also of value, the work of comparison with the wall-map or the atlas not being one merely of copying. Throughout Switzerland generally, the making of elaborate maps at home is not encouraged, that type of home work being regarded as inadvisable for hygienic reasons.

Ornamental drawing, *i.e.*, writing the printed form of letters, etc., may well be done in connection with maps, head-lines, and so on, but it is to be remembered that all such work is merely a writing lesson; and, further, that simply copying a map is really a lesson in drawing. Such work may be executed without any attempt on the part of the pupil to memorise the relative positions of localities, or to profit geographically by the work. Cartographic exercises are to be considered geography therefore only in so far as they involve attention to geographical elements.

14. *Map Drawing.*—Admitting that some forms of map-drawing are really educative, the methods followed in various schools may now be referred to. In Switzerland, maps are often drawn by means of what are called *construction lines*, *i.e.*, lines which constitute a sort of geometrical basis, indicating generally the *form* of the country. This method is represented by what is known as "Swinstead's" system in England, and "Rosier's" in Switzerland. In Rosier's series of text-books, the various lines have a definite relation to a standard base-line, so that the whole maps shall be properly drawn to scale. Dr. Stadler, of Zurich, recommends the use of geometric figures, and also of latitude lines, but not longitude. Schmid has systematically discussed the use of such lines. He describes six systems:—

(i) Net of lines formed by changing latitude and longitude lines into straight lines (view indorsed by Kirchhoff, opposed by Rosier, latter believing arbitrary system of lines preferable).
(ii) Net of squares (system now discarded).
(iii) Some latitude and longitude lines retained as a general guide, maps then drawn freehand.
(iv) Concentric circles and radii. (Idea of Matzat, based on argument of relative direction of places).
(v) Main lines at right angles; terminals forming trapeziums (Rosier's system).
(vi) Any geometrical figure has similarity to form of country (Herbart and Ritter).

Schmid advocates the construction of maps from landscapes and *vice versâ*. Miss Reynolds refers to a boy's note-book (boy aged 10), containing[2]:—

(*a*) Plan of school-room, scale 1:50.
(*b*) „ school-house, „ 1:200.
(*c*) „ gymnasium, „ 1:150.
(*d*) Drawing of a compass.
(*e*) Plan of school buildings and playground, scale 1:325.
(*f*) Section of street, shewing water and gas pipe.
(*g*) Target, and soldiers practising thereat.
(*h*) Drawing of basket for directing criminals into the lake.
(*i*) A wheel for torture.
(*j*) Steam-engine.
(*k*) Drawing of a castle.
(*l*) Profiles of several hills and plateaux.

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[1] See "Jahrbuch des Unterrichtswesens in der Schweiz, 1900." Zurich 1902, pp. 183-184.
[2] See Miss Reynold's work, previously quoted, pp. 70-71.

If one wishes to compare practical education in this country with that of Switzerland, one may ask, "How many of our children of 10 years of age can shew similar work?" The books seen by the Commissioners demonstrated that the work was really well done—in fact, drawing in Europe is throughout on a far higher plane than with us. It may be said that such work can be seen in any of the permanent or other school exhibitions.

Reverting to the method of map-drawing, it may be said that it is desirable that diagrams or models should be used to convey a real idea of the nature of map projection.

Where *standard time*, with Greenwich as initial meridian, is adopted, as in Australia, the standard meridians—*e.g.*, 120, 135, 150 E.—should be shewn more heavily than the rest.

There is considerable advantage in a large territory like Australia in using the parallels of latitude and the meridians to form the network for drawing in the details of the territory. Although they are only imaginary lines, they enable one to really determine the direction from place to place, and they roughly illustrate the convergency of meridians.[1]

A point rarely noticed in geographical teaching in Australia is that the terminals of the earth's axis of rotation are not fixed points on the surface, but shift slightly, the parallels of latitude and meridians of longitude, therefore, shifting also, the amount, of course, being invisible, however, on the scale of the maps.

15. *The teaching of Geography in Italy.*—The teaching of Geography in the Primary Schools of Italy is hardly on a satisfactory basis as yet, but progress is being made. The method of commencing with local Geography is advocated by the Director of the Municipal Schools of Turin (Signor Ambrosini), and features of the Swiss system of teaching will be adopted. Signor Constantini, at a Congress in Florence, strongly advocated excursions and map-making as aids to the teaching of Geography. He argued that the use of maps on Mercator's projection for children leads to false ideas, and urged the advantage of using maps of small areas, relating the areas with the rest of the world by means of a good globe.

With a view to enabling one to form a true conception of the relation of any country and its physical features to the rotundity of the earth, Signor Pomba advocated the making of a relief map on a true scale. His map of Italy on a scale of 1 : 1,000,000 is in the South Kensington Museum, London. This relief enables one to realise at once the insignificance of all inequalities of the earth's surface in relation to its magnitude, which is also obvious when one recollects that the latter is only 8 inches in a mile and varies as the square of the distance.

There is a general consensus of opinion, both in Switzerland and Italy, that in secondary schools Geography should be taught by special teachers; but this is a matter which will be more fully referred to hereinafter in dealing with secondary instruction.

The earnest attention which is being paid in Italy to the better teaching of Geography appears from the following extract from Miss Reynold's work before mentioned. She says[2]:—

> In a paper read at the Geographical Congress at Florence, 1898, Professor Ricchieri attributes most of the present defects in Italian education, Geography included, to the fact that the educational system is subject to constant alteration owing to changes in the Ministry. He desires to see a Legislative Committee on Education, composed of scientific and competent men, whose work should be continuous. These ideas are enlarged on in the paper he read at the Geographical Congress at Florence this year. One section of the Congress was devoted to the careful consideration of pædagogic questions, and, as a conclusion to this chapter, I feel I cannot do better than give an abstract of the Resolutions passed respecting the teaching of Geography.
>
> The Pædagogic Section of the Third Italian Geographical Congress resolved :—
>
> 1. That, in the Universities, special attention should be given to the necessity for preparing special teachers of Geography for Secondary Schools, who would have the desired stock of scientific knowledge. More attention should also be given to the study of geo-morphology.
> 2. The attendance at lectures on Geography at the superior Training Colleges should be compulsory for all preparing for the B.A. and M.A. degrees; also that these lectures should be extended over at least two years. In the Superior Women's Training Colleges, the time given to Geography must be increased, and the teachers of it placed on the same footing as that of other teachers.
> 3. That, in Technical Institutes, four hours instead of three should be devoted to Geography, and more regard be paid to the economic side of it.
> 4. In Secondary Schools the teaching of Geography should be entrusted to special teachers. The course on geography in the Lycée and superior Gymnasiums should be extended, and two hours a week devoted to it in the latter schools.
> 5. That Professor Sinsini be requested to write a pamphlet explaining his system of employing plastic for modelling reliefs in schools, and the simplest way by which this may be introduced into all Secondary Schools.
> 6. That the compilation of a reading book formed of extracts from the works of travellers, and suitable for enlivening the teaching of Geography, is much to be recommended. This book should be within the reach of Secondary Schools.
> 7. That a Geographical Annual of the Universities and Secondary Schools be started, containing reports of their work.
> 8. That, in Primary Schools, Geography should be considered as a co-ordinating element, following as much as possible the method of direct observation.
> 9. That the Geographical Military Institute should try to make a new type of map suitable for schools, and the Minister of Public Instruction should distribute these maps throughout country.
> 10. That votes of thanks should be passed to the President of the Congress, and Presidents of the Pædagogic sections, and a hearty, well-deserved cheer to a colleague, who for so many years has been fighting valiant battles for Geography and for Italian Schools—namely, Professor Archangelo Ghisleri.

Though these Resolutions shew the weak points of the present system, yet the fact that they were passed at meetings *invariably well-attended*, speaks volumes for the enthusiastic zeal with which awakened Italy is struggling for her own advancement.

This gives a sufficient account of the movement for the better teaching of geography in Italy.

16.

[1] For small areas, the ordinary conic projection is adequate; for the whole of Australia, the polyconic projection is better.

[2] *Op. cit*, pp. 99-101.

16. *Geography in the United Kingdom.*—Endeavours are being made to greatly improve the teaching of geography in the United Kingdom. The matter was discussed in a paper by Mr. T. G. Rooper,[1] one of His Majesty's Inspectors of Schools, the title of his paper being "Attempts to improve the Teaching of Geography in Elementary Schools," Mr. Rooper says :—

Reforms were begun through the Royal Geographical Society, whose collection of foreign maps was lent for exhibition in Bradford in the year 1887. The display of maps, models, and various devices for illustrating the instruction in geography in the elementary schools of Germany, France, and Sweden attracted special attention. Conferences were held in connection with the exhibition, one of which was attended by Dr. Scott Keltie, who made the collection.

One immediate result of these proceedings was the commencement of a series of local maps and models, a collection of which is exhibited. The conferences discovered the chief defects in the existing instruction : (1) Lessons in Geography were not based on object teaching, nor on the observation of local features and scenery ; (2) The art of "reading" maps was not taught, nor was the construction of a map led up to by making plans of short walks and diagrams of the neighbourhood ; (3) The study of political and commercial geography was not based upon the study of physical geography, neither were the details of geographical study connected as cause and effect. There was no attempt to present a country to the scholar as a connected whole, and the lessons consisted of lists of names and figures, at the most arranged in groups. Of such details many were wholly unsuited to the elementary stage.

The chief reforms consisted in the intelligent study of local geography through local maps and models, and in object lessons which explain the principles of physical geography. The reliefs and models led up to the art of reading maps, and to the demand for better maps. Such lessons are an excellent introduction to reasoning, and prove how little there is that is purely arbitrary even in the sites of towns and villages in the neighbourhood, much less in the industries which are carried on in them.

The necessity for good wall-maps is now apparent, and correctly-drawn details are demanded in place of vague and inaccurate sketches. Maps must interpret nature, and map-reading is the converse of the process of studying home geography. In studying home geography the child begins with a natural feature, such as a river or hill, and learns how to represent it on paper. On the other hand, in reading a wall-map the scholar begins with the symbols or representations of natural facts which he has not seen, and arrives by means of them at the natural facts which such symbols represent. Hence the extreme importance of the right study of home geography and local models and reliefs. The symbols on the wall-map are vague and meaningless unless a content and significance are given them by previous practice in the building up of local plans and maps. The scholar has to be taught with care how to translate the symbols of the wall-map back into the forms of nature which they, however inadequately, represent. The difference between a good and bad map is now apparent. As the scholar commences geography by the study of nature in a triple process, which consists of observation, description, and representation, so, if the wall-map be accurate enough, he can continue to draw inferences from it much as though he were actually observing the country by personal inspection.

The value of graphic work in teaching geography is insisted on. The mere copying and colouring maps of various parts of the world is rather an exercise in drawing than in geography. Each map should be drawn to serve some definite purpose. It should disentangle from a complex whole some particular part which analysis brings to light and illustrate it with precision and simplicity. Further, the sketch-maps should proceed from simpler studies to more complex, and no map should be made of a country as a whole until the leading features have been dealt with separately, and thus the "constructive method of teaching geography is introduced.

The comparison of various kinds is made much more intelligible if the scholars learn to express their statistics by the use of square-ruled paper. Abstract numbers are thus converted into concrete space forms, and are then much more comprehensible. In conclusion, the formation of local geographical societies for educational purposes is recommended, and an account is given of the formation and working of the Southampton Geographical Society.

This paper was followed by another by Mr. E. R. Wethers, M.A., F.R.G.S., on "Commercial Geography in Education,"[2] for the teachers of West Riding. This was an account of a three years' course, viz. :—

(i) The Principles of Commercial Geography and their application to the British Empire.
(ii) The Commercial Geography of Foreign Countries.
(iii) Special Trades and Commodities.

In each course there were twenty-five lectures, thirty to forty teachers attending, the centres where they were delivered being Leeds and Huddersfield.

Mr. Wethers pointed out in these lectures that an inadequate knowledge of general geography operated as a difficulty in treating commercial geography. For example, the relation of physical to commercial geography depends upon an antecedent knowledge of the former. He advocated the collection of suitable lantern slides, which have, of course, for many years been a feature of continental methods.

There is every promise of a decided improvement in the teaching of geography in the schools of the United Kingdom.

17. *Geographical Excursions.*—A striking feature of geographical teaching in the elementary schools of Europe is the school excursion. In England it has been realised that study in museums and libraries, etc., may be as educationally profitable as study in the school-room, or even more so, and an hour so spent is of interest and value. On the Continent they have gone much further. Not only are lessons in geography sometimes given out of doors, but in many places regular school excursions are made, varying in length from a half-day to a week or even two weeks, grants even being allowed to assist the children who cannot afford to pay. The town of Berne pays, yearly, £600 for these excursions. They are, of course, economically arranged.

The matter of school excursions has been deemed of sufficient importance to treat systematically (see Dr. F. Beust's "Die pädagogische Schulreise"—the pædagogic school excursion).[3] Dr. Beust gives the following advice as expressing the results of his long experience in the matter of organising these school outings. We quote from Miss Reynold's work :—

(1) The place to be visited must be carefully chosen with regard to the weather, the methods of getting there, and the special aim of the excursion.
(2) The distance to be walked should not exceed 22 kilometres (14 miles) for children under 13, nor should the time of the outing exceed twelve hours.
(3) The children should be told what food to bring with them, and should eat this out of doors, and not in an inn, or time is wasted ; and the children may consider meals as the principal events of the excursion.
(4) The master should have gone over the exact route beforehand. (5)

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[1] Report of the British Assoc. Adv. Science, Bradford, 1900, pp. 809-810.
[2] *Ibid.*, p. 810.
[3] Zurich, 1885, Orell Füssli. See also 'Méthode pour enseigner la géographie par l'observation des formes de la terre ur les lieux mêmes, et leur reproduction en relief," 1875, by same author, as to the actual value of seeing the places themse ves, etc

(5) The master should take with him a good topographical map, on the scale of 1 in 50,000, of the districts visited, a watch, a compass, a railway time-table, a whistle, and simple remedies for such sicknesses or accidents as may occur.
(6) The parents of the children should be told the day before what route will be taken.
(7) The children should be shown this route on the map, told what objects to look out for, and spoken to as to the behaviour expected of them.
(8) The master should see that they possess strong shoes, and, unless the weather is very hot, wear woollen clothes.
(9) Besides food, they should be told to bring a flask for water or syrup, but be forbidden to bring wine. Each child should bring a tin case in which to place objects collected, also pencil and paper for taking notes.
(10) The weakest children should be kept in front, and a few strong, responsible ones placed as rear-guard to see that no one lags behind.
(11) The children should be told, in collecting objects, not to take things in a wanton fashion, not to injure plants nor to torture insects.
(12) When the children sit down to take a meal the master should make them put on jackets and coats if these have been taken off for the walk, and should be careful from what streams they obtain water to drink.
(13) Ample time should always be allowed for catching trains or steamers, the walking powers of the feeblest, and not the average, child being considered. Children often take double the time required by a grown-up person, even if walking steadily, as large numbers necessitate some delay. The pupils must also be impressed with the importance of punctuality.
(14) The hour of return should not be late, and the master should be sure that every child knows his way home from where the party breaks up, or someone should be appointed to meet him.
(15) Teaching is required to read landscapes as well as to read maps, and the master should therefore utilise the time in the train, as well as *en route*, for this purpose.
(16) These journeys must be gone over afterwards in school. Verbal accounts should be given by each child of what he noticed, and then he should be shewn how to classify these facts and arrange any objects he has collected. Drawings and maps must be made to illustrate the excursion, and, where possible, reliefs.

Dr. Beust also indicates what in his opinion are the advantages to be derived from such excursions. They are:—

(1) The bodily development is furthered.
(2) The pupils learn self-denial, and gain self-confidence. They obey, not only as a habit, but because they recognise the reason of commands. In time they learn also how to set to work promptly and seriously on whatever is necessary.
(3) The pupils' powers of observation are definitely trained and developed.
(4) The knowledge gained in school is completed and corrected by the experience of life.
(5) The children learn to value organisation.
(6) The excursions afford an opportunity for the teacher to learn much respecting the character of the pupils.
(7) They offer the best possible method for really understanding a topographical map—that is, the repeated comparison of the formation of the surface of the earth with the map.

The above refers, of course, to the one-day excursion. The longer excursions are undertaken by the older pupils only, and are practically confined to the classes of secondary schools. Students of these, and their professors, often make quite long excursions together, sometimes going to a centre from which daily excursions are made, at others travelling more continuously. For the past ten years the highest classes of the Normal College of Lausanne have made a four days' excursion each year. These journeys are not always confined to their native country; for example, in 1894 the class visited the Exhibition in Lyons.

Subjects like geology, natural history, climatology, and meteorology, etc., are touched upon, as well as geography, and the interest which can be developed through explanation of the morphological features in view is always high.

The following will give a realistic idea of a journey of ten pupils:—

1st Day.—Rail from Berne to Spiez on the Thunersee (Lake of Thun), 1,840 feet altitude; Spiez to Kandersteg by vehicle (18 miles, 3,835 feet altidude); on foot to Schwarenbach (about 3½ miles).
2nd Day.—Gemmi Pass to Leuk-Susten; rail to Zermatt (altitude 5,315 feet); ascent to Riffelberg (altitude 8,480 feet).
3rd Day.—Ascent of Gornergrat (altitude 10,290 feet) and Hohthäligrat (altitude 10,790 feet), and return to the Hotel Riffelberg, later to the Unter Theodulhutte (altitude 10,900 feet).
4th Day.—Ascent of Breithorn (altitude 13,685 feet); descended over Theodulpass to the village of Valtournanche (altitude 5,000 feet).
5th Day.—On foot to Chatillon (11½ miles, altitude 1,805 feet); by rail to Aosta (altitude 1,913 feet); vehicle to Morgex (about 20 miles, altitude 3,017 feet); on foot to Cour Mayeur (2½ miles, altitude 4,015 feet).
6th Day.—Through the Val de l'Allée Blanche (a long Alpine valley); over the Col de la Seigne (altitude 8,240 feet) to the Hotel at "Les Mottets" (altitude 6,227 feet).
7th Day.—Over the Col des Fours (altitude 8,890 feet) to the Col de la Croix du Bonhomme (altitude 8,147 feet), and then on the Les Contamines sur St. Gervais (altitude 3,927 feet).
8th Day.—On foot to Cluses (about 14 miles, altitude 1,590 feet); by rail to Geneva (29 miles), and by rail again to Berne.

This will give some idea of the longer excursions. Their interest, apart from the magnificent panoramas one sees, depends upon the teachers or professors accompanying them.

Although

Although excursions are not unknown in this country, *educative* excursions cannot be said to be a feature of our "primary," "superior," or "high" schools.

Their educative value is intrinsically great; but the full benefit is to be derived only through a teacher who has a real knowledge of geology, geography, botany, meteorology, etc.

Miss Reynolds reproduces an account of an excursion of twenty-nine boys, age 10 to 11, starting from the Kirchenfeld Bridge at Berne and going to Burgdorf by a route involving over 20 miles walking. The subjoined account was by a boy 10½ years of age, and reads as follows:—[1]

Already in May we thought of going for our excursion; but, owing to the rain, it was constantly put off. On the 13th of June we had fine weather, and therefore our teacher told us we should make the excursion the next day. At 5 a.m. we met on the Kirchenfeld Bridge. When everyone was on the spot, we marched to Ostermundigen. There on a tree we saw a stork's nest and four storks in it. After that, our way lay through the following villages: Stetterlen, Sinneringen, and Boll. Not far from there, we came to Utzigen, where is a castle which belonged to Herr von Daxelhafen. Now it has been turned into an establishment for poor people. A short time after we arrived at the Wegissen, where, in a beautiful corner of the forest, we ate the food we had brought with us. There was not much view, because the sky was already overcast; only the hills of Emmenthal and the chains of Stockhorn were to be seen. After having sung a few songs, we went down to the valley of the Biembachthal, and about an hour later reached Oberburg, but in rather a wet condition. There a good dinner awaited us. It consisted of soup, smoked beef, potatoes, beans, and two pieces of cake. After dinner we went in front of the house to play; but, as it was raining, we went back into a room. After playing a long time, we walked through the rain to Burgdorf. There we visited the Knight's Hall, where we saw coats of mail, swords, lances, battle-axes, halberds, prettily-painted targets, and all kinds of instruments of torture. Then we went to an inn, where we had bread and cheese. At a quarter to 6 we had to be at the station. The train soon arrived. We got in and reached Berne safely at half-past 6."

It may be stated that the expenses for the day for food, railway fare, entrance to museum at Burgdorf, were 1s. 8d. each. The Knight's Hall in the Burgdorf Castle is now an historical museum, and is the room in which Pestalozzi held his school.

The preceding accounts do not, of course, in themselves give an adequate idea of the value of these journeys; that can be better had by conversation with anyone who had received his education in Europe, and knows of them by experience. It may be pointed out that the benefits to be derived depend upon the *direction* of the pupils' attention to the various things worthy of notice, upon the stimulation of their *observation*, upon leading them to *reflect* and converse freely upon all that comes under their notice.

The personality and information of the teacher are obviously the great factors. It may be stated that throughout Switzerland, and, from what was heard, the same appears to be true of many other parts of Europe, the kindly interest of teachers in pupils leaves little to be desired. This is in some measure due to the idea of teaching being in the strict sense a *vocation*.

18. *Apparatus.*—The apparatus for the teaching of Geography may be viewed from two standpoints that of mere cartography, and that of *General* Geography—that is, geography in the wider sense, and as understood in Europe.

Some of the maps seen by the Commissioners were splendid examples of cartography, one of the best being the most-recently published map of Switzerland, a copy of which is now in every Swiss school.

Besides this, there are usually to be found, a black globe, a "tellurium," a "planetarium," an armillary sphere, a "uranotrope," often a relief-globe of the moon; pictures, photographs, slides, etc., illustrating industry, commerce, ethnography, the earth's morphology, meteorological phænomena, a projecting lantern, microscope, thermometer, barometer, museum of natural history, museum of commercial products in all stages, physical and chemical apparatus, etc., all of which are pressed into service in some form or other in the teaching of Geography.

The fine educational equipment of many continental schools, enables each subject to be taught on a wider plane and with greater interest than is possible in the absence of such equipment.

It may be noticed here that the use of photochromes to give a real idea of the world has commenced in England, and has been introduced into West Australia by Mr. Cyril Jackson.

19. *Geography for the Blind.*—It is worthy of note that the subject of Geography is taught in Paris, even to the blind. The complete course prepared by the teachers of the Braille school consists of a series of relief maps. By means of these the blind children readily learn a good deal of geography, and are able to point out upon the map the rivers, mountains, towns, and all geographical features, as well, it is said, and indeed often better than those who have their sight. By means of little sticks of 5, 10, 15, etc, centimetres in length, increasing up to two metres, the children are able to readily measure dimensions. A special compass, marked with the raised alphabet, facilitates the measure of angles.

20. *Conclusion.*—The teaching of Geography has, of late years, been completely reformed. The old, dry descriptive form, burdened with much uninteresting and useless information, taught without aids, without any careful attempt to make the pupil realise what Geography means, has practically disappeared in Europe, and is being abandoned in England.

Something like the continental idea of teaching the subject has been introduced here. The conception put forward by Professor J. W. Gregory, of Melbourne, in his "Austral Geography," is practically a move towards the continental methods of teaching. To reach the grade of this teaching it will be necessary to—

(1) Abandon the employment of untrained teachers.
(2) Give our teachers an education in Science subjects equal to what is received in Europe.
(3) Develope the methodology of Geography on Continental lines.
(4) Equip our schools better for teaching Geography and cognate subjects.
(5) Make larger use of pictures, lanterns, and slides, etc.
(6) Adopt the school-excursion as a means of geographical teaching.

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[1] *Op. cit.*, pp. 52–53.

CHAPTER XXV.

The Teaching of Arithmetic and Algebra in Primary Schools.

[G. H. KNIBBS.]

1. *Introduction.*—Attention is drawn in other places in this report (see Chapter III, sections 14–18) to the characteristic difference between the logical and pædagogic order in the development of subjects of instruction; and in the two preceding chapters the difference has been exhibited. Not only has geometry, referred to in Chapter XXIII, been treated as if the only way to learn it was by following through (what was *supposed* to be) its logical development, but also arithmetic, algebra, and mensuration. Such a method loses sight of the *unity of mathematic*, and the great help, which one branch affords another, is made of no avail. Arithmetic, geometry, algebra, planimetry, and stereometry are interdependent, each subject illumines the others, and is itself illumined by them; the interest of each is intensified by the others. Instead, therefore, of studying or teaching these subjects as if they were disconnected, they ought to be treated simultaneously, as far as that is possible.

Again, each subject ought to be attacked, not in what may be called the linear way, but laterally, that is throughout its range; that is to say, the earlier a view is obtained of the scope of any branch of mathematics, the better. Its *full significance* cannot, of course, be understood, any more than can that of language until an intimate acquaintance has developed; but by intuitive teaching, its range can be early perceived, and that not merely as regards a single branch, but as regards several branches in their mutual relationships.

In the school system of New South Wales arithmetic is taught early and algebra comparatively late. There is, however, no reason why, as suggested, the teaching of both should not proceed practically simultaneously, provided that the algebra is not initially too formal and abstract. The first lessons in arithmetical and algebraic thinking may commence even in the kindergarten.

In Europe, the methodology of these subjects is very carefully developed, and in appropriately simple language, the laws of association, commutation, and distribution are taught from the beginning, viz., in the illustrations of operations by means of the abacus.

The multiplication table is learnt intuitively, and memorised by practice, but not only by "parrot-memory" of tables. Unfortunately with our system of weights and measures, the teaching of arithmetic is loaded with much that is educationally tedious and useless, and practically a great waste of time, viz., the learning of our "tables of weights and measures." Until the metric system has been accepted, our children and the community will be handicapped, industrially and commercially. The very serious effect of this on trade and commerce is a question the discussion of which is outside the limits of this report, but may be incidentally mentioned.

Reference has been made in the chapter on Geometry (Chapter XXIII) to the whole curriculum in mathematics. The portions referring to arithmetic and algebra will again be adverted to in this chapter.

2. *Arithmetic.*—In German pædagogy a distinction is made between the introduction to arithmetic (Einführung), facility in arithmetical operations (Rechenfertigkeit), and applied arithmetic (angewandte Rechnung). The elementary ideas are obtained of number and numeral being treated together, that is to say, a certain number of objects—balls on the abacus, or sticks or blocks in the kindergarten material—are named, and the corresponding numeral written, thus: – – – is three, *i.e.*, 3. The four operations are taken together, first with small numbers. Some teachers regard the early introduction of the numeral as confusing, and commence with the actual numbers—*i.e.*, objects—and the corresponding names, and leave the numerals until some acquaintance with the four operations upon visible objects, and then introduce the numerals.

A somewhat striking difference between continental and English teaching is the restriction of numbers and operations with them to small numbers. Thus in some of the German Folk-schools the following is practised:—

	Class I.	Class II.	Class III.	Class IV.	Class V.	Class VI.
Number...	1–10	1–20	1–100	1–1000	1–∞	Common and decimal fractions.

To maintain interest, and to accustom the pupil to think, every new arithmetical case is deduced from a practical problem, and the children are led to discover as far as possible for themselves the special case applicable; that is to say, they are taught to analyse practical examples. Stress is laid upon accuracy, and after the early stages are passed, the exercises in the multiplication tables are taken first in each lesson.

Greater attention is paid to mental arithmetic than with us. "Die täglichen Rechenübungen sind zumeist für das Kopfrechnen bestimmt" (the daily exercises are devoted mostly to mental arithmetic), says Herr Direktor Seyfert in his "Methodology of the Folk-school."[1]

It

[1] Schulpraxis. Methodik der Volksschule. Leipzig, 1900, p. 150.

It is recognised that the arithmetical problems in verbal form (eingekleidete aufgaben) should be drawn as much as possible from the other elements of instruction instead of being taken out of an "Arithmetic Book." This makes arithmetic of higher educative value and more interesting.[1]

In *Geneva*, a manual of arithmetic by Corbaz has been much used, and the method it outlines is followed. In the first school-year intuitive calculations, limited to the number of twenty, are made, the four operations being treated simultaneously, and the Froebelian method being followed. The development may be outlined as hereunder :—

(i) Study of numbers, and of their various possible combinations, by means of such objects as beans, pieces of cardboard, sticks, cubes, etc.

(ii) Representation of objects by means of signs, viz., points, lines, or other marks.

(iii) Representation by means of numerals. (With children from 7-8 years of age; copy-books ruled in small squares are used for work.)

(iv) Abstract, *i.e.* (mental) calculation, limited to the same series of numbers. Mental arithmetic designed to develope dexterity.

(v) Various operations, including the four series of operations.

(vi) Simple oral problems in arithmetic.

(vii) Simple written problems.

In the second year, with the children from 8-9 years of age, the same *method* is followed with higher numbers, etc. From the third year to the sixth, the initiative of the pupil is called upon more and more, and the problems increase in difficulty.

With the Swiss, as with the German, arithmetic is divided into the stages intuition, abstraction, and application.

To make the teaching realistic, the metric weights and measures are not merely talked about, they are shewn, so that children in solving problems referring to them are led to have definite ideas as to the terms of the problem, and the significance of the answer.

Care is taken that all problems given shall be related to familiar things, as for example to industrial, commercial matters, about which the child is likely to know something, or it may be to matters concerning agricultural or general rural economy. In problems involving money matters, care should be taken that the prices quoted are real, so that in the exercises the child is learning the facts of every-day life.

Some of the forms of writing out arithmetic were very brief. In Saxon schools, for example, the dot is used as the sign of multiplication and the colon as the sign of division. Thus, 12×3 is written 12.3, and $81 \div 9$ is written 81:9. Fractions, if less than four figures in numerator or denominator, are written 631/927, and longer ones with the horizontal line. A comma is used for the decimal point.

Multiplication is set out as follows :—

(1) 347×436

(1) 347 . 436

1388
1041
2082
151292

(2) $3586 \div 17$

(2) $3586 : 17 = 210^{16}/_{17}$

34
18
17
16

Or, more briefly (2a)—

$3586 : 17 = 210^{16}/_{17}$

18
16

Or, yet again (2b)—

3586 : 17
$210^{16}/_{17}$

Additions of improper fractions are set out as follows :—

(3)
24
$3^1/_2 = 12$
$4^2/_3 = 16$
$3^5/_6 = 20$
$7^5/_8 = 15$
$19^5/_8 = {}^{63}/_{24} = 2^5/_8$

2 . 3 . 6 . 8
2.) 3 . 4

(4) $2^5/_8 : 1^2/_3$
$^{21}/_8 : {}^5/_3$
$^{21}/_8 : 5 = {}^{21}/_{40}$
$^{21}/_{40} . 3 = {}^{63}/_{40} = 1^{23}/_{40}$

Problem : $2\frac{1}{2}$ kilogrammes cost 13,55 marks, what will $14\frac{1}{2}$ kilogrammes cost ?

(5)
Lower Classes.
$^5/_2$ kg = 13,55 M.
$^1/_2$ = 2,71
1 = 5,42
14 = 75,88
$^1/_2$ = 2,71
78,59 M.

(5a)
Cancelling.
$\frac{13,55 . 2 . 29}{5 . 2} = 27,1 . 29 = 78 \cdot 59$ M.

(5b)
Practically.
kg = 13,55 M.
15 = 81,30
/ = 2,71
78,59 M.

3.

[1] There are several books specially worthy of mention in connection with teaching of arithmetic. These will be later mentioned.

3. *Belgian programme in Elementary Arithmetic.*—The methods of teaching arithmetic in the different countries of Europe are very similar. Some indication of the detailed programmes of several countries has been given—for example, those of Switzerland and Germany (see Chap. V, sect. 5, 6, 8; Chap. VI, sect. 14); reference may be made to these for detailed information.

With a view to still more fully illustrate the continental method, a translation for the communal primary schools of Belgium is here given. The subject of arithmetic is in Belgium known by the title hereunder.

ELEMENTS OF CALCULATION AND OF THE LEGAL SYSTEM OF WEIGHTS AND MEASURES IN THE BELGIAN PROGRAMME FOR COMMUNAL SCHOOLS.

Lower Division (A).—Mental calculation, both intuitive and with numbers.

(1) The formation, the name, and the numerical representation of the first 10 numbers. The four fundamental operations *combined* with these numbers. (The italics are in the original.)
(2) Similarly with the numbers 10 to 20; then with the numbers 20 to 100; specially noticing such as are products included in the multiplication tables.
(3) Methodical review of the multiplication table, and its application to the division of the numbers from 10 to 100, by the first 10 numbers.
(4) Recognition and representation of tenths and hundredths of a unit; the four fundamental operations *combined*, with these numbers.
(5) The formation, the name, and the numerical representation of fractions where the denominator does not exceed 10.
(6) Exercises and applications, part being given by the teacher and part being composed by the pupils.

Note.—Whenever possible, recourse should be had to graphical methods of representing the numbers. The mental and numerical calculation should be so advanced in the lower degree that the former shall furnish the foundation, explanation, and reasoning of the four operations of numerical calculation.

Lower Division (B).—Legal system of weights and measures.

(1) Intuitive and practical recognition of the metre, litre, gramme, and franc. Their multiples and submultiples (restricted to deca-, hecto-, deci-, centi-). Exhibit, and require the children to handle the measures, weights, and coins, and make the children measure, weigh, and count.

It may be mentioned that light imitation coins are used for the purpose of practice in counting money. The schools are so equipped, also, that measurements and weighings may be made.

Middle Division (A).—Mental calculation, intuitive and numerical.

(1) Repetition, recapitulation of the four operations for the first 100 numbers, similarly with the tenths and hundredths of a unit.
(2) Practical knowledge of verbal and written numeration, first of whole numbers, then of decimal numbers.
(3) The four fundamental operations applied to the above in a progressive order, and with very simple reasoning. Elementary explanation of the aim and utility of each of the operations.
(4) Numerous exercises and problems, borrowed from the affairs of ordinary life, from trades, agriculture, industries, etc. Several easy questions upon simple interest, proportional division, matters relating to savings and discount banks.

Note.—The exercises and problems are to be treated by mental calculation in every case where the use of short methods is possible. The choice of examples is to be such as to render such cases of frequent occurrence.

(5) Formation, description, and numerical representation of ordinary fractions.
(6) Conversion of an ordinary into a decimal fraction. Application by numerous examples

Middle Division (B).—Legal system of weights and measures.

(1) Intuitive and practical exhibition of the system of weights and measures.
(2) Relations of the measures with one another.
(3) Exercises and common problems affording examples of the applications of the metric system, some of these being appropriate for treatment by rapid mental calculation; others by numerical calculation.

Higher Division (A).—Arithmetic and mental calculation.

(1) Rational exposition of the system of numeration with whole and decimal numbers.
(2) Very elementary theory of the four fundamental operations with whole and decimal numbers. Proof of these operations. Finding the quotient of two whole numbers, diminished by about 0, 1, 0, 01, and 0, 001. Explanation of theorems upon which simplifications to be used are founded, especially in the case of rapid mental calculation.
(3) Characters of divisibility by 2 and 5, by 4 and 25, by 8 and 125, by 9 and 3, etc.
(4) Definition of a prime number, and of numbers that are prime in relation to one another. Application to division by 6, 12, 15, 18, 21, ... 35, ... , of the following principle (without demonstration):—*If a number be divisible by two or more numbers that are prime to one another, it is divisible by their product.*

To find the greatest common divisor of two or several numbers by the process of successive division.

(5) Elementary theory of ordinary fractions. Origin and definition. Numeration. Fundamental properties. Simplification of fractions. Reductions of fractions to the same denominator. Fundamental operations. Conversion of ordinary into decimal fractions. Applications.

(6) Method of reduction to unity applied to questions upon the following :—Rule of three, simple interest, profit and loss evaluated in percentages. Foreign exchange. Proportional divisions and partnerships. Calculation of means. Savings and discount banks. Shares.

(7) Solution of problems relating to matters in ordinary life, *e.g.*, the trades, domestic economy, agriculture, etc. Exercises in invention, or problems composed by pupils.

Higher Division (B).—Metric System.

(1) General recapitulation of the metric system.

(2) Application of the measurement of superfices to the calculation of the area of the parallelogram, triangle, trapezium, polygon, and circle.

(3) Application of measurements to the calculation of the volume of a prism, cylinder, pyramid, cone, and sphere.

(4) Relation between weight and the measure of volume or capacity.

Note.—The exercise in the problems should be treated by mental calculation whenever the given combinations or the numerical data admit of the use of short methods founded upon established principles, and especially on the use of arithmetical complements.[1]

The preceding programme fairly well represents the continental method in arithmetic, which, as may be readily seen, is very different from the method followed in this State and, generally speaking, in England. It is recognised in Europe that there is no advantage in requiring pupils to undertake tedious sums involving a large number of figures such as are never required in ordinary practice, and would be avoided by professional computers.

4. *Arithmetic for Swiss Teachers.*—To form a correct opinion as to the teaching of arithmetic it is necessary to know not only the programme in the subject for pupils, but also that for primary teachers during their career as student teachers. The following is the course in the training college of Küsnacht, Zurich, Switzerland. The algebra is also mentioned.

From the "Lehrplan" of the Seminarium for Primary Teachers, Küsnacht.

Class I.—

(a) *Computation* (Rechnen).—Brief recapitulation of final accounts and simple book-keeping, Culculations of cost and profits, mental arithmetic. Written arithmetic with abbreviated operations Proportions and partnerships, etc.

(b) *Arithmetic.*—The operations of the first and second degrees, with common numbers, and the idea of rational numbers. The theorems concerning powers with integral exponents.

(c) *Algebra*—Equations of the first degree with one unknown. Problems leading to equations of the first degree. (Eingekleidete Aufgaben.)

Class II.—

(a) *Book-keeping.*—Current accounts with dividends, etc., use of dividend and similar tables; outlines of double entry, limited to a single simple business.

(b) *Arithmetic.*—Extraction of square and cube roots. Irrational numbers Involution with real numbers, prime numbers. Simple theorems of divisibility, etc.

(c) *Algebra*—Systems of equations of first degree with several unknowns. Problems leading to equations of the first degree.

Class III.—

(a) *Arithmetic.*—The theory of common logarithms. Arithmetical and geometrical progressions. Computation of interest and income, etc.

(b) *Algebra.*—Theory and solution of equations of the second degree with one unknown.

Class IV.—

(a) *Arithmetic.*—The principle ideas of combinations. The elements of the calculation of probability with application to assurance, etc.

5. *Bibliography of Treatises on Arithmetic used in several Countries.*—For those who desire to compare the teaching of arithmetic in Europe with the teaching in England and English-speaking countries the following treatises on elementary arithmetic will be of service. No attempt has been made to make a complete bibliography of the subject, nor was it possible to ascertain all the works regarded as of great merit.

Austria.—Praktische Anleitung zur Behandlung des Rechenunterrichts in der Volksschule. 2 vols. Karl Streng und Joseph Zuckersdorfer, Wien.
Lehr-und Uebungsbuch der Arithmetik für Unterrealschulen. 3 vols. Franz Villicus, Wien.
Arithmetische Aufgaben . . . für die unteren Klassen der Realschulen. 2 vols. Franz Villicus, Wien.
Arithmetische Aufgaben . . . für Untergymnasien. 2 vols. Franz Villicus, Wien.

France.—Mon Arithmétique. Hachette, Paris.
Arithmétique élémentaire. 2 vols. Maire, Paris.
Nouvelle arithmétique des écoles primaires. Ritt, Paris.
Eléments d'arithmétique et de géométrie, et d'algebre. Voutejoux, Paris.
Arithmétique des écoles primaires. G. Bovier-Lapierre et Ch. Fleuriot, Paris.
Cours complet d'arithmétique appliquée. G. Bovier-Lapierre, Paris.
Leçons d'arithmétique et de géométrie. T. Lang and F. Bruel, Paris.
Arithmétique (Petite). Eyssèric et J. B. Gautier, Paris.
Cours élémentaire d'arithmétique. Eyssèric, Paris.
Nouvelle arithmétique théorique et pratique. Eyssèric, Paris.
Calcul mental. Ch. Fleuriot, Paris.
Nouvelle méthode de calcul oral. G. Bailly, Paris.
Simples notions d'arithmétique théorique et pratique. P. D. Poujol, Paris.
Arithmétique agricole. J. H. Fabre, Paris.
Cours d'arithmétique. Grandgaignage, Paris.
Cours complet d'arithmétique. André, revu par Firemann, Paris.

Germany.

[1] Règlement et Programme Types des Ecoles Primaires Communales Belgique, pp. 24–28.

Germany.—Zur Reform des Rechenunterrichts. R. Knilling, München.
Das Rechnen. Tanck, Meldorf.
Der Rechenunterricht. Dr. Hartmann.
Die natürliche methode. Fitzga.
Wegweiser zur Bildung heimatlicher Rechenaufgaben. Teupfer, Leipzig.
Problèmes du calcul. Ducotterd, Neuchâtel.
Problèmes du calcul mental. Ducotterd, Neuchâtel.
Aufgaben zum praktischen Rechnen. H. Heer.
Aufgaben über das Rechnen. Franz Nager, Altort.
Rechnungslehrmittel. J. C. Hug, Zurich, 1896.
Switzerland.—Rechnungsbüchlein für die 1 bis 5 Klasse. H. Maag, Zurich, 1896.
Aufgaben für den Unterricht im Rechnen. H. Wydler, 1894.
Aufgaben zum schriftlichen Rechnen u. Rechnenbuch. T. Stöcklin, Liesthal.
La deuxième année d'arithmétique. P. Leyssenne, Paris.

The above books can be obtained at any of the prominent educational booksellers in the places mentioned.

6. *General remarks concerning the teaching of Arithmetic.*—Any fundamental improvement in the teaching of arithmetic must aim at associating it more closely with other branches of mathematics, and at a more thorough abandonment of non-rational (*i.e.* rule-of-thumb) processes. Although, of course, it is impossible in any scheme of arithmetic teaching to wholly dissever it from other forms of mathematics, yet the tendency in English teaching has been in such direction. This is clearly implied in almost any English work on the organisation and principles of education. For example, in Gladman's "School-work" (6th edition, p. 199), this dissociation is clearly implied in the following passage. After stating that arithmetic "has been styled the 'mathematics of the elementary school,'" Gladman says that "it ought in its measure to afford the same kind of training . . . which the more advanced scholar derives from the study of algebra, geometry, and the other branches of mathematics." The modern idea is rather that the principles of mathematics should, as far as possible, unify its different forms. Much that is said in "Landon's Principles and Practices of Teaching and Class-management" (1902, pp. 324–5), really applies to the principles of mathematics rather than to those of arithmetic specially. Some of his directions are in conflict with the views of mathematicians and arithmeticians in Europe. For example, he quotes Grube's method with approval (see p. 340). While it is generally admitted that it is very desirable to educate children in such a way that numbers shall not be pure abstractions, and so that they shall throughout form concrete ideas as to what the numbers may represent, it is doubtful whether the detailed following of Grube's method is to be desired. On this point Seyfert says:—"Demnach ist auch die Grube'sche Methode, die jede Zahl für sich behandelt, die aber auch sonst noch vielerlei Mängel hat, nicht zu empfehlen." (Accordingly Grube's method, which treats each number separately, but which however has many defects, is not recommendable.) That it is desirable to treat a few of the smaller numbers by Grube's method would probably be admittted on all sides, but its over-development is tedious and unnecessary.

In Chapter XXIII, section 44, on the teaching of Geometry in Primary Schools and its reform, the Report of the Committee on the Teaching of Mathematics of the British Association for the Advancement of Science, is given. The paragraphs referring to Arithmetic and Algebra are for convenience here repeated, and are as follows:—

"*Arithmetic and Algebra.*—The Committee are of opinion that, in the processes and explanations belonging to the early stages of these subjects, constant appeal should be made to concrete illustrations."

"In regard to arithmetic, the Committee desire to point out what has been pointed out so often before, that, if the decimal system of weights and measures were adopted in this country, a vast amount of what is now the subject-matter of teaching and of examination could be omitted as being then useless for any purpose. The economy in time, and the advantage in point of simplification, would be of the greatest importance. But such a change does not seem likely to be adopted at present; and the Committee confine themselves to making certain suggestions affecting the present practice. They desire, however, to urge that teachers and examiners alike should deal with only those tables of weights and measures which are the simplest and of most frequent practical use."

"In formal arithmetic, the elaborate manipulation of vulgar fractions should be avoided, both in teaching and in examinations; too many of the questions that appear in examination papers are tests rather of a mechanical facility than of clear thinking or of knowledge. The ideas of ratio and proportion should be developed concurrently with the use of vulgar fractions. Decimals should be introduced at an early stage, soon after the notion of fractions has been grasped. Methods of calculation, accurate only to specified significant figures, and, in particular, the practice of contracted methods, should be encouraged. The use of tables of simple functions should be begun as soon as the student is capable of understanding the general nature of the functions tabulated; for example, the use of logarithms in numerical calculation may be begun as soon as the fundamental law of indices is known."

"In regard to the early stages of algebra, the modifications (both in teaching and in the examinations) which are deemed desirable by the Committee are of a general character."

"At first, the formulæ should be built on a purely arithmetical foundation, and their significance would often be exhibited by shewing how they include whole classes of arithmetical results. Throughout the early stages, formulæ and results should frequently be tested by arithmetical applications. The arithmetical basis of algebra could be illustrated for beginners by the frequent use of graphs; and the practice of graphical processes in such cases can give a significance to algebraical formulæ that would not otherwise be obtained easily in early stages of the subject."

"In passing to new ideas, only the simplest instances should be used at first, frequent reference still being made to arithmetical illustrations. Advance should be made by means of essential development avoiding the useless complications of merely formal difficulties which serve no other purpose than that of puzzling candidates in examinations. Many of the artificial combinations of difficulties could be omitted entirely; the discussion of such as may be necessary should be postponed from the earlier stages. Teachers and examiners alike should avoid matters such as curious combinations of brackets; extravagantly complimented algebraic expressions, particularly fractions; resolutions of elaborate expressions into factors; artificially

artificially difficult combinations of indices; ingeniously manipulated equations; and the like. They have no intrinsic value or importance; it is only the mutual rivalry between some writers of text-books and some examiners that is responsible for the consideration which has been conceded to such topics."

"*General Remarks.*—If general simplification either on these or on similar lines be adopted, particularly if graphical methods are freely used, it will be found possible to introduce, quite naturally and much earlier than is now the case, some of the leading ideas in a few subjects that usually are regarded as more advanced. Thus the foundations of trigonometry can be laid in connection with the practical geometry of the subject-matter of the Sixth Book of Euclid. The general idea of co-ordinate geometry can be made familiar by the use of graphs; and many of the notions underlying the methods of the infinitesimal calculus can similarly be given to comparatively youthful students long before the formal study of the calculus is begun."

Regarding the details of teaching, the remarks in a paper on "The Study of Arithmetic in Elementary Schools"[1] by Mr. A. Sonnenschein may be noticed:—

"It is not an accidental coincidence that only civilised nations have in all times attached great, and occasionally even superstitious, value to the Study of Numbers, and in all Christian communities the three subjects of Reading, Writing, and Arithmetic (our three R's) are regarded as the primary and indispensable branches of Elementary Education. . . . . Why do we teach the more advanced stages of Arithmetic in our public and private Elementary Schools? Or, in other words: What mental or moral benefit do we hope to confer on our pupils by this study?" (p. 571).

He answers this question by stating that it is because of its educative value. He then sketches three methods:—

(a) The mechanical method of giving the rule first, instead of at last.
(b) The method of demonstrating the rule, a method which though better than the last is still defective.
(c) The investigation on heuristic method.

Mr. Sonnenschein then gives several examples of these methods, which need not be here repeated.

He says, however (p. 583), that "No good teacher will follow the order of the text-book, for this "proceeds *logically*, while the teacher proceeds *psychologically*."

He points out the real reason for practice in the multiplication tables, etc., and practice in computing; and as a means to an end he recommends the following rules which are worthy of mention:—

(a) Great neatness of work both in the shape and distinctness of the figures and in their orderly arrangement;
(b) Absolute mastery of the Addition, Multiplication, and Shilling and Pence tables, so as to secure:—
(c) Great rapidity of work, the mind of the slow computer being apt to wander;
(d) The adoption of regular, concise, and rhythmic wording in actual working;
(e) Rapid and continuous mental application of tests of accuracy, such as casting out nines and elevens, etc.;
(f) When errors are detected, the computer ought to watch what particular mistakes he is prone to commit and strive to avoid them."

The mode of teaching in Europe embraces the merits of the heuristic method. That method is not uniquely *the* method of education, though undoubtedly it can be *wisely* used with advantage.

7. *The Metric System.*—By way of comment on the recommendations in the preceeding sections, it may first of all be said that probably the only practical way in an English community to bring about the adoption of the Metric System is to accustom the school-children to the units of the system, so that they will have *real* knowledge of the metre, litre, and kilogramme, and will be able to readily describe the lengths, surfaces, volumes and weights of various objects in terms of those units.

It ought to be mentioned that the great majority of persons of experience, who have given the matter serious consideration, recognise that in Trade and Commerce the English nation is being increasingly handicapped, and subjected to disadvantages which tend to become greater by its failure to adopt the Metric System. Popularly as far as any *real* knowledge is concerned, it is unknown. When a statement expressing the size or weight of anything in metrical units is made, it fails to awaken any distinct conception as to what is meant. With scientific men, the system is already in vogue, but that avails little. For one generation we must learn both systems in order to make the change.

Touching the remainder of the recommendations, it may be said that it would be difficult to more fitly express the changes that are so eminently desirable in our teaching; and it ought to be frankly admitted that to make these is simply to abandon our own methods of procedure, and to adopt the best methods of Europe. The question of reform, however, will be referred to hereinafter.

8. *The Teaching of Algebra.*—The fundamental conceptions of algebra, or at least of *ordinary* algebra, are substantially identical with those of arithmetic. It is not difficult, therefore, to make a commencement in elementary algebra at a very early stage in the educational career of a child. There is no real difficulty in realising that a letter can stand for *some* quantity which may or may not have an invariable value, and there will be considerable advantage if instruction in algebra and arithmetic were, as far as possible collateral. In our system of teaching here and also in our system of examinations, we have even gone so far as to reject algebraic solutions of questions set in arithmetic. The tendency in Europe, where the mathematical teaching is undoubtedly better than with us, is to unite and not to sever these two subjects, as has been previously remarked herein.

The principles of studying algebra are practically the same as in the case of other subjects. In the courses in algebra too much time has often been spent over the details of each stage. Rapidly extending the attack on the subject over the elementary parts of its whole range, then dealing with detail in successive recapitulations, would have been a far more profitable method of studying it than in going into detail initially. The ordinary system not only involves great waste of time in solving all sorts of algebraic tricks, it makes it impossible to acquire a comprehensive view of algebra, because it leaves insufficient time. The command of a wider range confers *power* in a much more satisfactory way. 9.

[1] Special Reports on Educational Subjects, London, 1902, Vol. 8, pp. 571-585.

9. *The connection of Algebra and Geometry.*—Some connection has occasionally been made between algebra and geometry by accepting algebraic proofs of the propositions of the second book of Euclid's Elements, or by using the algebraic proof illustrationally. This connection has, of course, its value; but the construction of the geometrical forms which constitute the graphs of algebraical expressions is of much higher importance. This process reveals the contact between arithmetic and algebra on the one hand, and between algebra and geometry on the other.

A side of algebra rarely, if ever, touched in the primary teaching of this State is vector algebra. There is absolutely no difficulty in introducing conceptions of directed quantities in the primary school, the complications of the subject being, of course, avoided.[1]

The passage from the idea of arithmetical to algebraic quantity, and from algebraic quantities to vectors, which really after all present themselves in algebra, may be made very simple, and with the great advantage that many propositions become obvious merely as it were from enlarging one's point of view. Professor Perry has strongly advocated the introduction of vectors into elementary mathematical teaching; and would illustrate the subject by pointing out the nature of a scalar product, and the product of two given vectors. He would also outline the fundamental conceptions of vector algebra.

10. *The connection between Algebra and Arithmetic.*—Many questions proposed in arithmetic are much more readily analysed by algebraic methods, and should be so solved. The mental discipline involved by the more difficult method can be obtained by passing to other matters of greater profit. Besides this, there are many problems of a practical character that are not treated in ordinary arithmetic or algebra. Professor Perry, in his recommendation to use squared paper and freehand curves, had such facts in his mind.[2] The approximate solution of problems, the treatment of approximate numbers, the management of abbreviations, may be instanced.

The general practice of giving only such problems in arithmetic and algebra as are susceptible of unique solution is subject to the criticism that in applications to the affairs of everyday life unique solutions are often impossible; consequently, simple examples giving some idea of how to proceed in such cases are of value, not only *practically*, but educationally. For instance, a solution with two or more equations to determine one unknown, three or more equations to determine two unknowns; the effect of an uncertainty in any term in a problem; the treatment of negligible quantities, and so on.[3]

In this connection it may be mentioned that long multiplication questions, and compound interest sums, solved by raising to a power corresponding to the number of terms are really a great waste of time. It would be far preferable to make children acquainted with the very rapid practical way of treating such problems.

11. *Theory of Algebra.*—In teaching algebraic theory, it is desirable that the laws of association, commutation, and distribution, and also the principles of substitution be taught first *implicitly*, at this stage arithmetic and ordinary algebra being taught together, for these laws would apply equally. In the advanced stage these laws ought to be taught *explicitly*, and finally their limited character would be pointed out, and the fact revealed that not only do they not hold for all operations, but that besides ordinary algebra there are other algebras in which the ordinary laws of operation do not hold.

In the higher primary school it will be possible to get as far as the elementary treatment of complex numbers—viz., $a+bi$, where i denotes $\sqrt{-1}$. These numbers ought to be explained graphically —as, say, by what is known as Argand's diagram.[4]

There are several parts of algebra to which insufficient attention is usually given; for example, homogeneous functions, symmetry, the principle of indeterminate coefficients, the possibility of geometrically representing functions (*i.e.*, graphics), the significance and representation of such roots as $x+yi$ above referred to, the significance of determinants, methods of calculating their values.[5] The graphs of circular functions, and of also other functions as hyperbolic could be introduced. Instead of occupying time in attempting to develope mere mechanical expertness, and in the solution of ingeniously devised algebraic problems, it is better to extend the range.

To treat these subjects on these lines, trained teachers will be needed; in fact this is the only possible way to ensure satisfactory teaching.

12.

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[1] In a paper entitled "From Number to Quaternion," by M. Gaston Fleuri, published in the Royal Society's Journal for 1894 (vol. 28, pp. 65-93), attention was drawn to the nature of generalised number and to the theory of operation with it. It is known to the Commissioners that M. Fleuri believed in teaching the nature of scalars and vectors quite early in the school career.

[2] An example will perhaps indicate more clearly what is meant. Suppose it be required to make a price-list for a series of articles of, say, 7 different sizes, the cost having been accurately ascertained for the 1st, 4th, and 7th sizes. From these it is seen that the linear relation does not hold—that is to say, the 7th size is actually cheaper than simple proportion, based on the 1st and 4th, would indicate. Let the sizes be plotted as abcissæ, and the cost as ordinates for the three known cases. Then any curve of the 2nd degree being drawn through the 3 points so determined, the ordinates at 2, 3, 5, and 6 will generally represent very nearly the real cost for those sizes.

[3] By way of illustration: Suppose $\sqrt[4]{80}$ be required, $80=(3\times3\times3\times2{\cdot}9629)$,—*i.e.*, $3^3\times(3-0{\cdot}03704)=\left(3-\frac{0{\cdot}03704}{4}\right)^4$ approximately, $=2{\cdot}99074$. The correct answer is 2.99069. . . Approximate values of roots are sometimes readily found in this way.

[4] In 1685, Wallis proposed to construct imaginary roots by going out of the line on which, if the roots were real, they would be constructed. H. Kühn, of Danzig, in 1750-1 represented $a\sqrt{-1}$ as a line of length and perpendicular to the direction of a ordinarily. Argand did not publish his "Essai sur une manière de représenter les quantités imaginaires dans les constructions géometriques" till as late as 1806.

[5] If nothing more were done than to explain how a determinant is read (for example that—

$$\begin{vmatrix}a_1b_1\\a_2b_2\end{vmatrix}=a_1b_2-a_2b_1 \qquad \begin{vmatrix}a_1b_1c_1\\a_2b_2c_2\\a_3b_3c_3\end{vmatrix}=a_1b_2c_3-a_1b_3c_2+b_1c_2a_3-b_1c_3a_2+c_1a_2b_3-c_1a_3b_2),$$

in the higher primary school, it would be some advantage. One only needs to introduce the subject; it would perhaps be unwise to attempt more.

12. *Co-ordination of Arithmetic, Algebra, Geometry, Planimetry, and Stereometry.*—It is easily possible to make the exercises in any one branch of mathematics of service in the others, and to apply the arithmetic, geometry, and algebra, etc., to questions of manual work, to geometrical drawing, etc. Teachers educated and trained as in Europe will have no difficulty in so co-ordinating their work, and children can easily be made to feel interested in problems that, instead of being purely abstract, have a definite application to something else which they are doing. (For example, in carpentering, the extraction of a square root so as to find an hypotenuse, viz., $c = \sqrt{(a^2 + b^2)}$, also that if b be small compared with a, then $c = a + \frac{b^2}{2a}$ very nearly, and so on.)

The whole secret of interest is to make the examples as *realistic* as possible, and to co-ordinate the different branches of mathematics.

One can see at once what advantages can be made to flow from a training and education of the teaching staff comparable to that undertaken in European countries.

Something of the connection between geometrical drawing, practical, descriptive, projective, and analytical geometry, trigonometry and surveying, and the subjects of arithmetic and algebra has been indicated in sections 53 to 60, Chapter XXIII. For primary education, all these may be practically orientated without losing in educative value.

13. *Conclusion.*—Reform in the teaching of Arithmetic and Algebra so as to maintain its connection with other mathematical subjects involves practically the following of the recommendations of the Committee of the British Association of Science. The conclusions which are suggested are as follows:—

(1) The four fundamental operations of arithmetic should be taught intuitively and simultaneously.

(2) A much larger quantity of "mental arithmetic" should be undertaken, the written work being wholly based on the mental.

(3) All arithmetical processes should be rationally understood, and the working by "rule" introduced *after*, and not *before*, the process is understood.

(4) The teaching according to the "logical order" should be abandoned, and the "psychological order" followed—*i.e.*, the range should extend over the whole of arithmetic as soon as possible, the very *simplest* cases being first taken, and the complexity advanced as the work proceeds.

(5) Algebra of a simple character should be early introduced and taught on the same principles as arithmetic.

(6) The spirit, and to a great extent the letter, of the British Association's recommendations should be carried out in the teaching of the State

(7) The subjects, arithmetic and algebra, should be taught in conjunction with geometry, planimetry and stereometry.

(8) Examples in arithmetic should be *real*—*i.e.*, drawn from the life-surroundings, which can be really appreciated by the child.

(9) Care should be taken that none of the examples introduce false conceptions.[1]

(10) All opportunities of *real* applications of mathematical subjects should be embraced in the working plan of the school, so as to create interest and to ensure a real understanding of the work.

(11) The teaching should not merely follow text-books, but the European methodology of teaching the subject should be studied by the teachers.

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[1] In Chap. XLI, Sect. 13, an example is given of a question which will engender a *false* conception of a phænomenon.

CHAPTER XXVI.

CHAPTER XXVI.

Natural Science in the Primary Schools.

[G. H. KNIBBS.]

1. *Introduction.*—The necessity of "Natural Science" finding a place in the curriculum of primary schools is fully recognised throughout Europe and America, and in all forward educational movement in the United Kingdom. The significance of the part that Science plays in the ordinary affairs of modern life is not only beyond contention, but is so thoroughly appreciated, that in the last decade considerable changes have been made in its teaching. Continental schools are specially equipped for scientific instruction, thus standing in marked contrast with our own and English schools. During the last ten years the imperative demand made by the conditions of modern life for better scientific education, not only for the captains of industry and commerce, but also for the rank and file, has been widely recognised, and perhaps especially so in Germany and Switzerland. Efforts are being made in England to move in the same direction, for the wide-spread recognition that the teaching the three R's is a wholly inadequate conception of the necessities of public education is forcing itself upon all thoughtful individuals who have acquaintance with the facts.

We have not yet officially recognised in this State the need for change in this matter. It is true that some very elementary science in the shape of object-lessons, etc., is taught in the public schools of this State; but there is no *systematic* scientific teaching—*i.e*, in the sense that such exists in the primary schools of the continent of Europe, or of America. That Science is practically unrecognised is testified by the curricula of our colleges for training teachers. In so far as teachers have been possessed of any true scientific knowledge, it is either by attendance at the University, at the Technical College, or through extra-official work. And speaking generally, the teachers of the State have not been educated in the Natural Sciences, as they have in Europe, in America, or as they are now being educated in England.

If the industrial and commercial efforts of this State are to flourish, it must, equally with other countries, avail itself of the resources of Science, and a sufficient elementary knowledge must be provided in the primary school to give that taste and aptitude through which alone scientific discovery can be properly appreciated and applied in the practical affairs of life. The foundation, necessary for profiting by such teaching as may be supplied in lower or higher agricultural schools, must be laid in the primary school.

The day has gone by when it is necessary to argue the *educative value of scientific teaching.* It is thoroughly realised that in the absence of a general knowledge of the natural sciences, not only is the outlook on the world gravely limited, but also that the trend of history, especially as regards the drift of human affairs under present conditions, can be only very partially understood. Literary culture, standing alone, even from the *liberal* point of view, to say nothing of the practical, is intrinsically lop-sided; so that whether one regards education for the higher or lower classes, the result is the same, viz., that as a whole the community ought, during the primary school life, to get a general idea of the range and subject-matter of Science. That the foundations on which we can afterwards build should be laid in the primary school is obvious.

It is being vividly recognised in England that the education of teachers in order that they may teach Science, must not in the future be neglected as it has been in the past. At the same time, in taking the United Kingdom as a whole, its elementary teaching in Science in the primary schools is limited and defective, though much in advance of science-teaching in this State.

2. *Teaching of Science in English Primary Schools.*—The partial realisation of the importance of properly qualifying primary school teachers to teach the natural sciences, is shewn by the modern developments in recent equipments of the English training colleges, and by what is being attempted in their curricula. At last it is admitted that scientific knowledge, if real, has to be acquired *heuristically*, and that reading scientific literature is not necessarily learning science; in fact, the wholly unsatisfactory character of the literary method of learning science is fully understood, and in order to put its teaching on a proper footing, English training-schools are now equipped with the physical and chemical laboratories, etc., essential for real teaching. There is every reason to believe that in the very near future the teaching of Science in English primary schools will be better worthy of the name than it is at present, and, certainly, English primary teachers will be better qualified to give instruction in scientific subjects.

3. *Literary methods of learning Science.*—It is a truism to all persons who have any real scientific knowledge *that Science cannot properly be learnt by literary methods.* Scientific information and scientific knowledge are, with a great many people, supposed to be collateral terms. It is desirable, therefore, to point out that those whose claim to scientific *knowledge* is beyond dispute, draw a distinction between these things; and that they regard the literary method of obtaining information about Science as unsatisfactory, at least for those who are to *instruct* others in the subject. In a paper entitled "The Heuristic Method of Teaching,"[1] Professor Henry E. Armstrong, as far back as 1898, speaks as follows in contending against bad methods of learning Science. He says:—

"*Science is taught unscientifically—by literary methods in fact,*[2]—without regard to its essentially heuristic character. Had the literary party command of the methods we are seeking to introduce, they would long ere this have effected the reforms we desire to bring about, the field having been in their possession for generations. Either this is true, or they are incompetent to understand and use the weapons at their disposal. . . . . .

"It must from the outset and ever be remembered that *the great object in view in education is to develope the power of initiative and in all respects to form the character of the pupil.*[2] The appreciation of this contention is crucial. 'The pious Pestalozzi is filled with measureless remorse when he finds that he has

[1] Special Reports, Dept. Education, London, Vol. II, pp. 389-433.
[2] Not italicised in original.

has given a little boy a conception, instead of inducing him to find it himself,' remarks Professor Meiklejohn. So should every teacher be; and if the feeling expressed in this sentence can but be made to rankle in the mind of every teacher, the end is achieved. Schools will then become educating institutions: the didactic instruction which poisons our *existence at the present day will be properly recognised as a fell disease.* . . . . . The whole policy of the teacher's duty is summed up in one little word, yet the most expressive in the English language; it is to train pupils to *do*. On this it is easy to base a simple test of competency. Children are thus encouraged to look about them—to be properly inquisitive and inquiring. . . . . The power of *reasoning from observation* is cultivated in every possible way—a logical habit of mind is thus developed. The use and value of evidence becomes obvious, and that 'nothing may be taken for granted' is insisted on. The faculty of reasoned judgment is cultivated."

Professor Armstrong's argument may be summed up in the phrase that "teaching should be realistic." Children should, as far as possible, get knowledge at first hand; consequently, so also should the teacher. Both should get knowledge rather than acquire information; they should, as it were, touch facts directly not indirectly. Literary methods call into exercise *memory as to statements of facts*; realistic methods call into exercise the *memory of the facts themselves.* It may be added that the question is regarded in Europe as not needing discussion. The eminent scientific men with whom the Commissioners had an opportunity of meeting and discussing the question in England held the same view.

At Belfast in September last year (1902), a special committee of the British Association for the Advancement of Science presented a Special Report on the Teaching of Science in elementary schools, *vide*, pp. 481–483. This is given hereunder.

4. *The Belfast Report on the Teaching of Science in Elementary Schools.*—At the Belfast meeting above referred to, the report on Elementary Science teaching presented by the Committee, the members of which were, Dr. J. H. Gladstone (Chairman), Professor H. E. Armstrong (*Secretary*), Lord Avebury, Professor W. R. Dunstan, Mr. George Gladstone, Sir Philip Magnus, Sir H. E. Roscoe, Professor A. Smithells, and Professor S. P. Thompson, was as follows:—

"The introduction of the Block grant, in place of the former Examination grants in Elementary Day Schools, deprives your Committee of the opportunity of giving the usual statistical data as to the number of children receiving instruction in scientific subjects. The loss of this interesting information is, however, more than made up by the satisfaction of knowing that the teachers are now more free to adopt true educational principles than when they were trammelled by the necessity of preparing their scholars for an official examination, on the result of which the financial position of the school would be dependent.[1]

"One of the returns of the Board of Education does, however, afford some indication of the measure of attention given to certain subjects as compared with others. According to this, the number of departments in which subjects of a more or less scientific character are taken are as follows, though the number of scholars is no longer given. The numbers are for schools in England and Wales:—

Algebra	1,266	Elementary Physics and Chemistry	152
Euclid	105	Animal Physiology	413
Mensuration	387	Hygiene	34
Mechanics	866	Botany	138
Chemistry	185	Principles of Agriculture	20
Physics	109	Domestic Economy or Domestic Science	1,076

"These correspond with what were formerly known as specific subjects of instruction.

"In the case of the Evening Schools, your Committee are able to continue the tabular statement for another year. Though the total given is somewhat larger than in the two years immediately preceding, it will be noticed that in Mathematics and Physics there is a general falling off, the only increases worth noting being in those subjects that may be more appropriately designated 'applied science.'

"Both the Day and the Evening Schools are now passing through a crisis in their history, and may be regarded as in a transition state. The Day Schools, under School Boards, are adversely affected by the regulation of the Board of Education, limiting the age of scholars to 15 years. There were 3,697 scholars of 15 years and upwards in the year ending August 31, 1901. The corresponding numbers were 4,146 in 1898, 3,817 in 1899, and 3,828 in 1900. The Evening Schools, under the same authority, are not allowed to give instruction to adults, except with the consent of the County Council or the County Borough Council, as the case may be, and that consent, if given, is limited to the current school year. In the majority of cases that consent has been freely given, though in some instances schools have had to be closed in consequence of the consent being withheld. The uncertainty as to the future is a great cause of discouragement, both to the managers of schools and to the scholars.

Science Subjects.	Number of Scholars.				
	1896–97.	1897–98.	1898–99.	1899–1900.	1900–1901.
Euclid	1,036	1,525	1,216	1,601	1,384
Algebra	7,467	9,996	7,432	7,247	6,188
Mensuration	27,388	29,966	24,369	23,090	22,192
Elementary Physiography	3,712	4,807	4,213	3,552	2,943
Elementary Physics and Chemistry	3,135	2,902	3,116	3,497	3,316
Domestic Science	....	117	142	471	303
Science of Common Things	10,910	13,874	11,499	11,418	11,892
Chemistry	5,658	6,590	5,963	6,704	6,542
Mechanics	1,365	1,129	987	1,252	1,050
Sound, Light, and Heat	726	813	437	305	313
Magnetism and Electricity	3,834	3,967	3,005	3,244	2,949
Human Physiology	5,865	6,237	4,296	4,619	4,312
Hygiene	3,179	4,062	3,276	3,227	3,908
Botany	692	763	597	718	747
Agriculture	2,355	2,300	1,826	1,847	1,937
Horticulture	1,001	1,354	1,350	1,511	1,846
Navigation	68	37	46	118	175
Ambulance	9,086	13,030	12,980	14,838	18,764
Domestic Economy	19,565	23,271	19,915	18,968	19,343
Totals	107,042	126,740	106,665	108,228	110,104

[1] This is a side-light on the value of the inspection-examination system espoused in this State.

"There have been no changes of importance in the code of regulations for Day Schools, but that for Evening Schools has been remodelled much more on the lines of the South Kensington branch of the Board of Education, and it is issued from that office, as these schools are now regarded by the Government as giving Secondary Education.

"The Higher Elementary Schools, for which special provision was made two years ago, have not to any large extent superseded the Higher Grade Schools which had been previously established in most of the large towns. The additional grants offered have scarcely proved to be an equivalent for the increased cost of conducting these schools, and this fact, coupled with the stringent regulations imposed, has discouraged the transfer of the Higher Grade Schools.

"The exhibitions which have been held this summer in London by the London School Board and the Nature-Study Exhibition Association indicate the progress of practical work in science, especially in the region of Physics and Biology. The School Board has sought to encourage the making of scientific apparatus by the science masters and their scholars out of ordinary and inexpensive materials, as more instructive than the manipulation of purchased articles; and the exhibition of what has been thus produced in the schools during the last twelve months shews a very marked advance, both in quantity and quality, over that of the preceding year. The exhibits—651 in number—ranged over Botany, Chemistry, Heat, Light, Hygiene, Magnetism and Electricity, Mathematics, Mechanics, Natural History, Physiography, Physiology, Sound, and Steam. The Board has also entered into arrangements with the custodians of the Royal Parks for a weekly supply of cut flowers, leaves, etc., to furnish illustrations of the reading lessons, as well as material for the scientific study of Botany. The Nature-Study Exhibition Association has been organised for the purpose of creating an interest in biological studies and of illustrating the most approved methods of arranging school museums and other appliances for teaching. The Exhibitions consisted of a large collection of objects gathered by children in their own neighbourhoods, and of drawings which they had made from the plants and animals themselves, and of manuscript notes as to their development. These illustrations were generally given in their proper colours, and often with the aid of the microscope. The Exhibition was made still more valuable by a series of conferences conducted by ladies and gentlemen who have given special attention to Nature study."

5. *General remarks concerning the Teaching of Natural Science.*—In the elementary or lower stage of the primary school scientific information is frequently communicated not so much directly as through what are known as object lessons (leçons de choses). In German Switzerland the scientific is known as the "real" part of the instruction. The character of the lessons, assuming, of course, that reasonable care is taken by the teacher, is necessarily dependent upon the education and *real* knowledge of the teacher. If he has been scientifically taught, he can make any lesson truly instructive. In order to give some idea of the systematic character of the object lessons, reference may be made to some of the details of the Swiss programme (see chapter V, secs. 5–10). Illustrative diagrams are generally, if not invariably, used. For example, in Ticino, one of the Italian cantons, a collection such as the following is used:—

(1) Diagrams showing the silk industry, wool industry, manufactured fabrics generally, cereals.
(2) Thirteen diagrams for the teaching of zoology, botany, apiculture, cosmography.
(3) Cabinets containing the products of the glass industry, carbon industry, salt, sulphur, and resin.
(4) Series of diagrams for general information.

The phænomena of the earth or air, the three kingdoms, *i.e.*, animals, plants, and minerals, constitute the domain of the first lessons. In selecting the subject matter, that is taken by preference, which may be directly observed by the children. The value of the lessons is held to depend *rather upon the method* by which the knowledge is communicated than *upon the elements of knowledge* themselves—that is to say, it is held to depend upon the action exercised upon the minds of the children, upon their faculty of observation, upon their attention; it is by multiplying and varying the interest concerning things accessible to the intelligence of the children, by habituating them to habits of reflection, and to exact and regulated observation, that the teaching becomes truly *educative*. "Là," said M. Guex—before referred to—"l'observation directe des choses est substituée à l'étude des mots, le jugement à la mémoire, l'esprit à la lettre, la spontanéité à la passivité intellectuelle. Exercer les sens de l'enfant pour les rendre plus justes, plus souples; exercer son jugement en le guidant sans lui imposer des idées toutes faites, en lui faisant peu apprendre et beaucoup trouver; exercer sa volonté en lui donnant des occasions de se former; exercer enfin son sens moral en lui faisant tirer de sa propre expérience la notion du devoir, tel est le but de cet enseignement." (This direct observation of *things* is substituted for the study of *words*, the judgment for memory, the spirit for the letter, spontaneity for intellectual passivity. To exercise the senses of the child so as to make them more accurate, more pliant; to exercise his judgment by *guiding* it, without imposing upon him ready-made ideas, by making him *learn* little but *discover* much; to exercise his will by giving him occasion for self-development; and finally, to exercise his moral sense by making him derive from his own experience the notion of duty; such are the aims of this instruction.)

The ideas above expressed are common to the whole of Europe and America. They may be said to be the keynote of modern education, not only in science, but throughout its entire province.

The way in which scientific knowledge enters into the teaching is naturally identical throughout Europe; there is, however, some difference in the various programmes. For example, where hygiene is part of the curriculum, as in the Belgian schools, there has necessarily to be a basis of physical, chemical, and physiological knowledge. Again, in certain of the Belgian schools the elementary conceptions of Natural Science are taught, and in others the Science teaching is orientated toward agriculture. The details of some of the programmes will give a real idea of the character of the teaching, provided always that it be borne in mind that the primary teacher has been properly qualified to undertake Science teaching.

6. *Elementary Science-teaching in Austria.*—The teaching in the Folk School is analogous to that in the German Folk School. For this, reference may be made to chapter VI, secs. 4, 18, 19. It will be observed that natural history, zoology, geology, hygiene, and general physics are taught. In the Unterrealschule, natural history, and physics are taught. The aim of the former is declared in the official programme to be, to confer, by lessons founded upon direct perception, a discriminative knowledge of the most important forms of the organic and inorganic world. In the subject of physics the aim is to

make

make known by experiment the more easily understood natural phænomena and their laws, having regard, however, to their practical applications. Chemistry is taught only in the Realschule itself, but is taught to children under 14 years of age. For reasons indicated in Chapter VI, it is necessary to indicate the teaching of Science in the earlier classes of the Realschulen : this will give a fair ground of comparison of the true state of education in Austria, as compared with that of this State. The following is translated from the official programmes :—

Science in the junior classes of the Austrian Realschule.

Natural History.—The aim of the instruction is to give a systematic review of the animal and vegetable kingdoms, on the basis of a recognition of the most important facts of their *anatomy*, *physiology*, and *morphology ;* and in *geology* to make known the main facts, and the forms and properties of the most important materials with which it is concerned.

The programmes for the several classes are as hereunder : it may be recollected that the first class is for boys 10–11 years of age.

Class I. (Three hours per week). Intuitive instruction in Zoology. 1st Semester. *Vertebrata*, chief mammals, and birds. 2nd Semester *Invertebrata*, articulata, viz., insecta, some of the most important and best known forms from the divisions of the mollusca, and radiata.

Class II. (Three hours per week). Intuitive instruction. 1st Semester. *Mineralogy*, observation and description of a definite number of minerals, without special regard to systematic mineralogy ; with occasional reference to the commonest rocks. 2nd Semester. *Botany.* Observation and description of a number of cotyledonous plants of various orders.

Physics.—The aim in this subject is to confer a knowledge of the most important natural phænomena and their laws, by means of *experimental* and other observations with applications of calculations in so far as the elementary mathematical knowledge will allow. The classes and synopses are as follows :—

Class III. (Four hours per week). General and particular properties of bodies. Heat, magnetism, electricity, galvanism, acoustics.

Class IV. (Two hours per week). Mechanics, optics, radiant heat.

Chemistry.—The aim is to give, *by experimental methods*, a knowledge of the changes of matter in chemical action, the conditions and laws of these changes, a clear knowledge of chemical elements, and of their combination, specially regarding their occurrence and significance in the relation to the economy of Nature, as well as their industrial value.

Class V. (Three hours per week). Preparatory division. Introduction to the most important physico-chemical phænomena and processes. Principal characteristics of the elements, and of the various compounds formed from them.

The above are a sufficient indication of the grade of Science teaching in the Austrian schools for pupils between 10 and 14 years of age.

7. *Science in Belgian Primary Schools.*—The following is the programme of elementary notions of natural science as taught in the primary communal schools of Belgium.[1]

Lower Division.—Simple conversations upon the following subjects :—

(1.) Principal external parts of the human body.
(2.) Principal animals known to the children.
(3.) Essential organs of plants. Principal trees and herbaceous plants in the garden. Some poisonous plants widely distributed.
(4.) Some mineral substances well known locally ; common metals.

Middle Division.

(1) *Man.* Very brief description of the skeleton, and preliminary notions concerning the principal vital functions. Organs of the senses.
(2) *Animals.* The characterisation, by one or two essential traits, of each of the great divisions, from observation of well-selected types.
(3) *Plants.* The study, by means of well-selected types, of :—(i.) Principal organs of the plant. (ii.) About twelve of the most important families, special regard being paid to the most useful and most injurious plants locally, and to the establishment of an herbarium.
(4) *Minerals.* Practical ideas concerning the most important minerals of the country, and the common metals.
(5) The local industries and their products.

Higher Division.

(1) *Man.* Recapitulation of the preceding course. More developed ideas upon the principal vital functions.
(2) *Animals.* Recapitulation of preceding course. Short and characteristic study of several animals selected as types of the principal orders of the mammifera and birds. Animals that are specially useful or specially injurious.
(3) *Plants.* Recapitulation of principal plants studied in the Middle Division. Study of several new plants selected as types of families. Useful and noxious plants. Botanical excursions (herborisations).
(4) *Preliminary Conception of Physics.* General properties of matter : divisibility, porosity, compressibility, elasticity, gravity, weight, centre of gravity, lever, pulley, wheel and axle. Preliminary ideas on the equilibrium of fluids. Communicating vessels. Level of water, jet of water. Atmospheric pressure, barometer. Air-pump. Sound and echo. Preliminary ideas upon heat : dilatation, thermometer, evaporation. Principal meteorological phænomena. Fogs, rain, snow, hail, frost, etc., etc. Preliminary ideas upon light, solar spectrum. Rainbow. Colours. Magnets. Magnetic needle. Compass. Conception of static electricity necessary for the explanation of the phænomena of lightning and thunder. Lightning conductors.
(5) Notions of local industry.

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[1] Bruxelles, 1897; pp. 54–55.

The above course is not taken everywhere. In country places a course in agriculture may replace this.

In the *Lower division* the children are taught by means of the school garden to recognise the principal plants, some cultivated flowers, the fruit trees, noxious plants, and undertake very easy work.

Lessons are given on gardening tools, plants, and vegetables, and animals. The importance of protecting insectivorous animals is dwelt upon.

In the *Middle division* there are lessons preparatory to arboriculture, and then preliminary ideas regarding arboriculture. These deal with germination, which is observed, with the principal organs of plants, root, stem, leaf, flower, and fruit, and the functions of these, with the functions of the parts of fruit-trees, the production of wood and fruit.

In this course, the children cultivate cuttings in pots, either at the school or at home. The treatment of trees, of grafting, etc., preparation of plot, use of fertilisers, seeds, etc., etc., are all dealt with.

Insects noxious to fruit-trees, and the means of their destruction, are pointed out. Preliminary notions of kitchen gardening are also referred to.

Lessons on *animals* are also given. Starting with preparatory lessons, shewing the peculiarities and essential parts of the skeleton of a domestic mammal, bird, reptile, and fish, and with the simplest notions of digestion, circulation of the blood, and respiration of mammals, the course goes on to treat specially of such domestic animals as the cow, sheep, horse, pig, fowls, etc., and of their care, etc.

To shew and characterise the principal insectivorous birds of the country, the saurians, bactrachians, etc., is also required.

In the *Higher division* the programme is as follows :—

I. *Elementary notions of elementary physics necessary for understanding the lessons in agriculture.*

(1) Properties of matter. Divisibility, porosity, compressibility, elasticity.
(2) Communicating vessels. Water level.
(3) Air and atmosphere : composition and principal properties. Atmospheric pressure. The Barometer. The air pump. Wind.
(4) Water : its composition and rôle in vegetation.
(5) Observation and explanation of several phænomena due to capillarity.
(6) Heat : its influence on plants and on the health of animals. Dilatation. Thermometer.
(7) Meteorological phænomena : specially as regards their relation to agriculture. Fogs, rain, hails, snow, frost, etc., etc.
(8) Light : its effects on vegetation.

II. *Notions of agriculture* : deal with soil, treatment, drainage, manuring, seeds, and sowing, etc.

III. *Special notions upon some domestic animals* : refer to the draught horse, milch cow, their feeding and hygiene.

IV. *Arboriculture and horticulture* : deal with agricultural operations generally.

The preceding course is strongly orientated practically; in educative value it is not quite equal to the preceding course, but is of practical value. Of course, in the actual teaching much depends upon the teacher, upon his education and thoroughness.

8. *Science in Primary Schools of France.*—The science teaching in France is either general, or is orientated toward agriculture in rural districts or toward industry in industrial villages. It has been well developed for a considerable number of years past, as the following programme will shew. The subjects of physics and natural history may be taken as illustrative.

Middle division :

June.—Three states of matter. Air and its composition. Properties of oxygen, nitrogen, and carbon-dioxide. (The properties are as far as possible to be *demonstrated by experiments.*) Atmospheric pressure. Barometer. Potable and undrinkable water. Sea water.

July.—Combustion.—Heat, effect on matter. Thermometer : its construction and use. Evaporation of water : its three states. Rain, frost, snow, wind, ice. Expansive force of water in the state of vapour or of ice, produced in hermetically sealed glass. Application of that force. Steam engine.

Higher division :

October.—Natural history. Human skeleton. Digestion and absorption. Circulation and respiration. Assimilation, secretion, transpiration.

November.—Nerves. Senses, hygienic counsels.

December.—Classification.—Vertebrates, mammals, birds, reptiles, fish. Invertebrates, molluscs, annelida, zoophytes, etc. Principal characters. Geographical distribution of animals.

January.—Minerals.—Their utility. Mines. Fire-damp. Quartz, sand. Sandstone, tripoli, precious stones, emery, limestone, marble, lithographic stone, plaster, alabaster, etc., diamond, lignite, graphite, coal, turf, sulphur, etc. Properties and use.

February.—Kaolin, clay, chalk, salt, saltpetre. Cast-iron, iron, steel, lead, antimony, tin, tinned iron, zinc, galvanised iron, copper, brass, arsenic, gold, platinum, aluminium. Properties and use of these materials.

March.—Physics.—Universal attraction. Fall of body. Lever of the first kind. Balance, etc. *Equilibrium.*—Equilibrium of liquids. Horizontal surface. Application of the principle of equilibrium of liquids. Jet of water. Artesian wells. Weight of air. *Atmospheric pressure.*—(Exhibit the barometric tube or a gauge, or even an ordinary glass filled with water, covered with a leaf of paper, then inverted). Measurement of atmospheric pressure by means of barometer. Applications of the principle of atmospheric pressure. Pumps, syphons, pipettes, etc.

April.—*Heat.*—Its effect upon matter. Experiment with s'Gravesande's ring. Construction and use of thermometer. Ebullition. Steam-engine. Evaporation. Rain, dew, snow, ice, bursting of stones, etc., by frost (*pierre gêlive*). Good and bad conductors of heat. Emissive and absorbent power. *Light.*—Propagation, velocity, reflexion, plane mirror. Refraction of light. Dispersion. Rainbows. White light. Newton's rings. Colours of bodies.

May.—*Static Electricity.*—Glass and resin rods electrified. Good and bad conductors of electricity. Electrification by influence. Electricity of clouds. Kite experiment. Lightning. Lightning conductors. *Magnetism.*—Natural and artificial magnets. Property of magnetic needle—compass. Magnetisation. Uses of magnets. *Dynamic Electricity.*—Electric current. Cell. Decomposition of water. Magnetic effects of electric current. Telegraph.

June.—*Chemistry.*—Notion of simple bodies, *i.e.*, elements, oxygen, nitrogen, carbon, hydrogen, sulphur, copper, phosphorus, iron, tin, zinc, lead, mercury, gold, silver, platinum. As far as possible exhibit each element to the pupils.

July.—Conception of compound bodies. Water, salt, chalk, copperas, verdigris, rust; indicate the elements from which these bodies are made up. Properties and uses of principal elements and compounds.

August.—General recapitulation.

This will give a general idea of the character of the work done, provided it be remembered that the work is as far as possible *expérimental.* "C'est par des expériences simples et peu coûteuses," say the official instructions of 1897, "qu'on établira les notions de sciences physiques que peut comporter le programme des écoles primaires." (It is by simple and inexpensive experiments that the conceptions of physical science that may be included in the programme of the primary schools are established.) In the "école normale d'Arras," each student teacher on leaving takes away a box for chemical experiments, made by him during his course in manual training. (This is indicated in Chap. LI., sec. 4.)

The simple apparatus permits of the preparation of oxygen, hydrogen, carbon dioxide, ammonia, etc.; distillation of wine and other liquids illustrating fractional distillation in chemistry. Experiments in physics are easily made; electroscopes, tests of thermal conductivity, electro-magnets by wrapping insulated copper wire about a nail, and so on. The poorest country school with an educated teacher may easily have its scientific equipment of a simple character for the teaching of science.

A point worthy of noting is that in the French view a properly educated and trained teacher is competent to orientate the science teaching so that it will bear practically upon local activity, agricultural, manufacturing, etc., *without losing its educative value from a wider standpoint.*

9. *Science in German Schools.*—Seeing that in Chapter VI the programme in natural history and physics has been pretty fully outlined for a Saxony folkschool (see sections 4, 18, and 19), it will be sufficient to indicate the teaching of science in the lower classes of a German Realschule.

It may be repeated that the time devoted in Dresden to natural history and physics in the folk-schools is :—

Subject.	Classes.				
	V	IV.	III.	II.	I.
Natural History	2, 1 (girls)	2	2	1	1
Physics, etc.	—	—	—	2	2

In the Realschule, the aim in *natural history* is to confer—

(*a*) Ability to observe and describe individual plants, a knowledge of the most important families of plants, and of the phænomena of plant-life.

(*b*) Ability to observe and describe representatives of individual classes in the animal world; a knowledge of the most important orders of vertebrata and insecta.

(*c*) Recognition of the structure of the human body, and the most important elements of hygiene.

(*d*) A knowledge of the simplest crystalline forms, as well as of individual minerals of importance.

In Physics the aim is to give—

(*e*) By experiment a knowledge of equilibrium and motion, of heat, magnetism, and electricity, as well as the simplest laws of optics and acoustics.

(*f*) A knowledge of the most important chemical elements and their principal combinations.

The work is practically that of the fifth to the Untersecunda (lower second) of the Oberrealschule.[1]

The "Lehrplan" is as hereunder: entrance taking place in the 9th year :—

Subject.	Class.					
	VI.	V.	IV.	III.	II.	I.
	9-10.	10-11.	11-12.	12-13.	13-14.	14-15.
Natural History	2	2	2	2	2	—
Physics...	—	—	—	—	3	5

[1] Die höheren Schulen in Preussen und ihre Lehrer. Halle, 1902, p. 88.

This

This programme is worked out in detail about as follows :—

Class VI (two hours per week) :—

Botany.—Description of phanerogams (actual specimens present). Explanation of form and parts of roots, stem, leaves, flowers, easily recognised. Flowers and fruits.

Zoology.—Description of the most important mammals and birds, as regards their form, colour, size, with actual examples. Their mode of life, utility or injuriousness.

Class V (two hours per week) :—

Complete knowledge of the external organs of phanerogams, description and comparison of some actual examples.

Zoology.—Fundamental characteristics of the human skeleton. Exercises in simple schematic drawing of observations, so also in the following classes.

Class IV (two hours per week) :—

Botany.—Comparative descriptions of various kinds of families of phanerogams, with actual examples. Review of a natural botanical system. Vital phænomena of plants.

Zoology.—Lower animals, viz., those that are useful and noxious, as well as their special enemies, with special regard to insects.

Class III (two hours per week) :—

Botany, etc.—Description of some more difficult plants, from the standpoint of morphology, systematic botany, and biology. Reference to the most important exotic plants. The anatomy and physiology of plants, including cryptogams. The diseases of plants. Review of the animal kingdom. Fundamental ideas of geography in relation to the distribution of animals.

Classes II and I (five hours per week each) :—

The human being and his organs, specially referring to hygiene. Preparation for Physics. Phænomena of mechanics. Most important elements of the, theory of heat magnetism. Electricity, the most important chemical phænomena ; most important minerals, and simplest crystals, acoustics, optics.[1]

This programme indicates the thoroughly systematic character of the German teaching. The teaching is realistic, and, as far as possible, experimental.

10. *Other Countries of Europe.*—It is unnecessary to indicate the teaching for every country of Europe; science teaching is good in them all, in Bohemia, Denmark, Finland, Holland, Hungary, Norway, Russia, Sweden, etc. Switzerland will be specially referred to hereinafter (next section). The characteristic everywhere is realistic teaching ; that is to say, the objects themselves are before the children, and the experimental method is observed *wherever possible.*

In the Russian Real-school entrance is at the age of 10. Physics is taken at 13-14, two hours per week, and Natural Science at 12-13, two hours a week being also given to that subject, both in that and the following year. In the city schools of three classes (elementary teaching) three hours a week are devoted to natural history and science in the second class, and four hours per week in the third, but this teaching has, till lately, been like the science teaching in the primary schools of this State ; that is to say, not definitely organised.

In Holland the movement towards realism is expressed in their recognition of the value of what is often called "Nature-Study," and in its early introduction.

11. *Science teaching in Switzerland.*—The provision made for Science teaching in the primary schools of the Cantons of Switzerland is remarkably ample, and clearly recognises the educative and practical value of Science.

In the Cantons of Geneva and Vaud, a good deal of elementary science is really given in the object lessons (leçons de choses) and some geology is given in the geographical teaching. See Chapter V, sections 5, 6, 8, 9, and 10. For example : the object lessons are as hereunder in Geneva in the primary schools :—

Class I (7–8 years).

Discourses on child's surroundings. Human body and its clothing. Houses and their furniture. Air, water, etc. Animals. Elementary ideas of hygiene.

Class II (8–9 years).

The human body ; its bones and muscles : the senses. Hygiene. Animals, plants, stones, metals known to the children. Conversion of raw material into manufactured articles. Foods, fabrics, timber, stones, metals.

Class III (9–10 years).

Man.—His body, bones, muscles, nerves, sense-organs, vital organs, brain, heart, lungs, stomach, spinal cord, liver, intestines.

Animals.—General types of mammals and birds. Notions about air, water, temperature, heating, lighting, hygiene.

Class

[1] Handbuch der Erziehungs-und Unterrichtslehre für höhere Schulen. Herausg. Dr. A. Baumeister. München, 1897, pp. 47-48.

Class IV (10–11 years).

Man.—Digestion, locomotion. Hygiene.
Animals.—Types of mammals and birds.
Plants.—Selected types. Principal organs.
Physics.—The three states of matter.

Class V (11–12 years).

Elementary ideas of natural history. Hygiene. Industries. Domestic economy.

Class VI (12–13 years).

Man.—Digestion, circulation, respiration, nervous system, sense-organs. Hygiene. Effect of alcohol, tobacco, etc.

Animals.—Useful and noxious animals.

Plants.—Essential parts; principal groups; edible plants.

Physics.—Pumps, fountains, jets, the barometer, thermometer, hydraulic machines, steam-engines, electric machines, cells, lightning conductors, telegraph, telephone.

Industries.—Mechanisms, horology. Gold and silver smithing; jewellery. Printing and photographing.

The object lessons and elements of natural science taught in the primary schools of the Canton of Vaud may be found in Chapter V, section 8.

In order to get an adequate idea of the teaching in the primary school stage, reference should be made to section 10 of the same chapter.

12. *Science for Primary School Teachers in Switzerland.*—The programme at the Seminarium at Küsnacht, Switzerland, for primary teachers will give an idea of the character of the preparation of Swiss teachers for the teaching of Science, and is given hereunder. The subject is known as Naturkunde, and includes botany, zoology, chemistry and mineralogy, geology, physics, anthropology and hygiene.

The aim of this education is to reach clear perceptions of the forms and occurrences of Nature through independent observations and thoughtful criticism; to afford exercise in logical induction, so as to reach conclusions from experience, and thus an understanding of natural laws; and to qualify the student to teach the most important facts of the life of Nature and of the civilised life of man.

In the first and second classes, botany, zoology, chemistry and mineralogy are treated; and in the third and fourth, geology, physics, anthropology and hygiene. The detailed programme work is briefly set out in Chapter XL, sections 27–32 inclusive. It is here repeated and outlined a little more fully.

Class I (four hours per week):—

(*A*) *Botany* (two hours).—(*a*) Introduction to the natural system by means of monographs on individual representatives on the cryptogams and specially important indigenous phanerogams. Special regard is to be paid to useful and injurious plants, from an agricultural point of view, and to the most important exotic cultivated plants and their propagation. Outlines of the morphology, anatomy, biology, and physiology of plants.

(*b*) *Botanical practice* (two hours in summer).—Exercises in determining phanerogams, as a practical introduction to the knowledge of morphology and systematic botany. Formation of an herbarium of about thirty typical examples. Practice in elementary microscopic investigation. Preparation and sketching of simple specimens. Exercises in observation, with an introduction to biology. Simple experiments in plant physiology.

(*c*) *Botanical excursions* in the neighbourhood and further afield.

(*B*) *Zoology* (two hours in winter).—Introduction to the science of anatomy and the developmental history of the different classes in the animal kingdom, by means of monographs on single representatives. The biology of known indigenous animals. The stem of the animal kingdom, in ascending series, as far as, and including, the articulata. The most important orders of the insecta.

Class II (five hours per week):—

(*A*) *Zoology* (two hours in winter).—(*a*) Monographic and systematic treatment of the classes of mollusca and vertebrata. Characteristics of the most important orders, with special regard to their utility and their injuriousness.

(*b*) *Individual Zoological excursions*, in sections, in the neighbourhood, preferably for the observation of animals associated n natural groups.

(*B*) *Chemistry and Mineralogy* (two hours in summer).—(*a*) The most important heavy metals ores, oxidation. Air; oxygen and nitrogen. Water; hydrogen, knall-gas. The most important light metals. Carbon and carbon dioxide. Sulphur and sulphuric acid. Sulphuretted hydrogen, and sulphide of carbon. Phosphorus, arsenic and antimony; silicic acid. The haloids and their acids (HCl, HF). Reduction through heat (HgO), through H, K and C. Reduction of metallic ores. Electrolysis. Atomic theory, simple and multiple proportion, valency, stoichiometry. The most important acid and basic hydrates. Salts; structure, general properties, decomposition of salts through heat, through bases, acids, salts, electricity (galvano-plastic arts), and light (photography). Theory of crystallography. The most important salts (natural and artificial salts). Haloid salts. Carbonates, sulphates, phosphates, silicates (augite and hornblende, orthoclase and plagioclase, granite, mica, talc, clay; glass, porcelain and cement making). Characteristic partial reductions. HNO_3, gunpowder, H_2SO_4, bleaching powder, ozone. Hydrides, especially NH_3.

(*b*) *Laboratory Practice and Chemistry* (two hours every fourteen days).—Arrangement of school apparatus, etc., etc.

Class

Class III (five hours in summer, four hours in winter):—

(*A*) *Geology* (two hours in summer; in third quarter, one hour).—(*a*) Petrography. The most important volcanic rocks; stratified rocks; gneiss and crystalline schist; conglomerates, organic rocks.

(*b*) *Changes in the Earth's Surface.*—Erosion and sedimentation. Chemical and mechanical action of water. Action of ice. Actions within the earth. Volcanos. Hot springs. Upheavals and subsidences. Sand-hills, hills produced by folding, earthquakes.

(*c*) *Historical Geology.*—Short characteristic sketch of the five periods. Significance of changes in the organic world.

(*d*) *Geological Excursions.*

(*B*) *Organic Chemistry* (in fourth quarter, one hour).—The most important organic combinations. Illuminating gas. Alcohol and acetic acid. Carbohydrates. Sugar. Starch. Celluloids, fats and soaps. Alkaloids, æthereal oils, albumens.

(*C*) *Physics* (three hours per week).—(*a*) Mechanics. Laws of rectilinear and central movement, and in connection therewith the ideas of force and mass. The laws of statics. Friction. The general properties of matter. Pressure in fluids. Specific gravity. Molecular forces of cohesion and adhesion. Atmospheric pressure in various phænomena, and its applications.

(*b*) Theory of Heat.—The expansion of matter and its applications. Specific heat. Main outlines of the mechanical theory of heat. The mode of the flow of heat. Theory of steam and of the steam-engine.

Class IV (five hours):—

(*A*) *Anthropology and School-hygiene.*—The skeleton. The muscular, nervous, and vascular systems. The breathing organs and breathing. The digestive system and theory of nutrition; the excretory organs; the sense organs.

(*b*) *School-hygiene.*[1]—The school-house, school-room and furniture. Ventilation, heating, lighting and cleaning. Baths, corridors, and other spaces. The hygiene of the plan of instruction and of the principal subjects of instruction. Corporal punishment. Health disturbances in youth. Anomalies in development. Fatigue and over-work. Nervous injuries. Mental diseases. Disorders of sight, hearing, and speech, and their examinations. Causes, symptoms, and prevention of the most important infectious diseases. Sudden accidents and "first-aid."

(*c*) Excursions and hygienic demonstrations.

(*B*) *Physics* (two hours).—(*a*) *Acoustics and Optics.* The main features of the theory of waves. Sound. Musical tone and its properties. Tuning-fork. Resonance. Shadows. The law of reflection and its application to plane and spherical mirrors. Refraction. Path of a ray of light through a prism and lenses. Optical instruments. Prismatic colours and spectrum analysis. Interference, and the essentials of the theory of light. Vision.

(*b*) *Magnetism and Electricity.*—Magnetism in general and the elements of earth magnetism The phænomena of static electricity and apparatus for their demonstration. Condensors. Galvanic electricity and its demonstration. The action of an electric current and its most important applications. Induction, and its significance in technology. Introduction electric units.

(*c*) *Physical Laboratory Practice* (two hours every fortnight).

Bearing in mind that these courses are given by highly qualified teachers in each department, and with proper apparatus for demonstrational and experimental purposes, it will be recognised that the Swiss teacher is thoroughly prepared for the teaching of Science in the primary school, and it will be readily understood that a teacher so educated will handle any object lesson in a very different manner from those whose knowledge of Science is less thorough, or where its acquisition has been attempted in a merely literary way.

13. *Cosmography.*—This is generally taught in Europe in connection with geography. Some notion of the world's position in the solar system, the significance of the moon to, and its influence on the earth, the characteristics of the rotation of the earth on its axis and round the sun, the movement of the earth's axis within the earth itself, the motion of the planets, of comets, of meteoric bodies, of the path of the solar system through stellar space, of the distances of the stars, of the physical constitution of cosmic bodies and their groupings, should be given to children, if for no other reason, for its educative value—its power to enlarge their conceptions of time and space, and to help them to intelligently understand the universe.

14. *Apparatus for teaching Science.*—The equipment of most continental schools for science teaching, and, indeed, also very many American schools, stands in marked contrast with that of the best primary schools under the Department of Public Instruction in this State. It has been pointed out that where manual work is going on it will not be difficult to make much of the apparatus required. What is needed, however, is that every important school in the larger towns should have a *good equipment*, serving as a guide and model for other schools, and as an "object lesson" for the public, teachers, and children. Also the teachers' seminaries or training colleges should have a pædagogical museum as an adjunct, and excellent working laboratories for physics and chemistry.

In

[1] Special attention is drawn to this subject; it will be seen therefrom how well advised are the European authorities as to what constitutes a proper course for a teacher of young children.

In order to give some idea of the equipment of a continental primary school, the following list is attached as a suggestion. This was made out in Vienna during the Commissioners' visit to that city. It is not recommended as an ideal list, but as representing the kind of equipment most of which is to be found in a better class Austrian primary school.

APPARATUS, ETC., IN A PRIMARY AUSTRIAN SCHOOL

Infant-school—

Material: Selection of *ready-made* infant-school work.
Methodology: (Tellner) Infant-school.

Elementary Object-teaching—

Pictures: (Schweissinger) The seasons. (Söder) Division of time. Dial with movable hands.
Methodology: (Heinemann) Handbook for object-teaching.

Elementary Instruction in Arithmetic—

Apparatus: Russian reckoner (Fritsch). New reckoner (Tillich). Improved reckoner. Metrical measures and weights, forty-six models.
Pictures: (Lindner) Counting in pictures.
Methodology: (Streng) Instruction in arithmetic (two volumes).

Natural History, Zoology—

Anatomical models. Eye, auditory organ, lungs with heart, section of head, brain, windpipe.
Wall-tables. (Eschner) Anatomical wall-tables, six plates. Human races.

Museum—

Mammals: Representations of the principal orders. Monkey, bat, one of the carnivora, insectivorous animal, rodent. (*a*) In stuffed preparations. (*b*) In skeletons.
Birds: Ten representatives of the principal orders. Parrot, cuckoo, woodpecker, two species of sparrows, bird of prey, pigeon, fowl, morass-bird, duck. (*a*) In stuffed preparations. (*b*) In skeletons.
Reptiles and Batrachians: Five representatives. Tortoise, snake, frog, salamander, lizard. (*a*) In spirit preparations. (*b*) In skeletons.
Fishes: 3 representatives—Physostome, Acanthopterygian, Malacopterygian, Cartilaginous fish; (*a*) in dried preparations, (*b*) in skeletons.
Insecta.—About 150 species.
Invertebrates.—In spirit: Salpa maxima, Sepia officinalis, Helix pomatia, Unio pictorum, Flustra carb., Argonauta argo, Scolopendra ung., Euscorpio germ., Epeira diadema, Maia squin., Anodonta, Oniscus mur., Hirudo medic., Ascarius, Taenia spec., Echinus acutus, Asteropecten spec., Euspongia offic., Corallum rubrum, Pelagia noctiluca.
Preparations by Injection.—In spirit: Rabbit, pigeon, tortoise, ringed snake, frog, pike (forepart of body), crayfish.
Other Preparations.—Maw of ruminant, dried preparation, to be blown up. Skeletons of feet, soliped, bisulcous and multungulate. Evolution of bird's feather. Evolutions: In spirit—Frog, trout, Osmoderma eremita, bee, termite, crayfish. Dried—bee, work and enemies; silk-worm.
Wall-tables.—(Leutemann). Zoological atlas and pictures of animals, 88 pictures. (Pfurtscheller). Zoological wall-tables. Table 1 to 10 issued, five tables more to be edited, each year.

Botany—

Natural objects: Herbarium, 200 species. Collection of woods.
Models: Models of blossoms—Pisum sativum, Pinus silvestris, Atropa belladonna, Primula off., Ranunculus ac.
Models of germination: Phaseolus vulgaris, Secale cereale.
Models of fungi: 1. Edible mushrooms. 2. Poisonous mushrooms.
Wall-pictures: (Pokorny) Botanic wall-tables, 24 plates. (Pilling-Müller) Wall-tables. (Göring-Schmidt) Culture-plants.

Mineralogy—

Models: Wire-models of crystals, shewing the principal forms; six kinds. Solid glass-models of crystals, polished, 30 kinds. Imitations of precious stones.
Natural objects: Mineralogical collection, 100 kinds.
Wall-pictures: (Schreiber) Geological wall-tables.
Methodology: (Twiehausen) Natural history, five volumes, for public and intermediate schools. Loew, methodology of natural history, for secondary education.

Physics—

Mechanics: Adhesive plates; Hydrostatic apparatus; expansion of fluids, bottle with ball; barometer; Pascal's apparatus for bottom-pressure; Bologna phials, ten pieces; whirling-table, with five pieces accessory apparatus; communicating tubes; force-pump; fire-engine; pulleys, etc.; capillary tubes; lever, on stand, with rectifying screws and weights, from 1 to 100 gear; syphons of glass, three sorts; eolipile, with brass-plug; hydraulic press; wedge-apparatus; Frick's parallelogram of forces; pneumatic pump, with one barrel; accessory apparatus; electric egg; gutter-pipe; Magdeburg hemispheres; acoustic apparatus; pendulum apparatus; mercurial-press; suction pump; inclined plane; Segner's reaction wheel; buffing apparatus; diving-bell; Toricellian tube; balance for hydrostatic experiments.

Undulatory Theory and Acoustics: Hearing trumpet. Apparatus for Chladnian acoustic figures. Membranous reed-pipe (lip-pipe). Sonometer. Siren-disc. Speaking trumpet. Tuning-fork, normal A. Ordinary reed-pipe (tongue-pipe).

Optics: Dioptrics, apparatus after Müller. Camera obscura. Concave and convex mirror. Telescope-system with diagram of rays. Lens, double concave and double convex. Microscope-system with diagram of rays. School-microscope. Photometer after Rumford. Prism on stand. Reflecting-apparatus. Hadley's sextant, simple forms. Sciopticon. Electric arc-lamp for direct current. Views, selection as desired, *each* about 1000 views. Stereoscope with twenty views. Mirror for measuring angles.

Heat: Extension of metals (ball and ring). Model of steam-engine (section). Amianthoid hygrometer. Lever-pyrometer. Cryophorus. Papin's piston. Papin's digester. Pneumatic tinder-box. Water-hammer. Radiometer. Davy-lamp. Thermometer R C. Thermometer R C F. Apparatus for conduction of heat.

Magnetism: Box-compass, compass. Inclination and declination needles. Magnetic needle, magnetic iron (natural), horseshoe magnet, bar-magnet.

Electricity: Condenser. Electric double pendulum. Electrophorus. Sticks of glass, vulcanized caoutchouc and resin, with rubbing-stand. Winter's electric machine. Eight pieces accessory apparatus. Wimhurst machine. Eight pieces accessory apparatus.

Current Electricity: Galvanometer. Electromagnetic motor. Electro-magnet single. Spark-inductor (Ruhmkorff-coil) after Kroplin, 5 F.H. Bunsen's cell, 16c. Daniell's cell, 16c. Grénet's bottle. Leclanché's cell. Meidinger's cell. Grénet's plunging battery with four cells. Material for filling the cells. Galvanoplastic apparatus. Geissler's tubes, three pieces. Inductor. Morse's telegraph. Apparatus for demonstration of telephone. Marconi's wireless telegraphy.

Apparatus for experiments after Hertz. Apparatus for Tesla's light. Apparatus for standing undulations on wire. Apparatus for Röntgen experiments.

Methodology: (Frick). Physical technique, two volumes (for upper schools). (Rosenberg). Handbook of experimenting (for intermediate schools).

Chemistry—

Chemistry—

Selection of chemical utensils.
Methodology: Arendt, Experimental Chemistry.

Geography—

Wall Maps (Bamberg): Eastern planispheres, physical and political frontiers. Western planispheres. Europe, Asia, Africa, N. America, S. America, Australia, Germany, Balkan, England, France, Italy, The Pyrenees, Russia, Scandinavia, Kummerli, Switzerland.
Models and Apparatus.—Embossed globe, 33 cm. Principal formation of the earth, embossed. Embossed map of Central Europe. Embossed map of Australia. Planetarium. Armillary spheres. Model of horizon. (Letoschek). Models of surface.
Pictorial Works.—(Lehmann). Geographical characters (42 plates). (Lehmann). Types of nations (6 plates). Principal formations of the surface of earth. (Letoschek). Meteorological and physical pictures.
Methodology.—(Tischendorf). Preparations for geographic teaching (for intermediate schools). (Günther and Kirchhof). Didactics. (Günther and Kirchhof). Methodology of mathematical and general geography. (Excerpt from Beck's Handbook of Theory of Education and Instruction).

Drawing—

Models: Wood-models for school-drawing, 44 models. Wood-models for individual teaching, 21 models. Models of machinery constructed after Dirlam and Simerka's collection of drawing copies.
Drawing-copies.—(Tellner and Steigl). School for free-hand drawing for *primary schools.*
For intermediate schools.—(Scheinecker). Rectilineal ornaments. (Scheinecker). Curvilineal ornaments. (Schwertner). Ornament-drawing. (Steigl). New drawing-copies, 1 to 6. (Chilla). Floor-motives, 1 to 2. (Sodoma). Modern ornaments.
For upper and professional schools.—(Grohmann). Architectonic object-teaching. (Feldegg). Renaissance ornaments. (Dirlam). Drawing-copies for house-carpenters and cabinet-makers. (Schiefthaler). Elements of joinery. (Haubner). Turnery in wood. (Spindler). Motifs for lattice-work. (Dirlam-Simerka). Parts of machinery. (Rottinger). Drawing-copies of hearths. (Zoff). Drawing-copies for metal turning. Methodology: (Kimmich). Drawing-school.

Geometry—

Drawing-copies.—(Wildt). Projection-drawing. (Wildt). Descriptive geometry, 1/11.
Models.—Geometrical figures of wood. Geometrical figures illustrative of *stereometrical* notions. Models of solids for teaching descriptive geometry. (Wildt). Apparatus formed of small sticks for teaching descriptive geometry. (Wildt). Models for projection-drawing. Methodology: Refer to Beck and Ambros' works.

Technology—

Collections: Paper. Glass. Graphical arts. Alkali industry. Collection of metals, ceramics, products, goods, pencil manufacture.
Wall-tables: (Eschner). Technological wall-tables, 1 to 25. (Hassack). Microscopical wall-tables, 1 to 24.
Methodology: (Eschner). Text for technological wall-tables, I-III. (Eschner). Nature and work of man, 2 volumes.

General Methodology—

Scholastic curriculum for public and intermediate schools. Handbook of methodology for all branches of education. (Ambros). Eight school-years. Instruction for gymnasium-teaching. Instruction for technical school-teaching. (Beck). Handbook of theory of education and instruction for upper schools, including didactics and methodology of all branches of teaching.

15. *Conclusions.*—In reviewing the great difference between the education in Science of the children of this State and that of the children in Europe, and remembering that scientific knowledge is not only of *great educative value* but is also of the *highest practical importance*, the following conclusions are suggested:—

1. That elementary physics, chemistry, zoology, botany, geology, mineralogy, should be taught in the primary schools.
2. That all teachers should be so educated as to be competent to give such teaching.
3. That in illustrating the science teaching, the practical needs of the district should be borne in mind.
4. That all teaching should be realistic and not literary, children being brought face to face with the things spoken of.
5. That schools should be equipped for science teaching.
6. That children should be induced to take an interest in the school's scientific equipment, and encouraged in the direct study of natural bodies, and in the study of natural phenomena.

CHAPTER XXVII.

CHAPTER XXVII.

Training School System of New South Wales.

Preparatory Statement.

[J. W. TURNER.]

In dealing with the Pupil-teacher System, the Commissioner deems it necessary to make a preparatory statement.

Forty years ago he entered the service of the State as a pupil-teacher, and was influenced and guided by men who had been pupil-teachers before him. In the capacity of headmaster he, too, has had pupil-teachers submitted to his care, and has assisted in their training and in their development into primary school teachers. Most of the excellent primary school teachers, who are a credit to our Service to-day, have been pupil-teachers, and the knowledge of these things influenced the Commissioner greatly up to the time when he left Australia on his investigations.

At the Education Conference held in Sydney in 1902, the Commissioner naturally, as Training Master, had a great deal to say in regard to the Pupil-teacher System, and all that he said and urged at that Conference was in the direction of increasing the age of candidate pupil-teachers, raising the standard of their entrance examination, and of adding substantially to their emoluments. If the Commissioner's arguments in the records of that Conference are perused, it will be seen that though still wedded to the Pupil-teacher System he was keenly alive to the necessity of so changing the conditions of their employment as to result in a maturer and more reliable type being introduced. The Commissioner refers to these facts in his report in order to clearly define his past and present attitude on this question, and to reveal as plainly as possible the depth of his conviction. Although he left Sydney with an open mind to a certain extent on the Pupil-teacher System, he had already formed very definite opinions, and had not only formed them, but given clear expression to them. When, therefore, he recants his previous view on this question, he can only be considered as one who has earnestly sought for the truth, and having found it, has adopted it regardless of any other consideration.

The Commissioner subjoins a few extracts from the report of the Educational Conference, which show his opinions as expressed on that occasion:—

Mr. TURNER: The first step in the training of our teachers in this State is taken with the appointment of the young pupil-teacher, and the course of procedure adopted in this case is well known to the members of this Conference. Several local gentlemen, writing and speaking recently on educational matters, condemn our system of pupil-teachers, and quote eminent Home authorities against their employment in England. These educationalists in England never had any practical knowledge of pupil-teachers' work out here. Many inspectors in this Conference passed through a pupil-teacher course—some fifty years back, some forty, some thirty—and they have, as head-masters and inspectors, seen the working of the system for many years. If the system is behind the times, and fails to produce satisfactory results, as is alleged by its critics, what have our inspectors been doing that they have not called attention to the failure? In none of their annual reports can I find that the pupil-teachers, as a body, are inefficient, or the work they do is unsatisfactory. On the other hand, there is frequent testimony to the high character of the work this fine body of young people is doing for the State. My own opinion is that our system of pupil-teachers is one of the greatest factors for good in our educational work, and its success is a perpetual tribute to the names of William Wilkins and Edwin Johnson. While freely admitting the many good points in the system, I should like to see some changes which, I think, would make for improvement. In 1884 the pupil-teacher became a Civil Servant, and in 1895, with all Civil Servants, he came under the jurisdiction of the Public Service Board. The changes that I would advocate in the pupil-teacher system are largely consequent upon the position of juniors in other branches of the Public Service since the *régime* of the Public Service Board. In all departments of the Public Service excepting Instruction—which admits at 14 or 15—a lad must be 16 years of age before he is eligible to be examined for admission. I contend that applicants for the position of pupil-teacher—male or female—should not be accepted under the age of 16 years. I have had conversations on this matter with many head-masters, and the consensus of opinion is that the older age gives the more matured mind, better physical condition, and, therefore, makes the more efficient pupil-teacher. Those who have had actual experience in teaching fifth-class children know well the great progress made by pupils in their 15th and 16th year, as compared with earlier years. The argument may be used that some boys and girls at 14 years give great promise for teaching, and that two years of service would be thus lost. But the argument may be met by showing that if the pupil-teacher possesses aptitude for teaching at 14, he or she, with more experience and greater physical powers, is not likely to display less aptitude at 16. The critic, perhaps with some degree of truth, condemns the system because of the employment of children of tender years. Boys and girls of 16 years and over could not be placed in this category. The entrance examination should be on a basis somewhat similar to that held by the Public Service Board for admission to the Clerical Division (*See* page 66, General Regulations) or the Junior Matriculation standard. Subjects of special benefit to the pupil-teacher in his career should be compulsory. The succeeding examinations should be of corresponding relative difficulty, and the yearly standards now used would need revision. The next point for consideration is the salary. Speaking as one having a considerable knowledge of the various Departments of the Public Service, I never could understand why a male pupil-teacher starting his career in the Department of Public Instruction should be paid at the rate of £40 per annum, while a lad who is appointed to either the Professional or Clerical Division in any of the other Departments receives £50 per annum. The work done by the former is quite as onerous, quite as fatiguing, and certainly requiring as much intelligence as the latter, and yet there is a difference of £10 per annum. Perhaps it will be argued that the pupil-teacher receives a professional training. So does the cadet draughtsman, the engineering cadet, or the lad who is fortunate enough to get an appointment in the Department of Justice. Then the male pupil-teacher gets increments of £6, £11, £11 during the three years of his course as against regular annual increments of £15 by the lads in all branches of the Service. Again, the former only gets his increase upon a successful pass at examination; the latter get their increments on the satisfactory report of the permanent head of the Department. Knowing these facts, we need not wonder at the poor all-round quality of some of the boys who are candidates at the pupil-teachers' entrance examinations. The better class of boys—those with good attainments, good address, careful home-training, strong physique—will not present themselves for examination. This is not my experience only—the head-masters of other large schools will verify the statement. Just here at the very outset our pupil-teacher system needs strengthening. The Department should attract to its teaching ranks more of the many superior boys, who leave our schools every year to enter the Public Service. In the next place I advocate a three years' course of pupil-teachership as against the present four years' course. The latter is unduly long and somewhat wearying, and would not be necessary if the pupil-teacher started as I have previously recommended, on a higher

higher intellectual plane. The rate of salary for males should be £50 for the first year, £60 for the second, £70 for the third. The rate of salary for females is too low for the duties performed, and should be more in accordance with that prevailing in other branches of the Service where females are employed. Some of our teachers have expressed the opinion that too much is exacted from our pupil-teachers in the matter of actual teaching, and that they have not sufficient time in the daily routine to watch teaching methods by the more experienced teachers in the school, or to engage in private study. I do not favour a concession of this character, except to the female pupil-teachers, and to them I would grant an hour off every day for the reasons advanced, and also for the purposes of rest during trying weather. While resting, their classes might be amalgamated under the direction of the more experienced teachers in such subjects as scripture, drill, spelling, singing. I would not allow the concession to the strong, sturdy lad of 16 and upwards, and, to do him justice, I do not think he would ask it. Summing up my views on necessary changes in the pupil-teacher system, I recommend, (*a*) that applicants for position of pupil-teacher should not be less than 16 years of age; (*b*) that the entrance examination should be much higher than the present, and somewhat equal to that for the Clerical Division—special subjects to be included; (*c*) that the salary for boys be raised to £50—increasing by sums of £10; girls, £40, £50, £60; (*d*) that the course be three years instead of four; (*e*) that an hour off from actual teaching be allowed female pupil-teachers daily for rest, private study, learning teaching methods.

The Training of Teachers.

Mr. Turner: The pupil-teacher having completed his course of three years, and passed his final examination, is admitted to the Training College (say) in January, as now. I would admit to the College every pupil-teacher who obtained not less than 50 per cent. of the maximum marks at the final examination, and if it were at all practicable, his status on admission should be determined by his practical skill, as well as by his general attainments. Dealing with the male students, for whom as yet there is no residential College, I would make three classes of scholarships, worth £80, £40, £20. To 75 per cent. and over of total marks the higher scholarship should be awarded, to 60 per cent. and over the middle scholarship, and to 50 per cent. and over the lower scholarship. My experience in the Training College goes to prove that pupil-teachers who fail to gain scholarships or half-scholarships at the entrance examination, and who were subsequently admitted into training by paying their own expenses, have shown great industry, earnestness, and perseverance, and at the close of the session have taken a very satisfactory position in the pass lists. I put in a special plea for this class of pupil-teachers. They have passed low in the list, and they have most need of training. The lowest scholarship would be an inducement to them to enter the Training College in larger numbers and receive its benefits. We all stand by our pupil-teacher system; but it appears to me we are not getting a sufficient return from it, when we can only make a selection of twenty-five annually. The present system contracts here when it should expand. The curriculum for the first year might remain much as at present; but the appointment of a science master for Physics and Chemistry is imperative, and lecturers in Agriculture and Geology (with particular reference to metals and minerals) should visit the College regularly. The appointment of scientists and experts is necessary in order that the practical work of the students may reach a proper standard. No fault can be found with the gentlemen who have done this work in the past. Their ability is unquestionable, their courtesy most marked, but the students in obtaining such knowledge spend too much time away from their College, and trespass too frequently on the leisure time of these gentlemen at the Technical College. At the end of the year—December as now—an examination, practical and written, should be held and each student classified. By this time, or at the latest in March, each student with a 2A certificate should take his matriculation pass. Those obtaining lower certificates should, as under existing arrangements, receive employment as assistants at salaries not less than current rates. Each pupil-teacher, with the exception of absolute failures, has now had under this system a training extending over four years, and has received, reckoning the higher scholarship, from the Government £260. Under the scheme at present in existence he does not complete his pupil-teacher's course till the end of the fourth year, and has drawn from the Government in that time £211 without any College training. By the time he is a properly trained teacher another year must elapse, and then if in receipt of a full scholarship he has been paid £283. To the students who gained the 2A certificate I would grant the privilege of attendance at the University. They would have to attend the morning course at the University, and an afternoon course—say from 2·30 to 4·15, at the Training College for a second year in such subjects as psychology, elocution, advanced manual training, singing, drawing. Much of this teaching might be oral, so as not to press too heavily on the student's preparation for his University work. The 2A certificate could be made provisional until a satisfactory pass in all or some of these extra subjects had been obtained. With the expiration of this second year the students would complete their full course of training. Their second and third, at the University, would depend upon their own success; but the worthy student should receive every encouragement to complete the course. Salary should be on the present scale. Practical work in the afternoon during these years could be obtained in large city schools convenient to the University. I consider that under this arrangement the best results would be obtained from our pupil-teachers' system. Stopping short of what I have outlined is not giving our young teachers a fair opportunity of qualifying for the higher work of the profession. Under no circumstances would I recommend the Department to hand over the whole of the training of its teachers to the University. At the same time, young teachers who have proved themselves intelligent and capable of imparting instruction should receive every encouragement to graduate. Should changes such as I have suggested be adopted I am sanguine enough to believe that pupil-teachers and students would prove themselves whole-souled in the matter of aiming at the higher work. In submitting this scheme, gentlemen, I am fully aware that the cost of maintenance in the aggregate would be increased, I plead for a larger number of entrants and an extended period of training. I would point out that the Training College for male students is worked on very economical lines, because of the small numbers and the one-year course. But it is not reaching or benefiting much more than the half of those who deserve to enter its doors. When viewed from this standpoint the increased cost does not look so large. I think the time has arrived when there should be a residential college for male students. In any case, I claim that this scheme would satisfy that part of the Minister's remarks where he said that we should commence early to train our teachers and continue the period of training for a sufficient time in order to send them properly equipped to their work. Summarising my suggestions on the working of the Training College, I would point out—(*a*) that I advocate more scholarships; (*b*) appointment of science masters; (*c*) the second year of training—morning at University, afternoon at college; (*d*) second and third year at University to most deserving, afternoon at city schools; (*e*) no advocate for handing over training of teachers to University; (*f*) cost considered but decreases in view of greater number of well-equipped students; (*g*) advocate a residential college.

CHAPTER XXVIII.

Training of Primary Teachers: Pupil-teacher and Previous Training Systems Contrasted—New South Wales System.

G. H. KNIBBS.]

1. *Introductory.*—There are in actual development two fundamentally different schemes of preparing primary-school teachers for their avocation. One is what is known as the *pupil-teacher system*, characteristic of the United Kingdom and Australia, with here and there some modification; the other is what may be called the *previous-training system*, practically characteristic of the rest of Europe, and also of America, and also advocated by some of the most progressive teachers of the United Kingdom.

2. *Pupil-teacher and Previous-training Systems.*—In the pupil-teacher system in its simplest form, youths who have had *merely a primary-school education*, or at least an education in the primary schools which follow this system, after passing an entrance examination, in New South Wales, even of a lower grade than the Junior Public Examination, are employed in actual teaching, in junior classes; and in some subjects even in senior classes occasionally. Obviously their ordinary education is incomplete; and they are therefore required, in hours outside those employed in teaching, to receive instruction from the head-masters in order to qualify for further examinations. This instruction is usually given by the head-masters after a day's teaching, and covers the ordinary subjects taught in the school, but scarcely touches methodology, and the purely professional branches of teaching. The art of teaching, as such, and such subjects as the psychology, history, theory, and methodology of pædagogy, are either practically ignored in this instruction, or are superficially treated. In order to pass from the class of *pupil-teachers* to higher grades, *i.e.*, to some form of assistant teachers, examinations are usually passed, or entrance into some form of *training-school* or special college, where *subjects* are also taught, and in some instances also the methodology of their teaching, etc. The special form of training in New South Wales, will be hereinafter referred to.

In the *previous-training system*, the stage of education is always carried farther initially; that is to say, it *is advanced into the secondary stage of education*, being very often also somewhat specialised, since such pædagogical subjects as the history, theory, psychology and methodology of education, constitute part of the curriculum, in addition to the ordinary subjects.

This stage is associated also with professional visitation of schools, in order that practical teaching may be reviewed in the light of studies that have been academically undertaken; and in most cases some practice-teaching is also done under supervision and criticism.

Entrance into practical teaching as an under-assistant, or into higher pædagogical training with systematic teaching-practice, completes the course of the previous-training system.

In some schools where the pupil-teacher system exists, what are called *monitors* are also employed. These are school-pupils, charged with assisting the teacher with regard to school-material, and to some extent also, in assisting the teaching of small groups of pupils.

The plane of cleavage between the two systems is practically this:—

In the *pupil-teacher system*, youths, wholly unacquainted with secondary education, who have in general no knowledge of, and no preparation requiring a recognition of the significance of the work they are undertaking, who have never studied the methodology or theory of teaching, who are as yet without that stimulus which can come from some perception of the scope and higher aims of teaching through a knowledge of the history and psychology of education, are allowed to undertake actual work.[2] In general their aptitude is not seriously investigated, though some inquiry is usually made.

In the *previous-training system*, it is held that the teacher, *whatever class* he undertakes to teach, should have previously acquired, not merely the subject-matter which he proposes to teach, but also some knowledge of the art of teaching; and that his work should be done in the light of that stimulus and clearness of idea which, it is supposed, systematised knowledge of the history and theory of pædagogy is alone calculated to give. He is also trained in actual method in a perfectly methodical way, but in some few places the amount of teaching practice is small.

Briefly, the advocates of the pupil-teacher system defend it on the ground of necessity, economy, that the training of teachers under the system developes a real command of the teaching art; and *some even go as far as to commend it as the best possible system.* It is, of course, impossible to pretend that the pupil-teacher can be a proficient in the first stages of his teaching experience; and *the advocates of the system make light of the consequences of this upon the school pupils*, even urging that pupil-teachers are sometimes more apt than trained teachers. It has also been alleged that they are better, since they possess greater sympathy and understanding of the child mind.

Those who object to the system of pupil-teachers hold that such teachers cannot in the nature of the case be regarded as proficient, that not only is the school pupil really victimised through this inefficiency, but also that to allow anyone to engage in the actual work of teaching without adequate preparation tends to degrade his view of the importance of his work; the objectors allege that, judging by results, the pupil-teacher system is condemned.

It may be said that it is significant that the countries which have made classic contributions to the history, philosophy, psychology, theory and general methodology of education, and have reviewed the question from its national standpoint, and in reference to the efficiency of national systems of education, are countries which uncompromisingly reject the system. In

[1] The student of teaching may be called a *pupil*; what, however, is meant by *pupil-teacher* is a *teacher*, who at the time he is learning his profession, is actually engaged in teaching.

[2] Everywhere in Europe this fact excites surprise.

In regard to the presence of the pupil-teacher system in Australia, it may be pointed out that it is due largely to the influence of the traditions of the United Kingdom, and to our insularity. The method, as previously stated, is characteristic of the United Kingdom. It ought also to be said that in this territory, where in former times it was very difficult and often practically impossible to obtain qualified persons in sufficient numbers as teachers, it is easy to see that the pupil-teacher system had certainly some excuse as a temporary method of meeting a very real difficulty. And the question is, should it be allowed to continue?

It has been thought desirable to give a fairly comprehensive outline of various methods of training teachers, entering into some detail in order to shew, with some degree of exactitude, the grade of the teaching.

On reviewing the mere curricula of different institutions, it ought to be borne in mind that the outlook of the teachers and professors upon the whole question, in countries where the methodology of education has been thoroughly studied and *taught to every teacher in the beginning of his career*, is very different from that of countries which are conspicuous for absence of method and where teachers have not been so taught. And it ought also to be noted that although curricula often indicate somewhat identical things, there can be no doubt that in their detailed treatment much depends upon breadth of view and methodical thoroughness, and upon the "*Geist*" of the teaching institution.

3. *Implication of the Theory of Teaching.*—In considering the question of the training of teachers, it is necessary to bear in mind what teaching itself involves; that is to say, what is its theory and scope. It is only in this way that the significance of the great difference between the teaching of pupil-teachers and teaching of previously trained teachers can be fully appreciated. If pupil-teachers are held to be *efficient* teachers, then it follows that training is *needless;* if they are not efficient, *then their employment is at the expense of educational thoroughness*, and the school pupils suffer. This is a point which will be referred to hereinafter.

Teaching may be defined as the art of communicating knowledge and of developing character. It includes both elements, for the teacher must also be the *educator*, in the wider sense. It involves, therefore, the awakening of the moral consciousness and the cultivating of the ideals, and the training of the will of the school pupil.

All systematic attempts to communicate knowledge, to create ideals and train character, must necessarily be on a developed and regular plan; and they presuppose therefore, in addition to a knowledge of the subject-matter to be communicated, a knowledge of those laws of the human mind which are concerned in their communication, for these must determine the method of proper teaching. Consequently, as is fully recognised in Europe and America, knowledge of *pædagogical-psychology* is a prerequisite to efficient teaching. That this is, as stated, a widely recognised truth, is testified by the fact that educational courses in Europe and America invariably include it in their curricula.

The ability to assist in the development of moral consciousness, of noble ideals, amiable sentiments, and firm purpose, involves as a qualification in the educator a very similar type of knowledge, viz., that which may be called *ethical psychology*.

The whole scheme of *teaching* and of *educating*—that is to say, of *pædagogical and ethical methodology*—depends, therefore, for its wise development upon an appreciation and some degree of knowledge of psychology, and indeed also of philosophy; and there cannot be a doubt that *any teacher who has these theoretical acquirements is, other things being equal, vastly superior to one without them.* Every practical experience in teaching conveys to the former suggestions as to improvement of method, and he is alive to its significance; thus he becomes a qualified critic of his own and other people's teaching methods; his successes and failures lead him into a deeper recognition of what is necessary or desirable. However assured people may be who have neglected such subjects, that they "know all about teaching," it is perfectly certain that such assurance is merely the blindness of ignorance. And the consensus of testimony of educated men is uniform on the point.

In regard to the methodology of teaching, it may be said that some of the ablest men the world has seen have devoted their energies to exhaustive criticism of the best way of communicating knowledge with all the resources and advantages of a competent knowledge of philosophy and psychology, and of the summarised educational experience of the world. To such men the problem is full of profound difficulties still, and elaborate pædagogical and psychological researches are at the present day being made to ascertain the truth upon questions which no doubt will profoundly affect educational method.

To give point to these remarks a reference might be suggested to the number of subtle questions involved in determining the best scheme of teaching languages, discussed in another chapter of this report. This may be taken as illustrative of other subjects.

A second instance may be allowed. It is common belief—at any rate practically among a certain class of teachers—that a mechanical repetition of multiplication-tables, often in a "sing-song" way, has some value as a pædagogical process; and that the rhythm of utterance assists the memory. Many discard the monotonous modulation, but retain the method. Other educationists are convinced that what may be called the *apperceptive somnolence* of the process is in the last degree injurious; that children who do not supplement the imitative impulse, which promotes the parrot-like repetition, by some kind of intellectual digestion of the statements they are uttering, are injured psychologically, intellectually, and morally; that they are getting the worst kind of mental habit for true progress. Now, a *real* and decisive criticism of this point demands, as qualification, a knowledge of the scope of pædagogic psychology.

It is only when an *aperçu* is acquired of the whole range of educational theory and effort, that the magnitude of the problem is elucidated, and that there is any just appreciation of what teaching depends upon, or how necessary it is that a teacher shall have clear perceptions of the significance of his art before he attempts to enter upon its practice. This is really the question at issue as between the two methods.

4. *Training as a Pupil-teacher contrasted with European Training.*—The pupil-teacher system involves the employment of *young and relatively uneducated men*, or indeed mere children, in teaching. If such teachers are to be regarded as competent at each stage of their pædagogic work, it would follow that the theoretical instruction they receive is adequate to their educational development, and that *the devotion of so much time to preparatory education, as say in Europe, is wholly unnecessary.* How far that view is to be regarded as true may be judged by the contrasts outlined hereinafter.

In

In order to *fully* appreciate the difference between the methods, it must be remembered throughout, that whichever system provides the more highly educated and efficient teachers, for the instruction of those entering upon their acquirement of the teaching art, tends as time goes on, to bring about a more and more marked difference between the two classes of produced teachers, mainly in virtue of the *cumulative influence* of better educational methods; for the progression is always more rapid for the higher elements of knowledge than for the lower. Obviously all educational development is upward, and at its base it may be said to be practically stationary.

The great developments of recent years, in the higher branches of education, are naturally less conspicuous, just in proportion as daily experience is limited in regard thereto. To recognise and appreciate them, some degree of personal touch with the vast accumulations of modern knowledge is necessary. For this reason it has for a considerable time been recognised that, at every stage, education must be directly influenced by the higher grades of knowledge. Thus primary teachers need to come at least under the influence of secondary-school teachers, and secondary teachers under the influence of superior education.

Since the more highly educated, in virtue of having traversed the entire educational path covered by the less educated, can completely understand the outlook of the latter, but not contrariwise, it is imperative that all education should be influenced by the wider outlook of the higher forms of education; the spirit of progress must come from those fields where the progress is actually made.

Any country, therefore, which for years employs people in teaching, subject to no special educational influence but that of an ordinary primary-school teacher, during the period when they ought to be influenced by a higher class of teacher, viz., specialists in branches of secondary education, will tend to keep its primary staff *absolutely stationary* in development. *Relatively* to a country which proceeds on the plan of influencing its primary teachers by higher education, *it will retrograde.* This relative retrogression may unfortunately be unperceived by the stationary staff itself, because the standard of comparison is wrongly taken, and a mutual consensus of opinion would therefore carry no weight. The right comparison would be with teachers trained under the other system. Hence a complete judgment as to merits or demerits of the pupil-teacher system requires it to be remembered that the *teachers* of the teacher-student, *possess* in the two systems of training, *very different orders of qualification.*

The two systems may be contrasted as follows:—

CONTRAST OF PUPIL-TEACHER AND PREVIOUS-TRAINING SYSTEMS.

The Pupil-Teacher in Primary-School.	The European and American Student in Primary-Teaching.
(*a*) Receives initially a *primary education*, generally by teachers trained under the same system, *i.e.*, primary school teachers. The latter have in many cases no systematic training in a college. The primary-school teacher has, *in general*, not been *widely* educated.	(*a*) Receives initially a *secondary education* by secondary-school teachers, of relatively high educational qualifications, that is to say by instructors who are almost invariably men of university education, who have also been thoroughly trained to teach. The secondary-school teachers of Europe have been first well and *widely* educated, and then specially in their particular subjects.
(*b*) Enters on the actual teaching of children *without previous training as a teacher.*	(*b*) Cannot enter upon any teaching without previous study of systematic history and theory of pædagogy, and theoretical and then practical training in the "Art of Teaching."
(*c*) Receives instruction during teaching career mainly in *subjects*, and these of a very elementary character; but does not get instruction in their methodology. (Even if the "Teaching-method" and "School-management" of New South Wales are considered to be on the plane of systematic *methodology* as understood in Europe, they do not come in pupil-teacher's career, initially).	(*c*) Has, before teaching, received instruction in subjects in secondary-school training far beyond what the pupil-teacher receives during his career as pupil-teacher. His instruction is better, because his whole time and attention is given thereto. He learns methodology, and his whole training is systematic.
(*d*) The instruction is given by a primary schoolmaster, fatigued by the day's work, to a pupil-teacher, also fatigued.	(*d*) The whole of the student's time is given to his educational subjects, his master is not fatigued with other work, and the student is also fresh.
(*e*) No adequate study of general methodology, and of the development of any subject, is made a preliminary condition to giving a lesson on it.	(*e*) Every attempt to give a lesson is preceded by a systematic study of the general methodology of the subject as well as of the material of the lesson itself.
(*f*) The wider outlook of teaching has not been initially communicated by special study of the History and Theory of Education, and of their significance.	(*f*) Every student has been instructed in the History and Theory of Education, and of their significance, before attempting to teach at all.
(*g*) Criticism of a pupil-teacher's method of giving a lesson, is by a primary-school master, who as such *is not a specialist* in pædagogic method.	(*g*) Criticisms of teaching efforts on the part of the student of a school of pædagogy are by a secondary-school master, *who is a specialist* in pædagogic method.
(*h*) The *pupil-teacher* is really obtaining some sort of inferior secondary education, from a primary-school teacher who, in general, cannot be regarded as equipped to give secondary education.	(*h*) The *student of teaching* receives both his secondary education, and his special training in pædagogy, by qualified secondary-school teachers, all specialists in their subjects.
(*i*) *The pupil-teacher has not the prepared mind* to appreciate his task, not the detailed knowledge of what psychology has to teach about education, to the educator.	(*i*) *The student of teaching has the prepared mind* before he attempts to teach, and he has had instruction in the higher branches of what he proposes to teach, and he has learnt something of the psychology of educational method.

(*j*)

(*j*) The early introduction of the pupil-teacher to the *mechanical elements* of school management, and his development from that point of view, tend to make him appreciate the merely mechanical side of school teaching.

(*k*) In primary schools, where the pupil-teachers are taught in this State, a master teaches *all subjects* to a class; hence even the headmaster cannot be generally comparable in *special* qualification to a secondary-school master, who teaches only one subject or a cognate group of subjects.

(*l*) With the pupil-teacher, the *traditions* as to what constitutes a reasonable knowledge of a subject, *tend to be inferior*, because the surroundings of the aspirant are nearly always those of a primary school.

(*m*) The pupil-teacher system carries with it the implication that *a boy of ordinary education may be entrusted with teaching.*

(*n*) When the pupil-teacher commences his teaching career, he has neither a good education, nor education and training in teaching, and consequently *is* often *not respected* by school children.

(*o*) The pupil-teacher system tends to degrade the profession of the teacher by admitting children (fourteen years) as teachers, who have no adequate conception either in reference to their own education, or in regard to what education should involve for others.

(*p*) If education were nothing more than the teaching of subjects, the pupil-teacher *cannot be regarded as competently informed* thereupon, though as pupil he may be able to master them.

(*q*) In the pupil-teaching system, the young teacher has rarely realised that *education is something vastly greater than subject-teaching.* That he is *forming* the mental habits and character is rarely adequately realised.

(*r*) Authority and discipline tend to be at a disadvantage with mere children as teachers, who are consequently poorly educated and physically undeveloped.

(*s*) Personal dignity is rarely developed at the age of entrance on pupil teaching.

(*t*) The influence upon his pupils of a young, inexperienced pupil-teacher, necessarily very undeveloped as regards his education, and at at an age when, naturally, force of character, dignity of manner, and nobility of purpose are all immature, *is the reverse of favourable.*

(*u*) The schoolmaster with whom a child is brought into contact tends to form his ideals. The pupil teacher has not reached an age or state of education where the significance of this can be appreciated.

(*v*) Good teaching demands a nice appreciation of psychical conditions of children in classes, as well as intellectual recognition of the most effective way of teaching a given subject; pupil-teachers have neither the training nor knowledge to respond to the above requirements. The significance of the results of psychology for educational processes has not been studied by them.

(*j*) The early introduction of the student of teaching to the noblest, *i.e.*, the *intellectual and spiritual elements* of school-work, and the descent from that to the mechanical details, tend to make him appreciate the higher elements of education and school-teaching, and to realise the injuriousness of the merely mechanical view.

(*k*) In the secondary schools where students of teaching are taught, the secondary-school teacher, or professor, teaches only a *single subject* or a cognate group, and must himself have passed through the higher training.

(*l*) With the student of teaching the association with a teaching-staff of secondary teachers, who, moreover, are specialists in their subjects, *tends to greatly raise his conception of the dignity of teaching*, and of what constitutes a reasonable amount of knowledge therein.

(*m*) The previous training system carries with it the implication that *it is presumption for anyone to teach who has not highly qualified himself generally and specially.*

(*n*) When the student of teaching commences teaching, he has been not only more highly educated, but has been educated and trained to teach, and *is consequently respected.*

(*o*) The previous-training system tends to ennoble the teaching profession by insisting on the necessity of good education, and *intellectual*, and also, in the broad sense, *spiritual preparation.*

(*p*) The student of teaching having a higher education, and studied methodology, *is more competent*, because he looks on his subjects with a wider outlook and deeper knowledge of them.

(*q*) In the previous-training system the teacher is not only much older, but he has been systematically learning what the *scope of education is*, how incomparably higher it is than mere subject-teaching, which, however, it includes.

(*r*) Authority and discipline tend to be conserved when teaching is carried out by the older and better educated teachers of the previous-training system, educated also in the idea of responsibility.

(*s*) Personal dignity has considerably developed by the time a student of teaching is permitted to teach.

(*t*) The influence of a better educated, older, more matured teacher, whose pædagogical training has been systematic, whose more developed mind has been directed to the necessity of cultivating gentlemanly habits, a dignified bearing, and of remembering that his mission is one of the deepest significance to the human race, *tends to be decidedly favourable.*

(*u*) Bearing in mind that the schoolmaster's personality is to some extent the basis of children's ideals, and that the teacher systematically trained has been thoroughly drilled in the recognition of the seriousness of this fact, the meaning of *Education* is more deeply understood.

(*v*) The significance of psychology and psychohygiene as regards all teaching, and of discriminating between logical and pædagogical order in the teaching of subjects, are matters to which the attention of all students of teaching is strenuously directed; their attention is also called to the fact that they must wisely direct their own psychical and intellectual activity in stimulating the pupils with which they have to deal.

(*w*) Young pupil-teachers cannot be expected, and as a matter of fact do not maintain that uniform dignity, equity, and equanimity which are essential in all disciplinary relations with a class. Apart therefore from their pædagogic inefficiency, good results from their teaching cannot be expected on purely moral grounds. They often attempt to substitute coercive for directive discipline.

(*w*) Students of teaching are not only instructed as to the necessity of these pædagogic virtues, but their maturer years, and the respect that they bring, as well as the natural thoughtfulness rapidly developed at that critical period in their lives, also enable them to reach a higher plane of pædagogic efficiency on moral grounds alone.

(*x*) Pupil-teachers, though in charge of classes, have no knowledge of the significance of school-hygiene and psychical phenomena (mental fatigue, etc.) and of their relation to practical teaching.

(*x*) Students of teaching learn in their curriculum, how important it is to have regard to the way in which children react to their daily tasks, physically and psychically.

(*y*) Modern pædagogic theory and practice recognise that the early and fundamental stages of education are of the highest significance in regard to, and greatly affect, the ultimate issue. It aims therefore at ensuring on the part of the teacher, a recognition of this fact, and such preparation as will enable him to lay a pefectly sound and logical foundation in the elementary knowledge of all subjects. This demands on the part of the teacher something more than mere knowledge of subjects, viz., a knowledge of their logical development, their inter-relations and the pædagogical scheme of establishing in the minds of the children their fundamental conceptions. *The pupil-teacher system absolutely ignores this position.* The pupil-teacher has no outlook on his subject.

(*y*) In the previous-training system the subject-education of the teacher goes of course far beyond the requirements of the primary school, where he is to be professionally occupied. Hence he is able to look on the primary subjects from a higher point of view, and is thus prepared to understand the significance of thoroughness in regard to establishing the fundamental conceptions of the various subjects of teaching. He is made to recognise that the mental habits which his method of teaching tends to develope in his pupils profoundly affect their subsequent career in life. He is made to see that in all matters which are subject to logical relationships, progress, and thoroughness depend upon a clear recognition of those relationships, and he, appreciating the fact itself, makes his pupils also recognise that great care in the commencement of a subject ultimately leads to a real command thereof.

(*z*) The pupil-teacher system may be summed up as practically antagonistic to the doctrine that education from the lowest grade to the highest demands, and is worthy of, high effort, great culture, and earnest preparation, stimulated by all that can come to the human mind from a deep appreciation of what has been contributed by the great educationists of history, and by that deeper insight into the mechanism and consequences of education, which comes through the study of psychology and philosophy, and through the elaborate hygienic and psycho-hygienic researches of able scientific men. *The pupil-teacher system, in regard to the moral element, fails* to recognise that the moral influence of an immature mind, as yet untouched by any adequate recognition of the inheritance which has become ours through the earnest and devoted lives of those who fill the long list of the world's great pædagogues, is wholly inadequate to awaken in our children national or personal ideals.

(*z*) The previous-training system is an affirmation that education is so important, that no one should be allowed to undertake it professionally without a good secondary education, special instruction in the theory and practice thereof, and a broad outlook upon the world's past educational effort, upon the penetrating researches as to the best methods of teaching, and upon that wealth of knowledge as to the operations of the human mind which psychology has brought to light. This system also declares that no teacher is qualified for his functions without the realisation of what hygiene and psycho-hygiene have to say on the conditions of school-life. And far above all, the previous-training system recognises that the highest element in education, viz., the moral element, *the training of will and character, requires that the educational operator on the child mind should have the inspiration which can come only from a mature study of the noble aims and ideals of the world's great pædagogues.*

The above contrast is by no means exhaustive; it simply presents some of the more obvious points of difference. Its object is to concentrate attention on the points of issue between the two methods of training, so that in reading the schemes in detail, the evidence can be reviewed in the light of a clear understanding of *the essential antagonism of the two systems.*

The system of New South Wales will be first outlined, and it should be recollected that this was developed under conditions of difficulty, and that any adverse criticism of it can only justly apply to attempts to maintain it, or to any claim that it is ideally a defensible system.

5. *The System of qualifying Teachers in New South Wales.*—In order to properly contrast this State's system of qualifying teachers for the primary schools, and the systems of Europe and America, it is necessary to outline the system of New South Wales.

At fourteen years of age, any young lad or girl whose general health, certified by medical certificate, and character, are good, may, on passing the pupil-teachers' entrance examination, and a practical test in teaching, be accepted as a teacher.

This examination includes:—

Elementary arithmetic, elementary geography, dictation, drawing, grammar and analysis, composition (sometimes), music, etc.; a lesson in some subject selected by the candidate himself (it is customary for him to be prepared for this by the head-master of his school). A complete list of examination subjects is given hereinafter—Section 7.

Geometry (Euclid), algebra, ancient and modern languages, physics, chemistry, mechanics, etc., in fact the physical sciences generally, *are all omitted from the examination*, and the test is inferior to the fifth-class work in the "public schools" of the department. The

The examination is held either in Sydney, at the headquarters of the District Inspector of the Educational Department, or at such other place as may be found convenient; and is as above indicated, of a very elementary character, the grade being lower, as previously stated, than that of the junior public examination held by the University authorities.

The classes and emoluments of pupil-teachers are:—

Class.	Fourth.	Third.	Second.	First.
Emoluments (male pupil teacher)	£40	£46	£57	£68 per annum.
,, (female pupil teacher).....	£24	£30	£34	£46 ,,

Progress from one class to another is dependent upon a favourable report from the head-teacher and inspector in regard to conduct and usefulness, and upon the passing of a yearly examination. Except under exceptional circumstances second examinations are not given until twelve months have elapsed; and failure at two consecutive yearly examinations renders a pupil-teacher *liable* to removal from departmental service.

In the circular of the Chief Inspector, issued to those who desire to become pupil-teachers, attention is drawn to the necessity for regular and punctual attendance, exemplary conduct and demeanour, neatness of personal attire, propriety of speech and manner, and steadiness of behaviour on their part.

Some conception of the departmental view of what constitutes *experience in teaching* appears in the following quotation from the circular referred to, which is addressed only to would-be pupil-teachers:—

> Until you have had large experience in teaching, a single class will be committed to your care, for the efficient instruction of which you will be held responsible; but it is expected that you will qualify yourself to take the principal charge of a section of a school, comprising two classes.

The passages underlined are not underlined in the original, and are so marked in order to bring under notice what such a circular must suggest to the mind of the pupil-teacher as to what is meant by "experience in teaching," "efficient instruction," and taking "principal charge of a section of a school."

Instruction is required to be imparted by the head-master of the school "regularly and systematically, before or after the usual school hours," in accordance with the following time-table:—

Monday—Reading, Grammar, and Analysis.
Tuesday—Writing, Dictation, and Composition.
Wednesday—Arithmetic and Mathematics.
Thursday—Geography, Latin, and French.
Friday—Art of Teaching, History of England, and History of Australia.

"In addition to these subjects, *Singing and Drawing are to be taught when the teacher is competent to give instruction in these branches.* Due provision will also be made for the instruction of female pupil-teachers in needlework."

One-half the cost of any text-books required by the pupil-teacher is allowed on application, the amount of purchase, however, being limited to £1 10s. per annum, with the subjoined condition that a complete refund shall be made if the school service be quitted within two years of the date of grant. The pupil-teacher is informed that, "having been admitted into a highly honourable profession, it is incumbent on you so to act as not to bring discredit upon its members, but rather to raise it in public estimation. Above all, it is desirable that you should be to the whole school an example of constant regard for duty under all circumstances. In your hours of leisure and recreation you should exercise the utmost circumspection as to the books you read, the amusements you countenance, the places you visit, and the companions you choose. . . . Attention to these matters may exercise an influence over your future life incalculably great, and their importance cannot, therefore, be over-estimated."

At the end of the service as first-class pupil-teacher, a competitive examination is held for entrance into the training colleges, viz., the Fort-street Training School for young men, and the Hurlstone Training School for young women. The former is non-residential, the latter residential. Both training schools offer scholarships as follows:—

Fort-street Training School—

(i) Full scholarship; allowance, £6 per month (15 are granted).
(ii) Half scholarship; allowance, £3 per month (10 are granted).
(iii) There are usually two or three students each year who, while they pass the entrance examination, fail to obtain one of the above twenty-five scholarships. These receive no payment.

The Hurlstone Training College—

(i) Full scholarship; board, lodging, and £1 per month (15 are granted).
(ii) Half scholarship; board, lodging, and 10s. per month (10 are granted).
(iii) There are generally ten or twelve who pass the entrance examination, but gain neither kind of scholarship. These receive board and lodging, but no money allowance, and they pay to the Public Instruction Department £30 a year for the privileges received.
(iv) Day students to the number of about thirty are now admitted to training classes. These are pupil-teachers who have been successful in passing the entrance examination, but who have not obtained scholarships. They receive no salary, and attend gratuitously, living wherever convenient at their own expense.

6. *Dual Scheme of Qualification in the New South Wales System.*—Pupil-teachers who fail to obtain the scholarship, and do not elect to go into training at their own expense, are drafted off as "ex-pupil teachers" to various schools, and are engaged in teaching-duty with still fuller responsibilities. They work under the direction of head-masters, who are supposed to report upon them. As a matter of fact, this is rarely done except their work is unsatisfactory. After spending about three years in this way, this class of teacher may become an "assistant-teacher," a position which is also attained, by first passing through the training-college, and serving as "ex-students," with a provisional certificate, confirmed after three years' satisfactory service. Either can go on to the highest position in the service of the Public Instruction Department by examination in literary subjects and in teaching-skill.

A considerable number of the teachers in New South Wales have really had no systematic training in a pædagogic college; and, excepting that progress for the higher classifications may be more rapid by passing through the training-school, and that no doubt that element in one's career has some influence, the absence of methodical training seems to be no bar to reaching the highest position.

The accommodation which the training colleges afford would be totally inadequate for the requirements of the Department of Public Instruction if any attempt were made to train all the teachers. The present training-scheme of the Department in no way aims at giving all pupil-teachers the advantages of those institutions, and in this way tacitly admits that such training is not an essential. The period of attendance at the training-colleges is now only one year; and, compared with the courses of instruction given in European pædagogic colleges and training-schools, the curriculum is decidedly inferior, taken as a whole. Not only are the attainments of the candidates for training altogether on a lower plane, but the degree of specialism in the teaching is less developed. Consequently, however high the qualifications of the teachers may be, it is not possible to reach the European standard in the results.

The time-tables of the two Training Colleges are as follows:—

FORT-STREET TRAINING SCHOOL FOR TEACHERS (MEN).

NON-RESIDENTIAL TIME-TABLE.

Day.	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*	*Saturday.*
9 to 10 a.m.	Latin.	Criticisms and test-lessons.	Latin.	Criticisms and test-lessons.	English.	Physiology.
10 to 11 a.m.	French.	Criticisms and test-lessons.	French.	Criticisms and test-lessons.	Drill.	Drawing.
11·15 to 12 a.m.	Euclid.	English.	Euclid.	English.	Physics.	.....
12 to 1 p.m.	Algebra.	Method.	Algebra.	Method.	.....	.....
2·15 to 3·15 p.m.	Singing.	Latin.	Arithmetic.	Music (theory).	.....	.....
3·15 to 4·15 p.m.	Trigonometry.	French.	Trigonometry.	Drawing.	Manual training.	.....

HURLSTONE TRAINING SCHOOL FOR TEACHERS (WOMEN).

RESIDENTIAL TIME-TABLE.

Time.	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*	*Saturday.*
8·45 to 10 a.m.	Music.	Drill.	Drill.	Drawing.	Physiology.	Needlework.
10 to 11 a.m.	French.	Algebra.	Cookery demonstration.	Algebra.	Algebra.	,,
11 to 11·15 a.m.	Recess for lunch.					
11·15 to 12 a.m.	Criticism lessons.	Euclid.	Practical cookery.	Euclid.	Euclid.	Needlework.
12 to 1 p.m.	Criticism lessons.	Latin.	,,	Latin.	Latin.	Kindergarten.[1]
1 to 2 p.m.	Recess for dinner.					
2 to 3 p.m.	English.	Music.	Half-holiday.	French.	School method.	Half-holiday.
3 to 4 p.m.	Drawing.	History.		Arithmetic.	English.	
4 to 4·30 p.m.	Writing.	Theory of arithmetic.		Mapping.	Writing.	
4·30 to 5·30 p.m.	Recess for recreation.					
5·30 to 7 p.m.	Recess for tea.					
7 to 9 p.m.	Private study under supervision.					

Pupil-teachers who fail to pass for admission to training schools are usually offered positions as teachers of the *smallest* country schools (*i.e.*, half-time or provisional schools). Pupil-teachers who pass the "Entrance to Training School Examination," but who fail to get either a whole or a half scholarship, may either be appointed to country assistantships, or they may remain on (as many in Sydney do) as ex-pupil-teachers; but at the same salary as they received as first-class pupil-teachers. If they, however, go to the country, they can always receive appointments as (i) temporary assistants in country schools or (ii) teachers of half-time or provisional schools. These appointments, of course, carry a larger salary than ex-pupil-teacher's salary.

7. *New South Wales Scheme of Examinations for Teachers.*—The subjects of study for candidates for the position of pupil-teacher are as set out in the following list, which is operative from the 1st day of June, 1903—that is, this year:—

SUBJECTS OF STUDY FOR PUPIL-TEACHERS.

Before Appointment—*Candidates.*

Reading—100. To read an advanced Class Book, sanctioned by the Minister, with ease, fluency, and expression, and to understand the meaning of the passage read.
Writing—100. Specimens of penmanship, not less than two lines, in round and small hand.
Dictation—100. A piece of ordinary prose of about fifteen lines.
Arithmetic—100. To know the Arithmetical Tables, and to work the rules in Vulgar Fractions, Decimals, Proportion, and Practice.
Grammar—100. To parse and analyse correctly a passage taken from an ordinary Class Book; to know the Elements of Grammar. Derivation, Composition.
Geography—100. To understand the Geographical Terms, to have a general knowledge of the Map of the World, and the outlines of the Geography of Australia.
Drawing—50. Freehand Tests, as prescribed for a Third Class in the Standard of Proficiency.
Vocal Music—50. As prescribed for a Fourth Class in the Standard of Proficiency.
Skill in Teaching—To teach a Junior Class in the presence of an Inspector.

As

[1] The course in kindergarten, to which only one hour a week is devoted, is not to be compared with the courses in Europe or America, or with those in England Scotland, or Wales.

As remarked in Section 5, certain subjects are omitted, viz.—Geometry, algebra, trigonometry, physics, chemistry, and natural history; neither is inquiry made as regards knowledge of ancient or modern languages. It will be seen, therefore, that in the New South Wales system the teacher enters upon his professional career without a knowledge of these subjects; and he must acquire his knowledge of them, if at all, in his leisure-time—that is to say, when he is not actually engaged in teaching.

Pupil-teachers, at the end of their first year of service, have to offer themselves for the following examination:—

Pupil-teachers.—Class IV.

Reading—100. To read the Fifth Reading Book, sanctioned by the Minister, with fluency and expression. To repeat from memory 50 lines of Poetry.
Writing—100. Specimens of Copy-setting.
Dictation—100. Coutie's Word Expositor, to page 41.
Arithmetic—100. To work questions in Proportion, Vulgar Fractions and Decimals, including the Metric System and Practice.
Text-book—Loney's, Pendlebury's, Lock's, or an equivalent.
Grammar—100. Accidence, Parsing, Analysis, Derivation, and Composition.
Text-book—Conway's Smaller English Grammer, Composition and Précis Writing.
Special Text-book—Same as prescribed for University Junior Examination of current year.
**Geography*—80. Cycle of Study for Pupil-teachers of all classes. Outlines of each Continent, together with—

1903—Europe in detail.—	Physical Geography—	Air.
1904—Africa and South America.—	Physical Geography—	Water.
1905—Asia and North America.—	do	Land.
1906—Australia and Polynesia.—	do	Oceans.

And so on in cycles of four years.

NOTE.—One question at least may be given on the Geography of New South Wales *in each year*, and Mapping within the limits of each year's study

Text-books—Taylor's Geography of New South Wales.
Meiklejohn's A New Geography, comparative.
History (British and Australian)—Full value, 80 marks. Pupil-teachers of all classes will be expected to have a knowledge of the order and date of accession of each Sovereign, and of the chief events of each reign from William I., together with a detailed knowledge according to the following cycle:—
Cycle of Special Study for Pupil-teachers of all classes:—

1903—English History—	William III., Anne, George I;	Australian History to 1808.
1904—	Do	George II, George III to year 1789; Australian History to 1851.
1905—	Do	George III and George IV to year 1830; Australian History to 1859.
1906—	Do	William IV and Victoria; Australian History from 1859 to present date.

And so on in cycles of four years.
Text-books—Ransome's Short History of England. History of the Australian Colonies (Sydney: Government Printer).
Drawing—50. Blackboard practice. (For fuller information see special circular dealing with Drawing).
Vocal Music—50. First year (Staff Notation only). Dunstan's Teacher's Manual of Music. Part I, Section 1.
Geometry—100. Euclid. Book I, Props. I to XVI inclusive.
Text-book—Maclardy's Euclid, Hall and Stevens', or an equivalent.
Algebra—100. C. Smith's Elementary Algebra. Chaps. I to IV, inclusive.
Latin—100. *Via Latina*, to Exercise XV, inclusive.
French—100. Macmillan's French Course, First Year to Lesson 26, inclusive.
School Management—50. Gladman's School Method. Laurie's Kindergarten Manual.
Needlework (for Females)—To assist in giving instruction in Classes 1, 2, and 3.

*Teachers and pupil-teachers are not expected to commit to memory heights, lengths, counties, division or statistics.

In this year it will be seen they have commenced the study of Elementary Geometry, Algebra, Latin, and French. The way in which French is learnt does not give facility in speaking the language; it is well known that the majority of students cannot make themselves intelligible to anyone speaking only French.

At the close of another year's pupil-teaching, the following examination has to be passed:—

Pupil-teachers—Class III.

Reading—100. To read with improved intonation and expression.
Writing—100. Specimens of Penmanship; three hands.
Dictation—100. Coutie's Word Expositor, to page 81.
Arithmetic—100. Simple Interest, Profit and Loss. Text-book as in Class IV.
Grammar—100. Accidence, Parsing, Analysis, Derivation, Composition.
Text-books—Conway's Smaller English Grammar, Composition and Précis Writing, and Text Book for University Junior Examination of current year.
**Geography*—80. *See* Cycle in Class IV.
Text-books—As for Class IV.
History—80. English History. History of the Australian Colonies. *See* Cycle for Class IV.
Drawing—50. Freehand Drawing. (For fuller information, *see* special circular dealing with Drawing.)

Teachers and pupil-teachers are not expected to commit to memory heights, lengths, counties, divisions, or statistics.

Vocal Music—50. Second Year (Staff Notation only). Dunstan's Teacher's Manual of Music. Part I, Section II.
Geometry—100. Euclid. Propositions I to XXXII, inclusive.
Text-books—Maclardy's, Hall and Steven's, or equivalent.
Algebra—100. Charles Smith's Elementary Algebra, Chapters, I to IX, inclusive.
Latin—100. *Via Latina*, to Exercise XXXII, inclusive.
French—150. Macmillan's French Course, First Year.
School Management—50. Gladman's School Method. Laurie's Kindergarten Manual.
Needlework (for Females)—To assist in giving instruction in Classes 1, 2, 3, 4.

The next examination is the following:—

Pupil-teachers—Class II.

Reading—50. To read a standard author, with correct intonation and emphasis.
Writing—50. Specimens of Penmanship; three hands, with increased skill.
Arithmetic—100. Square Root, Cube Root, Proportional Parts, Percentages, the Metric System. Text-book as in Class IV.
Grammar—100. Accidence, Parsing, Analysis, Derivation, Composition.
Text-books—Conway's Smaller English Grammar, Composition and Précis Writing, and Special Text-book as for University Junior Examination of current year.
**Geography*—80. *See* Cycle for Class IV.
History—80. English History and Australian History. *See* Cycle for Class IV.

Drawing—

Drawing—50. Model Drawing. (For fuller information, *see* Special Circular dealing with Drawing).
Vocal Music.—50. Third year (Staff Notation only). Dunstan's Teacher's Manual of Music. Part I, Section III.
Geometry—100. Book I.
Text-books—Macdardy's, Hall and Stevens', or an equivalent.
Algebra—100. Chas. Smith's Elementary Algebra, Chapters I to XIII, inclusive.
Latin—100. *Via Latina*, to Exercise 48, inclusive.
French.—150. Macmillan's French Course, Second Year, to end of Lesson 19. Grammar, to end of Negative Conjugations
School Management.—50. Gladman's School Method. Laurie's Kindergarten Manual.
Needlework (for Females)—To assist in giving instruction in Classes 1, 2, 3, 4.

The pupil-teachers' final examination is the following:—

Pupil-teachers—Class I.

Writing—50. Specimen of Penmanship; three hands, with increased skill.
Arithmetic.—100. Application of Rules and Principles. Elementary Mensuration. Text-book as in Class IV.
Grammar—100. Accidence, Parsing, Analysis, Derivation, Composition.
Text-books—Conway's Smaller English Grammar, Composition and Précis Writing, and Special Text-book for University Junior Examination of current year.
**Geography*—80. *See* Cycle in Class IV.
History—80. English History, and Australian History. *See* Cycle for Class IV.
Drawing—50. Model Drawing. (For fuller information *see* special circular dealing with Drawing).
Vocal Music—50. Staff Notation only. Dunstan's Teacher's Manual of Music. Part I, Sections I, II, III, IV.
Geometry—100. Books I and II.
Algebra—100. C. Smith's Elementary Algebra, to Chapter XVI, inclusive.
Latin—100. *Via Latina*, to Exercise 64, inclusive.
French—150. Macmillan's French Course, Second Year, to Lesson 32, inclusive. Grammar, to *S'en aller*, inclusive.
School Management—50. Gladman's School Method. Laurie's Kindergarten Manual.
Needlework (for Females)—To assist in giving instruction in Classes 1, 2, 3, 4, 5.

* Teachers and pupil-teachers are not expected to commit to memory heights, lengths, counties, divisions, or statistics.

NOTE 1.—Any pupil-teacher who may have passed the University Junior or Senior Examination in Euclid, Algebra, Latin, or French may be exempted from further examination in such subject or subjects in Classes IV, III, and II.
NOTE 2.—Drawing must be taken by all candidates for scholarships, even though the standard has been previously satisfied.
NOTE 3.—See also Note 3 at end of Subjects of Study for Teachers.

It will be noticed that throughout his career as pupil-teacher he has had absolutely no instruction in Physics, Chemistry, or Trigonometry; further, he has done only the I and II Books of Euclid, Geometry, and Elementary Algebra. Neither has he had any instruction in Natural History. The whole of the instruction he has received is from the head-master of the school with which he is associated, who is not a specialist, *in general*, in any one of the subjects of instruction. During the whole of this time, the pupil-teacher has been professionally engaged in school-teaching.

Among the subjects that the pupil-teacher has taken are school-method and kindergarten. In order to form a comparative estimate of the thoroughness with which these subjects are treated in New South Wales and in Europe and in America, it should be recollected that in the latter places students have a much higher standard of education, devoting, too, the whole of their time to learning their profession, instead of occupying the greater part of it in school-teaching; they spend also one or two years studying kindergarten alone, under special teachers of that and cognate subjects.

The highest certificate that can be reached by passing the examination in the Training College is Class II A. It should be explained that there are really seven grades of teachers, excluding the four classes of pupil-teachers. In ascending order, these are III, C, B, and A; II, B and A; and I, B and A. The examination for a third-class certificate is as follows:—

SUBJECTS OF EXAMINATION FOR TEACHERS.

FOR A THIRD-CLASS CERTIFICATE.

Reading—800. Prose and Poetry.
Writing—500. Specimens of Copy-setting in round hand, half-text, and small hand.
Dictation—500. A passage of about fifteen lines of ordinary prose.
Arithmetic—1,000. Simple and Compound Rules, Reduction, Proportion, Practice, Simple and Compound Interest, Vulgar Fractions, and Decimals, including the Metric System.
Text-books—Pendlebury's, Lock's, Loney's, or an equivalent.
Grammar—1,000. Including Accidence, Parsing, Analysis of Sentences, Meaning and Application of Words, Saxon and Latin Prefixes and Affixes, and Composition.
Text-books—Conway's Smaller English Grammar, Composition, and Précis Writing.
For special study, the Text Book prescribed for the University Junior Examination of the current year.
**Geography*—800. Europe and Australia in detail. Mapping in connection with those Continents.
Text-books—Meiklejohn's A New Geography, comparative.
Taylor's Geography of New South Wales.

* Teachers and pupil-teachers are not expected to commit to memory heights, lengths, counties, divisions, or statistics.

History—800. Outlines of British History from the Conquest to the reign of Victoria, inclusive; date of accession of each Sovereign; leading men; and most important events. General sketch of Australian History.
Text-books—Ransome's Advanced History of England.
History of the Australian Colonies (Sydney: Government Printer).
School Management—800. Organisation, Discipline, and Instruction of Schools—in outline.
Text-books—Gladman's School Method.
Public Instruction Act and Regulations.
Sanitary Science—500.
Text-book—Notter and Firth's Practical Domestic Hygiene (Longmans & Co.).
Drawing—500. Blackboard, Freehand. (For fuller information, *see* special circular dealing with Drawing.)
Vocal Music—500. Rudiments of Music, either notation.
Text-books—Dunstan's Teacher's Manual of Music (Part I).

Preparation for this examination can be either through the Training College, or can be by other preparation during the teaching career as "ex-student"—that is to say, it can be through private study and satisfactory school-work. Inspectorial reports as to satisfactory work enable assistant teachers to pass through the successive grades in any class, viz., from C to B, and B to A; and it is necessary, *in general*, to reach Grade A, in order to pass by examination to the next higher class.

Having

Having reached Class III A, the teacher may present himself for Class II. Since he cannot offer himself for a second examination within twelve months, that period is the absolute minimum interval of time governing his rate of progress. Assuming his school work to be satisfactory, he may submit himself for the following examination, in which it will be observed he has some opportunity for specialisation (*see* the alternative groups) :—

FOR A SECOND-CLASS CERTIFICATE.

Reading—500. Prose and Poetry.
Writing—500. Specimens of Copy-lines, Ornamental Writing.
Mathematics—Arithmetic—1,000. The full course, with Mensuration.
Text-books—Hamblin Smith's, Pendlebury's, Lock's, Loney's, or any equivalent.
Todhunter's Mensuration ; Chaps. I to XVII, omitting Chap. VI.
Euclid—500. First three books, with exercises on Book I.
Text-books—Maclardy's, Hall and Stevens', or an equivalent.
Algebra—500. To Quadratic Equations, including Surds.
Text-books—C. Smith's, Loney's, or an equivalent.
Grammar—1,000. Including Accidence, Parsing, Derivation, Meaning and use of Words, Composition, and Analysis.
Text-books—Conway's English Grammar, Composition, and Précis Writing (larger work).
Subject for Special Study—Same as that prescribed for the University Senior Examination of the current year.
**Geography*—800. Physical, Political, and Commercial.
Mapping : the continents—shewing correctly the outlines, the position and direction of the principal mountain chains and rivers, and the position of the most important towns.
Text-books—Meiklejohn's A New Geography, comparative.
Philip's Class Book of Physical Geography (by W. Hughes and revised by Gregory).
History—800. British History, from the Conquest to the present time, and Australian History.
Text-books—Ransome's Advanced History of England.
History of the Australian Colonies (Sydney : Government Printer).
British Literature—600.
Smith's Smaller History of English Literature.

1903—Chapters	I	to	VIII	inclusive.
1904— ,,	IX	to	XIII	,,
1905— ,,	XIV	to	XIX	,,
1906— ,,	XX	to	XXVII	,,

And so on in cycles of four years.
Also, Smith's Specimens of English Literature for corresponding periods each year.
Art of Teaching—1,000. Organisation, Discipline, Method, and Instruction of Schools, in greater detail.
Text-books—Gladman's School Work.
Public Instruction Act and Regulations.
Sanitary Science—500.
Text-book—Notter and Firth's Practical Domestic Hygiene (Longmans & Co.).
Drawing—500. Geometrical and Model Drawing. (For fuller information, *see* special circular dealing with Drawing).
Vocal Music—500. Rudiments of Music, either notation, with increased proficiency.
Text-books—
{ Dunstan's Teacher's Manual of Music.
{ Stainer's Rudiments of Harmony, Chaps. I to IV.
Latin—1,000. Abbott's *Via Latina :* Grammar, Composition. Cæsar : De Bello Gallica, Book I. to Chapter XIV, inclusive.
French—1,000. Grammar, Composition. McMillan's French Courses, 1st and 2nd years. McMillan's First French Reader, to end of prose extracts.

* Teachers and pupil-teachers are not expected to commit to memory heights, lengths, counties, divisions, or statistics.

Group I (1,500).

Euclid—First four books of Euclid's elements, with deductions.
Text-books—Maclardy's, Hall and Stevens', or an equivalent.
Algebra—To the three progressions, inclusive.
Text-books—C. Smith's, Loney's, or an equivalent.

Group II (1,500).

Latin—Grammar, composition. Dr. Smith's smaller Latin Grammar; Arnold's compositions (Bradley) to exercise 40. Cæsar, De Bello Gallico, Books VI and VII, and Cicero, De Senectute.

Group III (1,500).

French—Grammar, composition. (For translation.) Book prescribed for University Senior Examination of current year. Havet's French class-book (complete), or Wellington College French grammar, and Wellington College French exercises.

* NOTE :—These groups of subjects are styled alternative, because candidates are allowed to choose from them the group in which they wish to be examined. Candidates are required to confine themselves to one group.
† Teachers and pupil-teachers are not expected to commit to memory heights, lengths, counties, divisions, or statistics.

Group IV.—1,500.

Any two of the following Sciences :—

Physics—
Text-book—Deschanel's National Philosophy, by Professor Everett—Part I and Part II.
Chemistry—Inorganic.
Text-book—Thorpe's Inorganic Chemistry. Non-metals. Vol. I.
Geology—
Text-books—Geikie's Class Book of Geology, and Curran's Geology of Sydney and the Blue Mountains.
Botany—
Text-book—Percy Groom's Elementary Botany (Bell and Sons).
Physiology—
Text-book—Huxley's Lessons in Elementary Physiology (latest edition).

If as a result of this examination, the teacher obtains the Class II B, he must in general pass to Class II A, by satisfactory school work, when he may again sit for examination. This examination also embraces alternative groups, and is as follows :—

FOR A FIRST-CLASS CERTIFICATE.

Reading—500. Prose and Poetry from a standard author.
Writing—500. Specimens of Copy-setting.
Mathematics—Arithmetic—900. The whole theory and practice. Plain Mensuration.
Euclid—500. As for Class II.
Algebra.—500. As for Class II.

Grammar—

Grammar—900. Including Accidence, Parsing, Analysis, Composition, Prosody, and Derivation.
Text-books—Conway's English Grammar, Composition, and Précis Writing (large work).
Meiklejohn's English Language.
**Geography*—800. Physical, Political, and Commercial.
Map Drawing.
Text-books—H. R. Mill's Realm of Nature.
Meiklejohn's A New Geography, comparative.
Art of Teaching—900. Organisation, Method, Discipline, with a knowledge of the Constitution of the Human Mind.
Text-books—Bain's Education as a Science.
Baldwin's Elementry Psychology and Education.
Public Instruction Act and Regulations.
Sanitary Science—500.
Text-book—Notter and Firth's Practical Domestic Hygiene (Longmans & Co.).
Drawing—500. To complete the full D Certificate. (For fuller information, *see* special circular dealing with Drawing.)
Vocal Music—500. Rudiments of Music and Elements of Harmony, either notation.
Text-books—Dunstan's Teacher's Manual of Music.
Stainer's Rudiments of Harmony.
History—800. History of England, 19th Century, in detail, and History of Australia.
Text-books—Ransome's Advanced History of England.
History of the Australian Colonies (Sydney : Government Printer).
English Literature—800.
Smith's Larger History of English Literature.
1903—Chapters I to V inclusive.
1904— ,, V to XII ,,
1905— ,, XIII to XVIII ,,
1906— ,, XIX to end.
And so on in cycles of four years.
For Special Study—Shakespear's "Hamlet."
Milton's "Paradise Lost." Book I.
Addison's Essays, 12 (Clarenden edition), Nos. 3, 15, 25, 61, 105, 106, 135, 159, 165, 409, 458, 487.
Bacon's Essays, 6. Civil and Moral. Blackie's edition.
Latin—1,000. As for Class II.
French—1,000. As for Class II.

† *Alternative Groups.*

Group I.—1,500.

Algebra—Including the Binomial Theorem.
Text-books—C. Smith's Treatise on Algebra, or an equivalent.
Euclid—Books I to VI, with Deductions.
Text-books—Mackay's Euclid,
Maclardy's Euclid,
Hall and Stevens' Euclid, or an equivalent.
Plane Trigonometry—
Text-book—Lock's Trigonometry.

Group II.—1,500.

Latin—Virgil, first two Books of Æneid ; Livy, Books 21 and 22. Horace's Odes, Books I to IV, inclusive
Questions on Grammar. Composition.
Dr. Smith's Larger Latin Grammar.
Abbott's Latin Prose through English Idiom.
Arnold's Latin Prose Composition. (Bradley.)

Group III.—1,500.

French—Grammar, Translation, Composition. Havet's French Class Book, Wellington College French Grammar
Wellington College French Exercises.
For Translation—Book prescribed for University Senior Examination of current year, and Hernani (Victor Hugo)

Group IV.—1,500.

Any three of the following Sciences :—

Physics—
Text-book—Deschanel's Natural Philosophy, by Professor Everett. Part II and Part III.
Chemistry—Inorganic.
Text-book—Thorpe's Inorganic Chemistry, Metals, and Non-Metals. Vols. I and II.
Geology—
Text-books—Geikie's Geology, and Curran's Geology of Sydney and the Blue Mountains.
Botany—
Text-book—Dendy and Luca's Introduction to the Study of Botany.
Physiology—
Text-book—Huxley's Elementary Lessons in Physiology (latest edition).

* Teachers and pupil teachers are not expected to commit to memory heights, lengths, countries, divisions, or statistics.

† NOTE.—These Groups of subjects are styled Alternative, because Candidates are allowed to choose from them the Group in which they wish to be examined. Candidates are required to confine themselves to one Group.

NOTE 1.—Graduates of any recognised British or Colonial University of not more than ten years' standing may be exempted from examination in the Alternative Groups for Class I or Class II.

NOTE 2.—Any Teacher who can shew, to the satisfaction of the Minister, that he is unable to take Music or Drawing, may substitute for each or either of these any one of the Sciences specified in Group IV, Class II.

NOTE 3.—Certificates issued to Teachers and Pupil-teachers by the Technical Education Branch in the undermentioned subjects will exempt t holders from further examination in such subject according to the following provision :—

Physics—Course B and Course C.
Chemistry—First year theory, and first year practice; or first and second year's theory.
Geology—First year.
Botany—First year.
Physiology—The full course.

N.B.—Teachers sitting for promotion to Class I must hold Science certificates of having passed First Grade in each year.
Freehand Drawing (second year)—any grade—for Freehand *a*.
Model Drawing (first year)—any grade—for Model *a* ; Perspective Drawing (first year)—any grade—Section I.
Geometrical Drawing (first year)—any grade—for Geometrical Drawing *a* and *b*.

A successful pass leads to Grade I B., or if the results be very good, to I A. It does not follow that because a teacher holds a certificate for a particular grade, however, that his official employment will correspond therewith, a matter to which we shall again refer. 8.

8. *Details of the Examination Method.—New South Wales Scheme.*—Assistant teachers, etc., are examined every year at the Inspectors' headquarters. Printed examination papers are sent from the head office of the Department of Public Instruction to the Inspector as the presiding officer at the examination. The written work of the examinees is transmitted to headquarters for valuation by the Board of Examiners; the local inspector awarding marks for reading, blackboard drawing, and skill in teaching. The Superintendent of Drawing at headquarters, issues written instructions or sketches shewing how any models used, are to be placed in the examination room for reproduction by the examinees. He also personally supervises that part of the examination in Sydney.

The only practical science instruction which a teacher now receives, is while he is in training at the Training College. He attends the Technical College, Sydney, for lectures in Physics, once a week. These lectures cover such subjects as Sound, Light, Heat, Electricity, etc., in a very elementary way, and as will be seen from the time devoted to such subjects, the result must be also extremely elementary, and in fact does not profess to be anything else. One might say that such instruction would assist the teacher to give ordinary object-lessons, but can hardly lead to anything like systematic knowledge of the subjects. The teaching is not comparable to the course of Applied Physics given in the same institution; nor is it comparable in any way to instruction in the same subject, as given in the secondary-school preparation for teachers in Europe and America, or in the training colleges of the United Kingdom. Female teachers receive absolutely no instruction in Practical Physics, and neither male nor female receive instruction in Chemistry, Botany, Zoology, or similar subjects.

9. *Insufficiency of text-book instruction.*—Excepting Mathematics, it will be seen that instruction in the science subjects, viz. such as Physics, Chemistry, Geology, Botany, Physiology, is obtained from text-books, so far as the Department of Public Instruction is concerned; that is, they are learnt in a literary kind of way. It is hardly necessary to say, that no person with a competent knowledge of any of these subjects would regard such a method of learning them as satisfactory, for apart from the fact that text-books are generally behind the existing state of knowledge, they have not the advantage of giving the subject living interest. Neither in such a method is there adequate practical demonstration. Text-books are aids and adjuncts to teaching; and are used very often because it is impossible in the time allotted to lectures to cover a sufficiently wide range of the subject. It is everywhere admitted that the living teacher is incomparably superior, assuming of course that he knows his subject, to the text-book. In order to give science teaching heuristic value, that is, to make it part and parcel of the mental endowment of the student, so that it shall have reality and interest for him, all such instruction should include laboratory practice. Professor Armstrong, of London, referring to heuristic methods of teaching says, "The value of mere knowledge is immensely overrated and its possession over-praised and over-rewarded," and he urges very strenuously the necessity of teaching scientific subjects practically, and in such a way to make, as it were, the scientific student a discoverer of the truths which he is to learn. He, in common with all men who have given the subject any serious attention, recognises that science cannot be really learnt except heuristically. Referring to the defects in English education, he points out that reform is necessary "simply because 'Science' is taught unscientifically—*by literary methods in fact*—without regard to its essentially heuristic character."

This matter is so important that we must refer to it at greater length.

10. *Defect of Literary Method of Learning Science in New South Wales. Teacher-training System.*—At the International Conference on Education held in connection with the Health Exhibition at South Kensington, 1884, Professor Meiklejohn stated in a paper read by him that "the heuristic method is the *only* method that is applicable to the pure sciences," and Professor Armstrong previously referred to, says "that however long it may be before we may cry '*Eureka*' of an ideally perfect system, recent experience justifies the assertion that we shall hasten the advent of that desirable time if we seek to minimise didactic and encourage heuristic teaching"; and he points out that the very considerable progress of late "is unquestionably due to the introduction of heuristic methods and exercises."[1] He recognises very keenly that scientific conceptions which enter the mind heuristically, have a totally different effect thereupon to those that are accepted didactically. Knowledge that is, as it were, discovered by the student himself, gives to his mind a habit of scientific thoroughness which it will not otherwise acquire; it has a reality that does not belong to mere literary knowledge of science. A teacher who has received his scientific instruction from a text-book or from a literary teacher of science, knowing nothing by direct discovery and experiment, can never have the enthusiasm of the real scientific student. Whatever doubt there may be, on the part of the persons whose education is wholly literary as to the proper way of learning science, there is no doubt whatever on the part of the only persons competent to judge, viz., the scientific men themselves.

Apart from such learning of science being very defective, the text-book and literary method is a bad qualification for those who, by teaching, have to impress the rising generation with a recognition of what science means to the modern world; to say nothing about the impossibility of their inspiring those among their pupils whom nature designed to be scientific investigators with a recognition of their special tendency, or with that enthusiasm which is an essential in all scientific education. Even if the knowledge therefore, of science were satisfactory, which it is not, the methods of the Department of Public Instruction do not tend to generate the right instinct, nor a wholesome view in regard to the scientific elements of the curriculum through which their teachers are passed.

Again, disregarding altogether the absolute necessity of learning scientific subjects in other than a literary way, the picking up of scientific information out of text-books cannot be compared in efficiency to properly-organised study under a specialist in *each* scientific subject. This is one of the most critical differences between the attempt to learn something about science in the New South Wales system and the systems of Europe and America.

11. *Contrast between New South Wales and European and American Systems of qualifying Teachers in Science.*—Wholly ignoring the thoroughly methodical character of the majority of European text-books on science, which would give even the merely literary student the advantage in that country, the results produced by the European system must inevitably place the teacher on a higher intellectual plane

[1] As a pædagogic method, the "heuristic" is subject to limitations which are elsewhere discussed.

plane than is possible under the system of this State. Since the European teacher's preparation for teaching is either in a secondary school with a special section of pædagogy or in a pædagogical seminarium, he is instructed in science subjects always by persons who have, in addition to a superior education (*i.e.*, an education higher than secondary) acquired *special* knowledge therein. Each teacher, therefore, has practically a command of all the most recent knowledge in his own branch, and such an acquaintance with text-books that he is able to advise a student with regard to reading. Further, his specialism enables him to communicate more respect and enthusiasm for his subject; and yet again both teacher and student have the advantage that they are unexhausted by the fatigue of the day's teaching. In the case of the pupil-teacher or assistant-teacher, even if the master be competent in any way to assist in regard to the learning of science, the opportunity comes only after the fatigue of a day's teaching. Again, however brilliant a head-master may be in some branch of science for which he has an affection, he cannot have a commanding knowledge of many subjects.

The fact that the Training Colleges of the Department of Public Instruction are absolutely without chemical or physical laboratories or the apparatus necessary for geological, botanical, and physiological research and demonstration, is an evidence of how little it is realised that such material is essential for the learning of science. So far as the Commissioners are aware this defect is unique.

It should, however, be stated that the Department is endeavouring to utilise the advantages which the University of Sydney can offer—that is to say, as far as the students in the training-school are concerned.

It should be mentioned that at the Hurlstone Training College no instruction is given in Physics, nor do the students attend elsewhere for instruction.

Both at Fort-street and Hurlstone there are first-aid classes formed, and a little elementary physiology is given.

12. *Serious Omissions in the Curricula of the Training Colleges.*—Apart from neglect to give systematic scientific instruction to those who aspire to be teachers, it may be observed that such subjects as the General History of Education, the Contributions of Psychology to Pædagogy, Subject-Methodology,[1] and School Hygiene are conspicuous by their absence, or are inadequately treated. In continental and American methods of training to teach, knowledge of these subjects is considered to be a pre-requisite. When students enter the training colleges they have been no less than four years teaching; and yet in the fifth year of their professional career, the importance of these subjects is not systematically brought under their notice, and the only semblance of Methodology that they have had is what they have acquired from "Gladman's School Work" and "Laurie's Kindergarten Manual," or from "Landon's Work on School Methods."

The study of Practical Domestic Hygiene commences when the teacher prepares himself for a third-class certificate, and the study of Education as a Science, and Elementary Psychology and Education, do not commence until preparation for the first-class certificate, when, probably, the teacher has been for ten or fifteen years engaged in his professional work.

Assuming that a teacher has the slightest professional interest in his calling, and we may regard those who have not as unworthy of consideration, the history of education must inevitably be to him a source of inspiration. No one with any adequate conception of what education means to mankind, with the slightest element of philanthropy, or with any feelings of patriotism, can fail to be strongly impressed by the magnificent self-sacrifice and unspeakably noble labours of the great figures of educational history. And there could be no more fitting impulse in the start of a professional career as teacher, than that which could come from a lecturer on such a subject, sufficiently educated and broad-minded enough to himself feel a passionate admiration for the great personalities whose toil and devotion have done so much for humanity. The omission therefore of systematic instruction in regard to the general history of education, is an omission of the most serious character; and however much individual teachers may have made good the want of this, there cannot be the slightest doubt that the general outlook of the teaching-staff of the Public Instruction Department of this State has seriously suffered through this omission.

The absence of any systematic attention to pædagogic-psychology is almost equally serious. However much the Herbartian theory of our mental faculties and their operations may have been or may have to be modified, no educationist can afford to dispense with that broadening of the mental view which comes therefrom; neither can a real teacher allow himself to be ignorant of such works for example as Lange's splendid monograph on the "Theory of Apperception" and its application to pædagogy and similar treatises. Some acquaintance with general psychology, viz., with the theory of the whole range of our mental phænomena, and with their application to educational processes, is essential in intensifying the professional teacher's recognition of the nature of his task. With such knowledge, much of the tedium of the teaching work will disappear for every true teacher, and his professional life will afford interesting material for study. But what is far more important than this is, that *the real significance of education comes into startling relief*. He realises, as he cannot otherwise, the complexity of the problem with which he is called upon to deal. He realises, moreover, that to inform the mind and to train the will are no light tasks. He learns, too, that the creation of habits of intellectual activity and the formation of noble ideals in a child are worthy of his highest efforts, and that unless he is successful in achieving these things he has failed in his task, and not only will his pupils suffer but through them the future of the people to whom they belong. No one can read the chapter on "Habit" in Professor James' "Psychology," for example, without perceiving the weightiness of psychology as a preparatory subject for all who propose to undertake teaching. This subject is wholly omitted from the departmental scheme of training teachers, and there can be no doubt that *the outlook of continental teachers upon their task is*, inasmuch as they all receive instruction in such subjects, *from a correspondingly higher platform*. It ought, moreover, to be said that the teaching of a student of psychology must always, other things being equal, be better directed than one ignorant of such a subject.

The fact that often in Europe and in America, some of the ablest teachers elect to teach infant classes, is only to be explained by their realisation of what psychology has to say upon the value of a good beginning, and the establishment of sound mental habits in the earliest stages of education.

Every

[1] Gladman's and Landon's Treatises contain a certain amount of Subject-Methodology.

Every subject of teaching has its own logical and pædagogical order, and while it is necessary to aim at establishing it finally in its logical order, it may initially be necessary to follow some other, viz., what may be called the pædagogical order of development, *i.e.*, that order which most readily, efficiently, and firmly establishes it in the juvenile mind. Here again the New South Wales scheme is defective, for the young teacher embarks on his career without the slightest conception of such a fact.

The evidence of absence of anything like adequate knowledge of school-hygiene is conspicuous in almost every school seen by the Commissioners in this State. Seating, lighting, and arrangement of rooms conflict with the practice of all other parts of the world where school hygiene has been thoroughly studied. In other countries the matter has received such a degree of attention, and the advance that has been made is so considerable, that had systematic regard been paid thereto in this State, the public school buildings recently erected would have been quite differently arranged, the variation involving no material addition in the way of expense. There is throughout our public schools a serious disregard of what would, for a long time past, have been considered essential in Switzerland. For example, *the position of children at their school-desks is distinctly unhygienic, the orientation and lighting arrangements are bad*, and the absence of single rooms for each class is *wholly unsatisfactory*. The use of glass and wooden partitions between the classes is an unsatisfactory makeshift, and would not be tolerated elsewhere.

The full significance of the hygienic defects will be better understood by reference to the chapters on "Hygiene." It will suffice to mention that the Commissioners made a special visit to some of the most recently-built schools in this State, in order to see whether their arrangements more closely corresponded with modern school hygiene. The result, as above indicated, was disappointing.

This fact may be taken as illustrating the necessity of teachers receiving systematic instruction in such a subject, not in a literary way by someone whose knowledge of the subject is secondary, and drawn probably from obsolete text-books, but from a special teacher whose business it is to keep himself informed in regard to the world's most recent contributions to the knowledge of his subject. Had such an instructor been in existence under the Department of Public Instruction, the conditions under which our school-children are engaged in their daily tasks would be very much more favourable. These matters are unimportant only to those who have failed to give the matter thorough attention.

What has been said in regard to the teaching of hygiene applies to the teaching of all other subjects. Each teacher, in his own subject, should keep himself informed in regard to all recent additions thereto, and his linguistic attainments ought to be at least equal to the task of so doing. Such an instructor is really a professor in his subject, and is able to keep his students moving onward with the world's progress.

It may be added further, that a specialist in a subject has all the advantage which a knowledge of its historical development can give, thus he perceives the organic relation of recent contributions thereto in a much more significant way than a mere sciolist.

It ought to be pointed out that any responsibilities in regard to these matters do not rest upon the teaching-staff of the Department, who, doubtless, are in many cases most able and zealous workers; *the fault lies in the system.*

13. *Professional Traditions of New South Wales System.*—Under such a system as that which obtains in our State, there will at all times be a large number of pupil-teachers, that is, of uneducated and immature persons, who nevertheless are charged with responsible teaching. The fact that one of the most important departments of the State sanctions their employment, without any previous adequate preparation, and while as yet they have had the advantage of only the most elementary kind of education, *most seriously tends to degrade at the outset their esteem of their profession.* Through them, the system tends also to lower the *general* tradition in regard to what are reasonable educational requirements for a teacher. Public opinion, in a teaching-staff so constituted, cannot be on a high plane; and the higher type of teacher whose zeal and intelligence, and whose high ideals, compel him to realise the necessity for forward movement, will always have a dead load to work against, for he will not have the support of earnest and splendid traditions, but, on the contrary, will have to encounter a sort of general feeling that the profession does not call for any special qualifications. *If it it be true that pupil-teachers are capable of doing their work properly, then it is also true that high qualifications are unnecessary.* On that point the whole weight of professional tradition in Europe and America, and recent developments in the United Kingdom, are decidedly antagonistic.

For this reason it will be necessary to outline hereinafter the scheme of training teachers in Europe, and the system of training in the United Kingdom and America.

The question of the emoluments of teachers, and the reaction of their rate of pay upon their status, and the consequence of that status upon the community, will be considered elsewhere.

14. *Fundamental issue between the Pupil-teacher System and Previous-training System.*—It is often urged by advocates of the pupil-teacher system, that all persons engaging in any avocation should have proper preparation, which is, of course, incontestable. And it is alleged that pupil-teachers, *in relation to teaching as an art*, are similar to apprentices learning a trade.

Apart from any question as to the complete failure of this view to distinguish between the importance of the moral and intellectual education of a human being, and the mere fashioning of a piece of material, it ought to be pointed out that even in industrial apprenticeships, when the material operated on is of great value, considerable preparatory practice is required on valueless or less valuable material; and, where this is impossible, very thorough preparation is always deemed necessary. The previous-training system regards the child as too sacred for crude experiments. In reviewing the methods of training in other countries, such a defence for the pupil-teacher system should be borne in mind.

The allegation that the pupil-teacher system responds to the demand that there must be an apprenticeship to teaching, carries a kind of implication that in some other supposed system there is no apprenticeship or practical training. This view is, of course, wholly in error. *No system proposes to absolutely dispense with training except the pupil-teacher system itself, since in that system untrained teachers teach*, that is to say, when *pupil-teachers* commence teaching they have had *no* preparation.

In the previous-training system, a child mind is regarded as of too much value to be more or less sacrificed to the crude experiments of a pupil-teacher. Those who propose to teach are asked at least to thoroughly prepare themselves beforehand for their work.

When

When the pupil-teacher commences teaching he is immature and uneducated. When the previous-trained teacher commences teaching, he is at least better educated, more mature, and has been seriously prepared for his work, and that not by men who have had no other experience than that of primary education, but by such as have been prepared for their work by specially-educated men in touch with all higher education.

A consensus of opinion of primary teachers, if their experience be restricted to the pupil-teacher system, is subject to the limitation that they are hardly in a position to judge of the effects of that system, and are certainly not in so favourable a position as teachers of superior education (secondary and higher), to judge of the efficiency of the preparatory work, since it does not come so directly under the observation of the primary teachers. In secondary schools and universities, the state of preparation is at once under observation, and it is easy to recognise whether the quality of the primary instruction has been good or otherwise. It is obvious that the tests of any system in vogue are of the following nature, viz., what has it done for—

(*a*) The moral status of our people?
(*b*) Their practical power and skill?
(*c*) The development of conspicuous intellect?

Whether the pupil-teacher system is likely to justify itself in respect of (*a*) may be easily answered: similarly in regard to (*b*). In regard to (*c*), can anyone engaged in higher teaching say that he finds his students have been properly prepared, or that their elementary knowledge is thorough, and their habits of thought generally satisfactory? The number of examination-passes which the State-school, or any other school, secures, is, as regards this question, not to the point, as higher education has to take the pupils as it finds them.

In discussing the systems of training in other countries, it ought to be taken into consideration that, as a matter of fact, the intellectual plane reached is higher than with us. And the question that ought to be asked is, "Has the fact of employing only educated men as teachers, and not half-educated children, really anything to do with this result?" Beyond this it may also be asked, "Will education by better educated and more mature teachers lead to increased power and intelligence in the industrial and commercial activity of the people?"

Further, "Is the pupil-teacher system not the analogue of the old apprenticeship system, where boys picked up slowly and unsystematically their handicraft, a system which the good sense of mankind has replaced by systematic education in technical schools?"

In regard to the moral and practical elements, reference may be made to the chapters on "Ethical and Religious Instruction," and "Education of the Will," and these read in connection with what we know of the real truth as regards our own community.

CHAPTER XXIX.

CHAPTER XXIX.

The State Training Schools of New South Wales.

[J. W. TURNER.]

1. *Classification.*—The teachers engaged in the State schools of New South Wales may be divided into three classes: I, trained; II, partially trained; III, untrained.

I. *Trained Teachers.*—The trained teachers of the State, almost without exception, are from the ranks of the pupil-teachers.

2. *Pupil-teachers' Examinations.*—Admission as pupil-teachers takes place as a result of competitive examinations. Candidates must not be less than 14 years of age nor more than 18 years. The subjects of examination are reading, writing, dictation, arithmetic, grammar, geography, drawing, vocal music, skill in teaching. The skill in teaching is judged by the ability of the candidate to teach a junior class in the presence of an Inspector. This practical test is made after the results of the written examination have been determined. A candidate having satisfied the examiner in the written work, and the Inspector in the practical test, has yet to pass the medical officer. The three tests having been satisfactorily passed, and the certificates of moral character confirmed, the candidate is eligible for employment.

The competitive examinations for applicant pupil-teachers attract large numbers of desirable young girls; but the lads who wish to enter the Government Service see a more liberal remuneration, and far better prospects of success in life, in other branches of the Public Service. Many of the best lads of the State, for these reasons, do not find their way into the teaching profession.

As vacancies occur, candidates are appointed according to position gained at the examination. The first three months is a period of probation in a school, at the expiration of which, if the head teacher reports favourably on the candidate's work and the Inspector concurs, the appointment is confirmed, and the probationary period is included as service. The youthful teacher then starts on his or her career, and is placed in charge of a class, but generally with the head teacher, mistress, or an assistant near to give a helping hand.

3. *Remuneration.*—The remuneration of a pupil-teacher consists partly of instruction to be given by the teacher, for at least one hour on every school day, and partly in a yearly salary. Pupil-teachers' salaries are paid at the following rates:—

	Male.	Female.
First class	£68	£46
Second class	£57	£34
Third class	£46	£30
Fourth class	£40	£24

Regarding the daily instruction to pupil-teachers, it is laid down in the "Instructions to Principal Teachers and Mistresses of Departments" that "they will devote at least one hour daily to the instruction of pupil-teachers, and will see that *all* the prescribed subjects are duly studied by them. Suitable programmes are to be prepared, and a register is to be kept (*a*) showing the time of commencing the daily lesson, and the time at which it was concluded, (*b*) the exercise or home-lesson appointed for the day. It must be clearly understood that mistresses of departments are to perform a fair share of the work of instructing pupil-teachers."

4. *Apportionment of Pupil-teachers.*—The subjoined instruction, No. 28 on the list, shows the apportionment of pupil-teachers in the schools in which they are employed. In actual practice the number of assistants or temporary assistants is increased, and the pupil-teachers correspondingly decreased.

In a mixed school, or in a separate Boys' or Girls' Department, having an average attendance of—

50 pupils,	the staff may consist of teacher and pupil-teacher.
70 " " "	teacher and assistant.
80 to 110 " " "	teacher and 2 pupil-teachers.
110 to 140 " " "	teacher, assistant, and pupil-teacher.
140 to 180 " " "	teacher, assistant, and 2 pupil-teachers.
180 to 220 " " "	teacher, assistant, and 3 "
220 to 270 " " "	teacher, 2 assistants, and 2 pupil-teachers.
270 to 310 " " "	teacher, 2 " " 3 "
310 to 350 " " "	teacher, 2 " " 4 "
350 to 400 " " "	teacher, 3 " " 4 "
400 to 450 " " "	teacher, 3 " " 5 "
450 to 500 " " "	teacher, 3 " " 6 "

In every separate Infants' Department having an average attendance of—

100 to 120 pupils,	the staff may consist of teacher and 2 pupil-teachers.
120 to 160 " " "	teacher, assistant, and pupil-teacher.
160 to 200 " " "	teacher, assistant, and 2 pupil-teachers.
200 to 240 " " "	teacher, assistant, and 3 "
240 to 300 " " "	teacher, 2 assistants, and 3 pupil-teachers.
300 to 340 " " "	teacher, 2 " " 4 "
340 to 380 " " "	teacher, 2 " " 5 "
380 to 440 " " "	teacher, 3 " " 5 "
440 to 480 " " "	teacher, 3 " " 6 "
480 to 550 " " "	teacher 3 " " 7 "

5. *Examinations for admission to Training School.*—In December of each year a general examination of pupil-teachers, in written subjects, is held; and if examinees are successful in gaining a pass at this examination, and the Inspector's reports on their skill and conduct, based upon his own observations at the annual school examination and on reports furnished by the principal teachers and mistresses, are satisfactory, they are promoted to the next class and get the increased emolument. At the expiration of their fourth year of service, if they have successfully passed all the yearly examinations, pupil-teachers take their final examination, in which they compete for scholarships admitting to the Training Schools—either Fort-street for males, or Hurlstone for females. Thirty full scholarships, each worth £72 per annum, and twenty half-scholarships, each worth £36 per annum, are awarded at this examination. In the case of the Hurlstone students, who are residential, board and lodging are provided in lieu of the money values of the scholarships.

Prior to admission into the Training School, the successful pupil-teacher is required to make a declaration that "he intends, in good faith, to follow the profession of a teacher in schools under the Minister, and that he will accept a situation in any district to which he may be appointed. He must also procure a guarantee from two responsible persons that the whole expense of his training defrayed by the State will be refunded, if, from any cause whatever, he shall not enter the service of the Minister, or shall leave it in less than three years from the date of his first appointment." (Regulation 83.)

6. *Courses of Study.*—The course of training in both Fort-street and Hurlstone Training Schools lasts one year, and embraces academic and professional instruction. The Regulation bearing on practical training and the courses of study for both Training Schools are as follow:—

PRACTICAL TRAINING

86. The students shall be trained in the practical management of schools by attendance at the Practising Schools or at such other schools as the Minister may direct.

COURSES OF STUDY AND STAFF, FORT-STREET TRAINING SCHOOL.

First Year Arts Course.

Latin: Cicero in Catilinam. Virgil, Æneid, Books XI, XII. Composition.
French: Daudet—Tartarin de Tarascon. Bornier—Fille de Roland. Reynard—Le Joueur. Composition.
English: Lectures on Language, Composition, Style. Shakespeare—Twelfth Night. Chaucer—Sweet's Selections
Algebra: Elementary course, including three Progressions.
Euclid: Books I.–VI.
Trigonometry: Elementary course, including properties of triangles without logarithms.
Chemistry: Non-metals (subject not taught in Training Schools).
Physics: Elementary course (subject taken at Technical College).
Physiography: Brief course, with special reference to Australian Physical Geography (subject not taught in Training Schools).

Art of Teaching.—Fort-street Training School.

Course of Lectures upon Education.

1. A course of lectures upon the History of Education, comprising:—Greek Education; the Theories of Plato and Aristotle; Roman Education; Early Christian Education, The Development of Schools to the Reformation; Effect of the Reformation; Jesuit Schools; Comenius; Pestalozzi; Froebel; Herbart and Herbartianism.
2. A course of lectures in Method in Education, comprising:—Development of Child's Powers; Characteristics and Advantages of Good Methods; Typical Methods of Procedure in actual Use; Different kinds of Lessons; Method of preparation of notes—Subject matter and delivery; Different forms of Questions, and their advantages; Means of Discipline; Organisation.

Drawing.—Fort-street Training School.

A Course of Twenty Lessons on Brushwork.

Direct from Nature.	Design based upon same.
1. The manipulation of the brush only.	
2. Bamboo foliage	Repeating border for dado
3. Moreton Bay fig	To fill a square, for a tile
4. Rose—leaf	To fill a circle.
5. Pepper foliage	Upright border.
6. Myrtle foliage	Border—without suggestions.
7. Choisya foliage	Square—another tile.
8. Marguerite and leaf	For an all-over, repeat on net.
9 to 20. All the following lessons will have to be based upon blossoms in season, but the designs from them will be as stated in next column:—	To fill an oblong.
	10. Circle.
	11. All-over for wall hangings; on  net.
	12. All-over for table cover on  net.
	13. Stencil for border.
	14. Stencil for surface (all-over) and a drop repeat.
	15. Painted panel.
	16. Stencil. Book cover.
	17. Stencil—frieze.
	18. Inlaid wood panel.
	19. Christmas card.
	20. Book plate.

SYLLABUS OF THE DEPARTMENT OF MANUAL TRAINING (FORT-STREET).

Students of the Training College.

Syllabus.—One year Course.

Elementary Solid Geometry and Mechanical or Construction Drawing. (*Vide* Solid Geometry First Year.) Principles and practice of isometric projection.

Timber.—Names and peculiarities of the different kinds of timber principally grown in New South Wales; growth, composition, age, when to fell, season to fell, natural and artificial means of seasoning, cutting up for economy and beauty, decay of timber and common modes of preservation, measuring and selection.

Tools.—The names, shape, and construction of the principal hand-tools for working in wood; how to grind, sharpen, and keep them in order.

Saws.—The names and peculiarities of the different saws; set, shape of teeth, hook, cutting edge of teeth, and how to sharpen them.

Dressing timber truly, testing it with winding sticks, and square; chamfering, setting out work, halving, mortising and tenoning, scarfing, preparing and using glue; nails and screws, and exercises in driving them; making small boxes, small mitred frame, Oxford frame, &c.

STAFF OF FORT-STREET TRAINING SCHOOL.

Principal—Art of Teaching, Class Management.
Lecturer—Languages and Mathematics. (Also at Hurlstone.)
,, English. (On staff of Model School.)
Master Practising School.
Lecturer—Manual Training.
Visiting Lecturer—Drawing.
,, ,, Music. (Also at Hurlstone.)
,, ,, Drill. (Officer from Cadet Office).
,, ,, Physiology. (Also at Hurlstone).

COURSE OF STUDY AND STAFF.—HURLSTONE TRAINING SCHOOL.

STANDARD OF MATRICULATION EXAMINATION.—PASS WORK.

1. Latin.—Translation into English of passages from set authors and of Latin passages at sight, and translation of simple English sentences into Latin. Candidates are expected to show an accurate knowledge of Latin Accidence. Subject set for March, 1903. Livy, Book XXII.
2. Arithmetic.
3. Algebra.—To quadratic equations involving an unknown quantity.
4. Geometry.—Euclid, Books I, II, and III.
5. French.—An examination similar to that in Latin. Subject set for March, 1903. H. Gréville, Perdue.

In addition to the above, the course includes:—

6. English.—Tempest (Shakespeare).
7. History.—Growth of the Empire (Jose).
8. Kindergarten Lectures—one hour a week.
9. Physiology.
10. Music.
11. Art of Teaching.—Principles of Class Management.
12. Drawing.
13. Drill.
14. Cookery.—The primary school course.
15. Needlework.

KINDERGARTEN.

Course of Kindergarten work done by the Students at Hurlstone Training School, and instruction given them in Froebel's system.

1. A short account of the life and work of Friedrich August Froebel.
2. The following gifts and occupations are studied and worked:—

Group I.

Solids 1. Gift—The Woollen Ball. 2. Gift—The Ball of Wood, Cylinder, and Cube. 3. Gift—The First Building Box. 4. Gift—The Second Building Box. 5. Gift—The Third Building Box. 6. Gift—The Fourth Building Box.

Group II.

Planes 7.—(*a*) Planes of Wood. (*b*) Planes of Paper. 8. Paper Folding. 9. Paper Plaiting.

Group III.

10. Jointed Lath. 11. Plaiting Sticks. 12. Stick Laying. 13. Pea Work. 14. Drawing.

Group IV.

15. Pricking. Bead Stringing. 16. Sewing on Cards.

Group V.

Shapeless Material. 17. Modelling.

PHYSIOLOGY.

Synopsis of Lessons given at Training Schools.

Bone—Composition, animal matter and lime-salts whence obtained; importance of food containing this earthy matter.
Skeleton, Spinal Column, and Chest Cavity; how affected by bad positions assumed during education and growth.
Joints, Structure, &c.—Importance of using joints to prevent stiffness.
Muscles, movement—Bones form a system of levers, muscles act as the power—exercise and its effects on the Lungs, Heart, and Digestive Organs, also the reaction of physical exercise on the Brain.
Circulation, Heart, Blood-vessels, &c. Respiration—Lungs, Chemistry of Air, Ventilation, importance of exercise in fresh air, out-door sports, &c.
Digestion—Structure and function of the Alimentary Canal. Care of the Teeth, Mastication, Choice of food, Constipation, Dyspepsia, Alcohol, Preparation of Food.
Nervous System—Structure and functions, special organs of sense—how they can be improved and how they are impaired.
Eye—Refraction, importance of correcting refractive errors. Squinting.
Ear—Sound, Deafness, post nasal growths affect hearing, &c,
Nose—Smell, importance of distinguishing good and bad odours.
Tongue—Taste. Taste should be cultivated.
Touch—Tactile impressions—training of the sense of touch—some people clumsy and all thumbs.
Skin—Organ of loss to body. Cleanliness, Parasitic diseases. Kidneys.

The object of the lesson is to apply the teaching to every-day life in regard to the individual and public health. The course is generally concluded with "First Aid" instruction.

MUSIC.

Synopsis of Musical Course.—Training Schools, Fort-street and Hurlstone.

Introductory Lessons. Sound, How produced. Pitch, How measured. Notation of Pitch—both in Tonic Sol-Fa and Staff Notation. Notation of Time—both Notations. The Scale—its growth and changes. Lessons in Tonic Sol-Fa Notation. Staff Notation. The different clefs. Major and Minor Scales. Key and Time Signatures. Incidental Italian Terms of Tempo and Expression. Translation from one notation to the other. Melody and Musical Form. Composition of simple musical phrases, to illustrate particular intervals, and also Transition (natural and abrupt). Harmony, including the Chord of the Dominant 7th. The art of harmonising simple melodies in two and three parts.

During the whole course singing lessons are given, embracing production of voice, reading at sight, and part singing. Each Student also gives one or more lessons to different classes in the Practising School, from the lowest to the highest classes. For this the student has to prepare notes, which are really essays on the subject he teaches. These lessons are criticised by the Lecturer and faults pointed out. The Lecturer also gives some specimen lessons to various classes to let the Students see his method.

Each Student, in his turn, has frequently to conduct the singing of part songs or time exercises in the Students' Class. A few lectures are given on the Music of different nations and their composers.

ART OF TEACHING.

Course of Lectures upon Education, Hurlstone Training School.

Education: Its Aims, Moral Aspect. School Government. Organisation. Discipline. Method. Attention. Qualifications of a Teacher. Principles of Classification. Registration. General View of Oral Teaching. Special Oral Teaching. Nature Teaching. The Art of Questioning. Subjects such as Geography, Grammar, &c., are chiefly dealt with in connection with criticism lessons.

STAFF, HURLSTONE TRAINING SCHOOL

Principal—School Management and French.
Lecturer in Languages and Mathematics. (Also at Fort-street.)
,, English, History, Arithmetic, Needlework.
Mistress—Practising School.
Visiting Lecturer—Drawing.
,, ,, Music. (Also at Fort-street.)
,, ,, Drill. (Officer from Cadet Office.)
,, ,, Physiology. (Also at Fort-street.)
,, ,, Kindergarten.
,, ,, Cookery.

7. *Practical Training.*—Practical training in teaching is obtained by regular visits, amounting to about four or five weeks' actual teaching annually in the Practising Schools, by test, criticism, and specimen lessons, and by observation of methods under the direction of the Master of Method or the Mistress of the Practising School.

8. *Relation of University to Training School.*—In accordance with a By-law of the Senate of the University, matriculated students in the Training Schools may sit at the examination for the first year in the Arts Course.

By-laws of the University: Chapter XII., Section 8—"Notwithstanding the provisions of By-laws 6 and 7, matriculated students who are students in a training institution for teachers organised under the Department of Public Instruction, may be admitted to the first-year examination in the Faculty of Arts without having attended the University lectures, upon presenting a certificate from the Under-Secretary for Public Instruction to the effect that they have attended the course of instruction in such training institution for one year after matriculating. Students of a training institution who have passed the first-year examination may be admitted to the second-year examination in the Faculty of Arts without having attended the University lectures of the second year, upon presenting a similar certificate to the effect that they have attended a second course of instruction in such training institution for one year after passing their first-year examination. All such students having passed the second-year examination shall have the status of students commencing the third year in the Faculty of Arts."

Students who are successful at this examination are allowed to complete their Arts Course in the University, conditional on good conduct and progress, at the expense of the State.

9. *Departmental Examination.*—A departmental examination of all students is held at the end of their course, and certificates of classification are issued. Students sitting for the first-year examination, Arts course, are only required, in the departmental examination, to take up subjects of a professional character. Regulation 87, bearing upon the departmental examination of students, is here quoted: "Oral examinations of the students shall be held periodically to test their attention and progress; and written examinations shall take place yearly, in December, when provisional classifications will be awarded according to attainments and teaching skill to students who have completed their course. No certificate shall be confirmed until the Inspector's report shows that the student is successful in the management of a school."

10. *Classes of Certificates.*—In the New South Wales teaching service three classes of certificates are recognised, viz., I, II, III, and these are subdivided as follow:—

I A, the highest.	III A, the highest in its class.
I B.	III B.
II A, the highest in its class.	III C.
II B.	

The highest classification that can be taken by a student at his final examination in the Training Schools is II A. All certificates issued are provisional (Regulation 87), and are not confirmed until the student has spent at least three years as a temporary assistant teacher in a school, or, it may be, a relieving teacher, and has obtained satisfactory reports each year from his inspector. Students (not including

including those taking first-year's examination, Arts Course) who, at the final departmental examination—academic and professional—succeed in gaining 80 per cent. of aggregate marks, are granted a University course free of expense, conditional on passing the ordinary March matriculation and receiving satisfactory reports on conduct and progress from year to year. This class of students, and also the class successful in the first-year examination, Arts Course, attend some public school from 2·30 to 4 o'clock on the afternoons when there are no lectures at the University, and are exactly on the same footing as temporary assistant teachers going out with the ordinary certificate.

11. *Rate of Remuneration.*—The rate of pay to ex-students, whether with the Training School certificate or the undergraduate standing, is £96 for the first-year males, £84 for females; £104 for second-year males, £90 for females; £113 for third-year males, £96 for females; £120 for fourth-year males, £100 for females.

12. *Scholarships.*—In addition to full and half scholarship holders, the Minister of Public Instruction "may authorise to be received into the Training Schools other pupil-teachers who have passed the entrance examination, and are prepared to pay the whole cost of their maintenance while in training." This class, termed non-scholarship candidates, comprises those who failed to obtain scholarships—half or full—at the final examination of the pupil-teacher course, which is the entrance examination to the Training Schools. The non-scholarship students have equal privileges while in training with the scholarship students. For the current year the classification of the students in attendance is:—

Hurlstone Training School, females only—
15 full scholarships.
11 half scholarships (two candidates tied for tenth place).
45 non-scholarships.

Of the 45 non-scholarship students, 16 are in residence at the school, paying full cost of their maintenance, and 29 are day students at no expense to the State.

Fort-street Training School, males only, non-residential—
15 full scholarships.
10 half scholarships.
6 non-scholarships.

13. II. *Partially-trained Teachers.*—The partially-trained teachers consist of (*a*) teachers who served only a part of their pupil-teacher course, and elected before its completion to take up work as teachers in charge of small country schools; (*b*) teachers who completed their course as pupil-teachers, but failed to gain admission into the training-schools, and did not see their way clear to enter as paying students, and were retained in their schools as ex-pupil-teachers for a time, until suitable appointments were found for them in the country; and (*c*) teachers who gained half or full scholarships at the final examination for pupil-teachers, but did not enter the training-schools, preferring employment as ex-pupil-teachers. The training of these classes, unfortunately, ends with their retirement from the ranks of the pupil-teachers. In England the (*b*) class would be afforded an opportunity at Evening Continuation Schools or training-classes of studying for the teacher's certificate. The duties of ex-pupil-teachers under (*b*) and (*c*) are the same as assistant teachers, but the emoluments are less. The salary paid to ex-pupil-teachers on taking charge of small schools is £88 per annum. Ex-pupil-teachers who passed their final examination as pupil-teachers are paid £90 per annum when appointed as assistants in country schools. Ex-pupil-teachers who failed at their final examination are paid £72 per annum when appointed as assistants in country schools. The salaries paid to ex-pupil-teachers while remaining on in their old schools are, males £68, females £46. The salaries paid to the same class of pupil-teachers in England (those remaining on in their old schools) are, males £45, females £30.

Advancement in the service from class to class can only be obtained by passing examinations in the various subjects prescribed, and in practical skill, and pupil-teachers included under heading II are not allowed to sit for certificates of classification until they have shown the necessary skill in the management of a school.

14. III. *Untrained Teachers.*—The supply of trained or partially-trained teachers for the State schools of New South Wales has probably never been adequate to the demand. Under the provisions of the Land Act of 1861, numerous small settlements sprung up in various parts of the State of New South Wales, and along with their growth came the necessity for establishing small schools. The greatest difficulty was not in providing the buildings, although in those days a considerable share of the expense in the erection of the school was borne by the people, but in the selection of a teacher.

The Council of Education, which came into power by the Public Schools Act of 1866, inaugurated a system of appointments to small schools—a class of teachers of small schools—which obtains to the present day. In very few cases have the men and women so admitted received any training as teachers.

Small-school teachers are paid £72 a year for their first year of service. Afterwards, and until they gain a certificate of classification, they are paid at the rate of £88 per annum.

While granting that some untrained teachers have risen to very superior positions in the profession, it cannot be denied that the system generally does not tend to high educational ideals. As a substitute system it should no longer exist.

A complete set of forms and documents, in order of progression, showing small-school teacher practice, is attached:—

ADVERTISEMENT, WITH CONDITIONS.

Public Service Board, 50, Young-street, Sydney, 20 February, 1903.

Teachers (Male) being required for the smallest Country Schools, the Public Service Board invite applications for the position from unmarried men between 18 and 35 years of age. Documentary proof of age must be furnished prior to the date of appointment.

Applicants will be required to pass a competitive examination in the following subjects:—

Arithmetic, Dictation, Grammar, Geography, and Reading, up to the standard provided in the General Regulations published in the *Government Gazette* of 13th December, 1901, for a Third-Class Certificate for Teachers.

Copies of these Regulations may be seen at any Public School.

Examinations will be held on Tuesday, 7th April next, at the Headquarters of the Inspectors of Schools.

The salary for the first twelve months will be at the rate of £72 per annum, the position being in the Educational Division.

Before

Before appointment, successful candidates at the examination will be required to attend an important Public School for a period of three or four weeks, with a view to obtaining instructions in the keeping of school records, &c. They will be granted an allowance at the rate of £1 per week during the period of such training, if favourably reported upon by the Head master.

Applications must be made on forms for the purpose, obtainable at this office, or from Inspectors of Schools in Country Districts, and must reach the undersigned not later than the 23rd March proximo.

By order of the Board,
J. W. HOLLIMAN,
Secretary.

The Inspectors' Head-quarters are:—

Albury	Bowral	Dungog	Grafton	Mudgee	Sydney	Wellington
Armidale	Braidwood	East Maitland	Hay	Newcastle	Tamworth	Wollongong
Bathurst	Broken Hill	Forbes	Kempsey	Parramatta	Taree	Yass
Bega	Crookwell	Glen Innes	Lismore	Quirindi	Wagga	Young
Blackheath	Dubbo	Goulburn				

[Urgent.]

MEMORANDUM to

PROPOSED EXAMINATION OF SMALL SCHOOL CANDIDATES.

It is requested that you will be good enough to arrange to hold an examination of candidates for small schools on . . The names of the candidates will be forwarded to you in due course.

Please inform me in what building you will conduct the examination, in order that the candidates may be summoned to attend thereat.

A supply of application forms is forwarded herewith.

Department of Public Instruction,
Sydney.

F. BRIDGES,
Chief Inspector.

FORM TO BE FILLED UP BY APPLICANTS FOR EMPLOYMENT IN SCHOOLS UNDER THE DEPARTMENT OF PUBLIC INSTRUCTION.

Name in full.	If Married.	Date and Year of Birth.	Country where Born.	Period of Residence in New South Wales.	If trained, and where.	Where employed, and during what length of time, as teacher.

(Signature)

(Date)

(Address to which Letters may be sent)

(Post Town)

Note.—Applicants are requested not to leave any blank spaces.

---

1. State the particulars of your early education. (You should state what Public Schools you have attended, and for what period.)
2. How has your time been occupied since you left school?
3. If ever in a Court of Law, state under what circumstances.
4. Have you ever been trained as a teacher? If so, state the particulars.
5. If you have ever been engaged in teaching, state explicitly where and how long.
6. If you have discontinued teaching, state your reasons for doing so.
7. What do you consider the more important qualifications of a teacher.
8. State your reasons for quitting your last situation.
9. What are your present means of subsistence?
10. Has your last employer given you any testimonial? If so, append it. If not, explain why not.
11. Give a list of the testimonials as to the moral character you have forwarded with your application for employment, and state opposite the names of your referees their addresses and how long each has known you, as well as when he last saw you.
12. What opportunity of knowing you intimately have those who signed your testimonials?
13. State whether you are a natural born British subject; or, if naturalised, date of naturalisation.

(Signature)

(Place)

(Date)

1

MEMORANDUM to

EXAMINATION OF CANDIDATES FOR SMALL SCHOOLS.

The undermentioned candidates for examinations for small schools will be instructed to attend at the Public School at at 9 o'clock a.m. on

The examination questions are forwarded herewith under sealed cover—each subject to be opened in the presence of the candidates at the time denoted on the envelope.

The candidates' papers should be posted to me immediately after the close of the examination.

F. BRIDGES,
Chief Inspector.

Names of Candidates.

Department of Public Instruction,
Sydney,

Department

Department of Public Instruction.

INSPECTOR'S REPORT upon Applicant for the Office of Teacher of a Small School. Examined at

1. Apparent Age.
2. Constitution. Manners and Address. Appearance.
3. Bodily Infirmities.
4. Eyesight and Hearing.
5. Apparent Character.
6. Ability to Read.
7. Inspector's general opinion of Applicant.

Inspector's Office. Inspector.

NOTICE TO APPLICANT.

Department of Public Instruction, Sydney.

MEMORANDUM to Mr.

With reference to your application, amongst others, for appointment as Teacher of a small country school, I am directed to acquaint you that an examination of candidates will be held on . You are requested to attend at the Public School at on that date, at 9 o'clock, a.m.

A copy of instructions to candidates attending examination is forwarded herewith for your information.

F. BRIDGES,
Chief Inspector.

Department of Public Instruction.

DIRECTIONS TO EXAMINEES.

1. No books, manuscript, writing paper, or blotting paper, are allowed to be brought into the Examination Room. No communication whatever between candidates can be allowed during the Examination. Should any Examinee desire to refer to the Officer-in-charge, he must stand up and do so audibly, in order to prevent misconception.

Any Candidate wilfully violating any of these rules will be expelled from the Examination Room.

2. A margin of two inches must be left on the binding edge of each sheet of paper. The writing should be full, clear, and legible, and should not approach within one inch of the foot and top of page.

3. Every Examinee should put his name at the top right-hand corner of every sheet of paper, the date and place of examination, and the class of paper taken.

4. In the answers to the mathematical questions, the work must be sent up. No marks will be given for answers only.

5. When the papers on any subject are called for, the pages must be numbered, the sheets fastened together on the top left-hand corner, and at once handed to the Officer-in-charge.

New South Wales.—Department of Public Instruction.

EXAMINATION OF CANDIDATES FOR SMALL SCHOOLS.

Grammar.

Tuesday, 7th April, 1903. 9·30 a.m. to 11 a.m.

1. Analyse the following sentence, and parse the words in italics :—And, as he *slept*, he dreamed *that* the God *whose* image overshadowed him, spoke to him, and promised *him* the Kingdom and a long and prosperous reign, but *bade* him in return to clear away the *sand* in *which* the great image *was half-buried*.
2. State what you know about the Pronoun.
3. Write a short essay on Discipline.

New South Wales.—Department of Public Instruction.

EXAMINATION OF CANDIDATES FOR SMALL SCHOOLS.

Geography.

Tuesday, 7th April, 1903. 11 a.m. to 12·30 p.m.

1. Name the countries through which the Equator passes.
2. State briefly what you know about—Algeria, Bulgaria, Ceylon, Dundee, Echuca, Fremantle, Gulgong, Hyderabad, Ischia, Jamaica, Krakatoa, Munich.
3. Draw an outline map of New South Wales, showing the chief headlands and indentations.

New South Wales.—Department of Public Instruction.

EXAMINATION OF CANDIDATES FOR SMALL SCHOOLS.

Dictation.

Tuesday, 7th April, 1903. 12·30 p.m. to 1 p.m.

But the age of chivalry is gone. That of sophisters, economists, and calculators has succeeded, and the glory of Europe is extinguished for ever. Never, never more shall we behold that generous loyalty to rank and sex, that proud submission, that dignified obedience, that subordination of the heart, which kept alive, even in servitude itself, the spirit of an exalted freedom. The unbought grace of life, the cheap defence of nations, the nurse of manly sentiment and heroic enterprise, is gone. It is gone, that sensibility of principle, that chastity of honour, which felt a stain like a wound, which inspired courage whilst it mitigated ferocity, which ennobled whatever it touched, and under which vice itself lost half its evil by losing all its grossness.

New South Wales.—Department of Public Instruction.

EXAMINATIONS OF CANDIDATES FOR SMALL SCHOOLS.

Arithmetic.

Tuesday, 7th April, 1903. 2 p.m. to 3·30 p.m.

1. Reduce ·6 of £1 + ·6 of 5s. 3d. + ·375 of a crown to the decimal of 16s.
2. In what time will interest on £812 10s. 10d. amount to £771 18s. 3½d. at 4¾d. per cent. ?
3. Standard gold coin is made of gold 22 carats fine, and 1 lb. Troy of this metal yields $46\frac{2}{10}$ sovereigns : What weight of pure gold is there in 100 sovereigns?
4. Find the side of a square whose area is 12 acres.
5. A person buys teas at 3s. and 4s. the lb., and mixes them in the proportion of 4 : 7 ;—what will he gain per cent. by selling the mixture at 3s. 9d. per lb ?

NOTIFICATION

NOTIFICATION OF RESULT OF EXAMINATION.

Sir, Department of Public Instruction, Sydney, 190 .

With reference to your application for appointment as Teacher of a small country school, I am directed to inform you that the result of the literary examination which you underwent on the is considered satisfactory.

2. Before you can be adjudged fully eligible for employment, however, it is necessary that you should attend the Public School at for a period of weeks from in order to receive instructions in making out Returns, &c., keeping the School Records, compiling the Lesson Registers, and in the practical work of teaching.

3. At the end of your attendance, if the report upon you be satisfactory, you will receive an allowance at the rate of £1 per week.

I have the honor to be,
Sir,
Your most obedient Servant,

Mr. Under Secretary.

NOTICE TO APPLICANT REGARDING MEDICAL CERTIFICATE.

Department of Public Instruction, Sydney, 190 .

I am directed to request that you will call upon a legally qualified medical practitioner with a view to obtain the medical certificate necessary to render you eligible for employment as a Teacher. The doctor's fees must be paid by you, but he should forward his certificate direct to this Office, in the form appended.

2. The accompanying statement should be filled up, signed, and handed by you to the doctor before being examined by him.

3. Before being finally accepted, it is necessary that you should furnish a registration copy of your Certificate of Birth or other unquestionable documentary evidence as to your exact age, and that you should fill in and sign the accompanying declaration, and return it to this Office.

I have the honor to be,
Your most obedient Servant,

Under Secretary.

STATEMENT to be made by Candidates for the Office of Teacher, presenting themselves for Medical Examination.

Name.
Date and year of your birth
What has been the state of your health since childhood?
What was the nature of your last illness?
Have you ever had, or are you subject to, spitting of blood, asthma, rheumatism, or St. Vitus' dance?
Do you know of any hereditary disease to which you are liable, such as consumption or insanity?
Are your parents alive?
If dead, what was the cause of death?
Are you aware of any circumstances regarding your state of health which might interfere with the proper performance o your duties as a Teacher?
Are the answers above given, to the best of your knowledge, perfectly correct?

(Signature of Candidate)
(Address in full)

(Date)

(To be filled in and handed to the Medical Officer by the Candidate.

Teachers.—Certificate of Physical Ability.

MEMORANDUM for information of Medical Gentlemen signing certificates:—

Scrofula, fits, asthma, deafness, squinting, great imperfection of the sight or voice, any marked disfigurement or deformity of face, the loss of an eye from constitutional disease, the loss of an arm or leg, the permanent disability of either arm or leg, curvature of the spine, hereditary tendency to insanity, and *any constitutional infirmity of a disabling nature*, will be regarded as positive disqualifications for the office of Teacher.

Place
Date

Having duly examined a candidate for employment as a Teacher in the service of the Department of Public Instruction, I hereby certify that is not subject to any disease or infirmity likely to interfere with the effective performance of the duties pertaining to the office of Teacher.

NOTE.—The Doctor signing this Certificate should forward it direct to the Under Secretary, Department of Public Instruction, Sydney.

APPLICANT'S DECLARATION.

(Place)
(Date)

I,
an applicant for employment as Teacher of a Small School, do hereby declare that I am willing to accept a situation in any locality the Minister of Public Instruction may deem fit. I further declare that I am aware that I shall not be eligible for permanent employment in a School in or near Sydney until I have served for at least three years in a Country School; and that I cordially concur in this requirement.

(Signature of Applicant)

NOTICE

NOTICE TO TEACHER.

Department of Public Instruction, Sydney, 190 .

MEMORANDUM to the Teacher, Public School,

MALE CANDIDATES FOR SMALL COUNTRY SCHOOLS.

Mr. having been declared eligible for employment as Teacher of a small Country School, has been instructed to attend the school under your charge for a period of weeks from

It is requested that you will give him good sound instruction in the making out of Quarterly, Half-yearly, and Annual Returns, in the keeping of School Records, and the compilation of Lesson Documents, and in the practical work of Teaching.

At the end of Mr. attendance, you are desired to furnish to me a report in the form herewith supplied.

Chief Inspector.

Department of Public Instruction.

REPORT of the Teacher of the Public School at upon Mr. , Applicant for employment as Teacher of a small School.

1. Apparent Age
2. Personal Appearance and Address
3. Constitution.
4. Bodily Infirmities
5. Conduct
6. Attention to Instruction
7. Progress while attending the School under your charge
8. Teacher's general opinion of Applicant
   - I.—As to Information
   - II.—As to Intelligence
   - III.—As to Aptitude for Teaching
9. Period of attendance. From to

I certify that I have instructed Mr. in accordance with directions, and that he is fully competent to teach and discipline a class, to compile the necessary Lesson Documents, and to keep the prescribed School Records.

(Teacher's Signature)

Teacher's Classification by Examination.

Date

NOTE—(a) The Applicant should give a Certificate on the back hereof to the effect that he has been made fully acquainted with the documents specified. (b) You should be very particular in replying to 1, 2, 3, 4, and 5.

I hereby certify that I have been fully instructed as to the keeping of the various records, and in making out the Returns named :—Time Table, Programmes of Lessons, Class Roll, Daily Report Book, Admission Register, Lesson Register, Fee Return, Quarterly Return, Half-yearly Return, Annual Return, Salary Abstracts.

(Applicant's Signature)

Date

NOTICE TO APPLICANT.

Department of Public Instruction, Sydney,

Sir,

With reference to your application for appointment as Teacher of a small Country School, I am directed to acquaint you that the result of the examination which you underwent on the is not considered sufficiently satisfactory to warrant your employment.

Your testimonials are returned herewith.

I have the honor to be,
Sir,
Your most obedient Servant,
J. C. MAYNARD,
Under Secretary.

Mr.

CHAPTER XXX.

Pupil-Teacher Systems: United Kingdom.

[J. W. TURNER.]

Introductory.—The pupil-teacher system as a training scheme for primary school teachers prevails in England, Ireland, and Scotland. Side by side with this system Ireland and Scotland have also a *monitorial system.* In the United States of America, and in Canada, admission into a training college for positions in elementary schools does not take place earlier than the completion of the high-school course, viz., about 18 years of age.

English opinions concerning the pupil-teacher system.—The following English views of the pupil-teacher system seem to the Commissioners worth recording:—

At the 34th Annual Conference of the National Union of Teachers (an association of about 50,000 members), held during the Easter vacation, 1903, the President, Mr. Henry Coward, of Bristol, in an address, characterised as being an excellent one, both in matter and manner, and quite up to the standard set by able men who had preceded him in that important position, commented on the question of training teachers as follows:—"The supply and training of teachers is a difficult and complex question. The work of teaching is important enough to demand that the best intellects should be devoted to it; and how to select these, how to train them, and how to provide such a career for them as will compensate them for giving up their chances of success in other professions, in commercial or manufacturing pursuits, is a problem which both the State and the locality will do well to seriously set themselves to solve.

"While many educationists see grave difficulties and disadvantages in the pupil-teacher system, they have failed to find any adequate substitute for it; in fact, it has to continue—amended, under new conditions, with different conceptions of its aim and scope, perhaps,—but continue it must, in order to supply the large army of trained teachers necessary for our schools."

On training colleges the following observations were made:—

"What is being done in our training colleges? For several years the Board of Education has directly encouraged students to read for University degrees instead of taking the ordinary certificate examination; and, owing largely to the better preparation of our pupil-teachers, a large and increasing number of students each year have been able to take advantage of the teaching for a degree which many of the colleges have laid themselves out to provide. In fact, it was becoming something more than a dream that the training colleges would get closer and closer into touch with the Universities, and that at no distant date a University degree would be part of the ordinary outfit of a student when he left college."

The following impressions, written after an interview with Dr. Forsyth, head-master of the Central Higher Grade School, Leeds, will indicate the Commissioners' opinion as to his views:—

The Central Higher Grade School, Leeds, under Dr. Forsyth, ranks among the foremost of the Secondary State Schools of England. It has an enrolment of about 2,000 pupils, whose ages range between 8 and 18 years, 700 being over 14 years of age. Co-education exists in certain classes, for some reason not altgether clear, in the extreme lowest and highest grades. The head-master believes in co-education, and if left to himself would have boys and girls taught together in every class. Specialisation, more in classes than in individuals, takes place after pupils have completed the ordinary primary course. The higher work of the school is on a sound basis, and the entire equipment is excellent. Science, modern languages, drawing, commercial subjects, and preparing for the teaching profession, are the chief lines for special work, while English and mathematics are strong subjects in every class throughout the course. Dr. Forsyth did not give the impression that he approved of the pupil-teacher system. The fact that boys and girls remain at the school to the age of 17 and 18 years, and that some of them undergo a course of instruction to fit them for admission into a training college, without taking up a pupil-teacher course, points to an opposite conclusion.

A recently published work of considerable interest, viz., "The Making of Citizens," comments upon the question of pupil-teachers in the following terms:—"There can be no doubt that these figures mean (a tabulated statement showing an increase of adult teachers in the primary schools of England and a decrease of pupil-teachers) that the pupil-teacher system is slowly disappearing from the English schools, and that at present the deficiency of pupil-teachers is being filled by the appointment of adults, it is true, but absolutely unqualified adults. This is a very serious state of affairs, and is recognised as being so by every authority who has considered the subject. It is the employment of these unqualified people under Article 68 that is the despair of all true educators in England to-day. Too often, indeed, is the school made the dumping-ground of aspiring incompetence. That the pupil-teacher is disappearing is not to be regretted. The system is not even economical, much less efficient. School Boards are discovering that it is cheaper to staff their schools with qualified assistant-teachers than with pupil-teachers; other schools with less funds have to content themselves with unqualified adult teachers. The number of teachers entering the school with no experience has recently been increased by the Central Authority qualifying young people possessing University or other examination certificates as assistant-teachers."

The

The Rev. E. F. M. MacCarthy, M.A., chairman of the Birmingham School Board, in his address on "Thirty years of educational work in Birmingham," delivered 26th October, 1900, made the following pertinent remarks relative to the pupil-teacher system:—

No part of the Board's work has been more difficult and anxious than the task imposed upon it of providing recruits for its teaching staff by means of pupil-teachers. The first Board found the pupil-teacher system firmly established in the sphere of elementary education, and though individual members had strong feelings about the serious defects of the system, and directed the severest criticism against it, the Board has not been able to do more than ameliorate the conditions under which pupil-teachers do their work, and to reduce very considerably the extent to which they were employed generally in elementary schools when the Board first had schools of its own. In those days (1873) the Education Code permitted pupil-teachers to be as young as 13 years of age, and they might be engaged in schools for as much as six hours a day or thirty hours a week. The number of pupil-teachers allowed in a school was then four for every certificated teacher serving in it. The instruction of a pupil-teacher was given, as a rule, out of the above school-hours by the head teacher of the school. The Education Code of 1900 is many steps in advance of the Code of 1873. Under its regulations a pupil-teacher must be not less than 15 years of age, though he may be employed as a probationer from 13 years of age. During the probationary period he must not serve in school for more than thirteen hours, *i.e.*, half-time, but during pupil-teachership he may be required to serve for five hours in one day or twenty hours in one week. The number of pupil-teachers (including probationers) cannot now exceed three for the principal teacher and one for each certificated assistant teacher. The report of a Departmental Committee on the pupil-teacher system (1898), while acknowledging that the pupil-teacher system "has some merits as well as many defects," admits that "*its defects are so serious that they hope to see early measures taken by legislation and by administrative acts by the Education Department towards its ultimate complete reformation.*[1] The fruition of that hope is not accomplished, but is reserved for the years—and I sincerely trust the early years—of the twentieth century. The Birmingham Board has always been much in advance of the Code in its provisions for the training of pupil-teachers. Special training-classes were formed in 1883 and placed under a superintendent. All pupil-teachers were released from school on one half-day in each week, and they attended training-classes on two evenings a week, and on Saturday mornings, and were taught by the best qualified of the Board's head-teachers. Ten years later (1893), the Board decided to establish a half-time system for candidate pupil-teachers and first and second year pupil-teachers; so that they were serving in school for thirteen hours in the week, and the other thirteen hours were spent at the training-classes, while the evening classes for these teachers were discontinued. In the following year (1894), the Board resolved to extend the half-time system to the third-year pupil-teachers; and in 1897 it further resolved to complete the arrangement for half-time instruction all through the period of pupil-teachership by extending these advantages to the fourth-year pupil-teachers. The advantages of the Pupil-Teachers' Central School over the old system of individual instruction by their respective head-teachers were recognised by the Royal Commission on the Elementary Education Acts, 1888, and by a Departmental Committee in 1898, and are borne out by practical experience. Economy of labour, uniformity of teaching-standard, instruction by a specially selected staff, the possibility of greater elasticity of curriculum, the development of the social side of pupil-teachers' lives by intercourse with others of their own age, the improvement in the general tone and *morale* by the influence of the superintendent; all these advantages are in favour of the system, besides the fact that it affords much needed relief from the responsible duty of instructing their pupil-teachers after school hours, which weighed heavily under the old system upon the head-teachers of their schools.

The London School Board System.—The London School Board employs upwards of 3,000 pupil-teachers, and the course of instruction lasts five years. Applicants are not accepted under the age of 14 years. One year is spent as probationers, the second year as candidates, and three years as pupil-teachers, known as the first year, second year, and third year. Probationers are called upon to pass an entrance examination, which is conducted by the School Board. The certificates of the Intermediate County Council, the Junior Oxford or Cambridge Local, the Senior Oxford or Cambridge Local, and the Martriculation Examination of the University of London, are accepted in lieu of the entrance examination. These examinations are comparable to the University Junior Examination of this State. Applicants holding the above-mentioned University certificates get preference in regard to appointments, and receive privileges in the way of shortened courses of training. No appointments are made until the Board's Inspector has certified to the moral character and physical condition of the applicants; and so careful is the Board in this particular, that an officer is deputed to visit the homes of the applicants to see whether the surroundings are in every way likely to conduce to their physical and moral well-being. Probationers receive no salary. Successful probationers attend provisionally the pupil-teachers' centres for a short term on half-time until they are nominated for a school, when their time is divided between the centre and the day school. Probationers who have received satisfactory reports from the head teachers of the pupil-teachers' centres, and the head teachers of the day schools, during their year of probation, are required to sit at the examination for candidates of the Board of Education. Successful candidates receive the following salary, viz:—Males £13, females £7 16s. per annum. Their time is divided between the day school and the pupil-teacher centre. No further examinations are required from pupil-teachers until the completion of their third year, when an examination is held for "King's Scholarships," which admit to the training colleges. The advance from class to class, and the award of an increase of salary, depend on the general good conduct of the pupil-teachers. The cases of candidates and pupil-teachers who fail to maintain a satisfactory standard, as tested in the pupil-teacher centres and day schools, are specially considered by the School Management Committee; and when they are of opinion that the candidates or pupil-teachers are unfitted for the profession of a teacher, the necessary notices are given for the termination of their engagements. Pupil-teachers who fail to gain King's Scholarships remain on, as a rule, as ex-pupil-teachers, continue their studies, frequently at the evening classes, and qualify in time as untrained teachers with a low certificate. The rates of pay for pupil-teachers are:—First year, males £13, females, £7 16s.; second year, males £31, females £20; third year, males £36, females £20, per annum. Senior pupil-teachers—*i.e.*, those in the second and third years of apprenticeship—are considered as responsible teachers counting for twenty pupils. Juniors—*i.e.*, candidates and first year pupil-teachers—do not count on the staff, except as supplying the place of seniors when absent at the pupil-teachers' centres. The latter are engaged at the day school in learning school management under the general superintendence of the head teacher, in examining home lessons, and in preparing lessons in simple subjects to be given under the supervision of the head teacher or one of the assistants. Pupil-teachers sitting at the King's Scholarship examinations are allowed, at the discretion of the head teacher of the pupil-teacher centres, and under certain restrictions, to attend University Extension Lectures or Evening Classes for Science and Art subjects in which they do not receive instruction at the pupil-teacher centres. It is part of the duty of head teachers of day schools to instruct and to exercise the pupil-teachers, candidates, and probationers in the best methods of teaching and in school management. The academic training of the three grades is carried on at a pupil-teacher centre. There are thirteen of these centres under the London School Board—twelve are mixed schools, and one—Stepney—is for females only. There are two sessions,

[1] The *italics* are not in the original.

sessions, morning and afternoon, on ordinary school days, and a session on Saturday morning. Attendance, which is regulated by the Board, is for one session daily. One afternoon in the week, other than Saturday, is a half-holiday, and strict injunctions are issued to the effect that it must be kept as such. The Saturday session lasts from 9 to 12; all grades are released from work at 12 noon and at 4·30 p.m. on other days. Home lessons must not exceed two hours on any evening, or twelve hours in the week.

The Marylebone Pupil-teachers' School.—The Marylebone Pupil-teachers' School, Burghley-road, N.W., London, may be considered as typical of the pupil-teacher training system in London; and as the management of this particular school came under notice, a short description of its scheme of work is given. This is a school of males and females, the latter sex, however, greatly predominating. Boys in London are not eager to become pupil-teachers, as they can command far better salaries in other walks of life, and promotion elsewhere is also much more rapid. The better class of boys therefore do not take up the teaching profession. At an entrance examination of candidates for pupil-teachers, held recently at one of the centres, there were upwards of 100 girls and only two boys. The buildings at the Marylebone centre consist of two floors. On the first floor is the large general hall, used as a general assembly room, from which branch off eight class-rooms. The class-rooms are all well furnished, although the type of desk is neither very new nor equal to that seen in Switzerland and America. Upstairs are the Art room, Demonstration room, two Laboratories (Physics and Chemistry), and two class-rooms. The Demonstration room is a good one, and may be used for lantern lectures. Both laboratories are well equipped. There is no manual training at this centre for either boys or girls, neither is there any physical training for the boys, but for the girls there is a modified form of Swedish drill, practised more for their physical welfare than for teaching requirements. Drill has a small place in the curriculum of the London School Board. The great effort in this pupil-teacher centre is in the direction of mental culture, and all the teaching converges towards University examinations. All text books, &c., required are provided gratuitously, and an allowance of 2d. a day is made to each pupil-teacher living at a distance, to enable him or her to travel to a centre. The visit to Burghley-road centre took place a few days before the fixture of the London Matriculation Examination, and in connection with University examinations the following information was supplied by the Principal:—

33	candidates	had	entered	for the London Matriculation.
5	,,	,,	,,	Welsh ,,
3	,,	,,	,,	Intermediate B.Sc., London.
2	,,	,,	,,	B.A., London.

The Principal has eight permanent assistants and four visiting masters, and the attendance is about 350. The Principal himself takes Mathematics (Matriculation work) and The Art of Teaching (Theory). The first assistant, who is B.A., London, is responsible for English (Senior), Latin, French, Mathematics (Intermediate); the second assistant, also a B.A., London, takes Mathematics (First-year), English (Junior), Science. The Principal is a zealous advocate of the pupil-teacher system, and considers it the best training possible when head-masters give their young teachers good instruction in teaching methods. This opinion is shared by many of the leading masters of the London Board Schools, one of whom stated that in his experience a well-trained pupil-teacher is a better man in a school than a University graduate without practical training [1]. The pupil-teachers of Burghley-road were seen in the assembly hall during the period of recreation, and also in their class-rooms during the hours of study. Under both conditions they created a very favourable impression, and it was very evident that a good selection had been made in the first instance. They were without exception an intelligent, well-ordered, well-dressed body of young men and women. They were all of good physique, and some of the young ladies were tall, well set up, and very prepossessing in appearance. The young men did not compare so favourably in the matter of physique, but there was abundant evidence of good home-training. Great care had been taken to admit none but healthy candidates. The service is very popular with young women, and many of the better class of children from the higher grade Board Schools are among the list of applicants. The ages of those in attendance at the Burghley-road centre ranged from 14 to 18 years. The aim of every ambitious pupil-teacher in the pupil-teacher school is to gain a King's Scholarship on the completion of his or her course. This admits into one of the Training Colleges. The scholarship does not, however, cover the whole expense incurred in the Training Colleges. A small amount has to be paid by the parents of the successful scholarship-holders, and the Government grants a subsidy to the College for the balance. The London School Board has no Training Colleges in which the course commenced in the pupil-teacher centre may be completed. The unsuccessful competitors at the King's Scholarship examinations get ready employment as ex-pupil-teachers in the Board Schools. These are afforded opportunities for attending evening training classes instituted by the Board, and many succeed in obtaining lower-grade certificates. The School Board's responsibilities and liabilities in regard to their pupil-teachers cease with the completion of the term in the pupil-teacher centre. It is not part of its duty to find positions for these young teachers, although as a matter of fact employment is readily obtained by all.

The Birmingham School Board and its Pupil-teacher Centre.—The pupil-teachers' centre in Birmingham is attended by upwards of 400 girls. Boys evince no desire to take up the teaching profession, as their chances of success in life are much brighter in the business world. The supply of female pupil-teachers is large, and this is necessary to cope with the number of resignations. The average teaching-life of a Birmingham lady-teacher, after her term of pupil-teachership is through, is between six and seven years. The majority marry, and their services are then lost as teachers; for, by an unwritten law in Birmingham, when a lady-teacher marries, she resigns. The teaching of science is a strong point in the Birmingham Board-schools and the pupil-teachers' classes. The final examination, viz., the King's Scholarship, admits to the Day Training College, Birmingham, or to one of the residential colleges. The time-table of subjects, not including science, and the syllabus of studies are given.

The rates of pay for pupil-teachers employed in the Birmingham Board-schools are:—

Probationers ...	£ 8	per annum.	First year	...	£15	0	0 per annum.
Candidates ...	10	,,	Second year	...	17	10	0 ,,
			Third year	...	20	0	0 ,,

Syllabus

[1] He was, of course, referring to graduates of the United Kingdom.

Syllabus of Birmingham School Board Pupil-teachers' Centre.—The following is the programme of work of the pupil-teachers' centre of the Birmingham School Board:—

BIRMINGHAM SCHOOL BOARD—PUPIL-TEACHERS' CENTRAL CLASSES.

TIME-TABLE.

	Probationers.		*First Year.*		*Third Year.*	
	A.	B.	A.	B.	A.	B.
MONDAY—						
1.	French	English	Need. or English	Need. or Arith.	English	Music
2.	Arithmetic	French	Need. or Comp.	Need. or Comp.	Music	English
3.	Needlework	Reading	Reading	French	Reading	History
TUESDAY—						
1.	Scripture		Scripture		Scripture	
2.	English	Geography	Geography	English	French	Arithmetic
3.	Geography	Arithmetic	English or French	Geography	Mathematics	English
4.	History		Music		Latin	French
WEDNESDAY—						
1.	French	Reading	History	French	Need. or Study	Needlework.
2.	Reading	French	French	History	Need. or Study	Need. or Comp.
3.	Gymnasium		Mathematics	Arithmetic	Study	Geography
THURSDAY—						
1.	Geography	English	Geography	English	Mathematics	Arithmetic
2.	English	History	English	Geography	French	History
3.	History	Geography	Gymnasium		Latin	French
FRIDAY—						
1.	Arithmetic	Needlework	Latin	Arithmetic	Logic	English
2.	Reading	Arithmetic	History	Reading	History	Geography
3.	Music		Arithmetic	History	Gymnasium.	

	Candidates.			*Second Year.*	
	Preparatory.	A.	B.	Matriculation.	A.	B.
MONDAY—						
1.	Arithmetic	Gymnasium		Mathematics	Arithmetic	French
2.	Geography	Arithmetic	Geography	History	French	Geography
3.	French	Geography	French	Latin	Geography	Arithmetic
TUESDAY—						
1.	English	History	English		Gymnasium	
2.	Composition	French	Arithmetic	French	History	English
3.	Arithmetic	English	History	Latin	English	History
WEDNESDAY—						
1.	Geography	Music		French	Needlework or Mathematics	
2.	History	Arithmetic	Reading	English	Needlework or Mathematics	
3.	Needlework	Reading	Geography	Mathematics	Music	
THURSDAY—						
1.	Scripture	Scripture		Scripture		
2.	French	English	Arithmetic	French	Geography	
3.	Arithmetic	Geography	French	Mathematics	English	
4.	Reading	History	English	Latin	French	
FRIDAY—						
1.	History	Needlework or Composition		Mathematics	Reading	History
2.	English	Needlework or Composition		English	Arithmetic	French
3.	Reading	French	History	Latin	History	Reading

BIRMINGHAM SCHOOL BOARD PUPIL-TEACHERS' CENTRAL CLASSES.

SYLLABUS OF WORK.

Third Year.

Arithmetic.—Mathematics for Matriculation Syllabus. General Revision—Practice chiefly in stocks and shares. Profit and loss, difficult problems.

Algebra.—Factors—Equations (simple and simultaneous). Problems—Quadratics.

English.—(I) Outlines of History of English Literature (twelve great authors for Matriculation Examination). (II) History of English Language. (III.) Essay Writing.

History.—Outlines of English History from B.C. 55 to 1870, A.D.

Geography.—British Colonies—The world in general (according to Scholarship syllabus).

French.—"La Tour des Maures," by E. Daudet (set for Matriculation Examination) with Dictation, Composition, and revision of Grammar.

Latin.—Translation—Cæsar, Books IV and V. Grammar—Sonnenschein's Second Reader and Writer.

Needlework.—Patterns and specimens preparatory for Scholarship Examination.

Music.—Practical—As far as required for Intermediate Certificate. Theory Revision of work done in other years.

Reading and Scripture.

Second Year.

Arithmetic.—Area, cubical contents, metric system, interest, discount, percentages, stocks and shares. Miscellaneous problems.

Algebra.—Factors, Least Common Multiple, Highest Common Factor, Fractions. Simple equations—Problems based on simple equations. Simultaneous Equations.

English.—Two lessons of 45 minutes weekly; one fortnightly lesson. (I) Grammar—Parsing, Analysis of Sentences. (II) Writing of Essays. (III) Literature. The aim of these lessons is:—1. To give an interest in and a liking for English writing of the best kind. 2. To make the girls acquainted with the real works, and not merely to know about them.

Ballad Poetry.—"Robin Hood" Ballads, "Patient Griselda," "Chevy Chase," "Agincourt" (Drayton), "John Gilpin" (Cowper), "Lucy Gray," "We are Seven" (Wordsworth), "Ancient Mariner" (Coleridge), "Battle of Baltic" (Campbell), "Glenfinlas" (Scott), "Scots of Eskdale" (Scott), "Lochinvar" (Scott), "Macgregor's Gathering" (Scott), "The Outlaw" (Scott), "Rosabelle" (Scott), "Ivry" (Macaulay), "Charge of the Light Brigade" (Tennyson), "The Revenge" (Tennyson), "Defence of Lucknow" (Tennyson), "Incident in French Camp," "Ghent to Aix" (Browning), "East and West" (Kipling), "Earl Haldan's Daughter" (Kingsley).

Lyrical Poetry.—"Under the Greenwood Tree" (Shakespeare), "Blow, Blow, Thou Winter Wind" (Shakespeare), "Ariel's Songs" (Shakespeare), Fairies' Songs from "Midsummer Night's Dream" (Shakespeare), "Fear No More the Heat o' the Sun" (Shakespeare), "To Daffodils" (Herrick), "Night Piece to Julia" (Herrick), "Piping Down the Valleys Wide" (Blake), "When the Green Woods Laugh" (Blake), "Daffodils" (Wordsworth), "The Cuckoo" (Wordsworth), "Three Years She Grew" (Wordsworth), "The Lesser Celandine" (Wordsworth), "The Daisy" (Wordsworth), "Waken Lords and Ladies Gay" (Scott), "Coronach" (Scott), "Pibroch of Donnil Dhu" (Scott), "County Guy" (Scott), "Autumn" (Shelley), "Skylark" (Shelley), "Songs from the Princess" (Tennyson), "The Brook" (Tennyson), "Blow, Bugle Blow" ("Coming of Arthur") (Tennyson), "Break, Break, Break" (Tennyson), "Home Thoughts from Abroad" (Browning), "The Year's at the Spring" (Browning), "Love Among the Ruins" (Browning).

Shakespeare

Shakespeare (*a*) as a Dramatist, (*b*) as a Poet. Plays to be read :—"As You Like It," "Hamlet," "Henry V."
Reading.—Reading and learning passages from Tennyson and Laureate. Voice Production.
History.—Outlines from 1685–1815
Geography.—Australia, New Zealand, Polynesia, America. . Trade routes, river basins, sketch maps.
French.—(*a*) "Laurette" and "Seulette." (*b*) Spier's French Drill. (*c*) Dictation—Conversation and Translation founded on books given.
Latin.—Accidence. Declensions and Conjugations. Translation. First Latin Reader and Writer. Retranslation.
Needlework.—Garments and specimens showing stitches used on calico and flannel.
Scripture.—History of Jews from Moses to David.

First Year.

Arithmetic.—Interest—Simple and Compound. Averages. Percentages and their applications. Discount. Metric System.
English.—Parsing and Analysis. Paraphrasing. Syntax of all parts of Speech. Introduction to General Literature. Works of Tennyson, Longfellow. Writing of Essays.
Reading.—Voice production. General practice in sight reading. Memorising of poems chosen by students. Stories from "Earthly Paradise."
History.—From 1685-1760.
Geography.—Europe and Asia—chief countries in detail—river basins, sketch maps.
French.—(*a*) "Une aventure du célèbre Pierrot." "Histoire de la Mère Michel." (*b*) Spier's French Drill. (*c*) Dictation—Conversation and Translation founded on books given.
Needlework.—Small garment made. Calico, flannel, and print patches learnt. To cut out and fix in paper a woman's cooking apron.
Scripture.—Old Testament History.
Latin (beginners).—Declensions and Conjugations. First Latin Reader and Writer.

Candidates.

Arithmetic.—Prime Numbers, Factors. Least Common Multiple. Highest Common Factor. Vulgar and Decimal Fractions. Metric System. Areas. Miscellaneous problems.
English.—Analysis and Parsing. History of Language. Composition. Longfellow.
Reading.—(*a*) Scott's "Kenilworth." (*b*) Voice Exercises. (*c*) Gray's Elegy for Recitation.
History.—B.C. 55—A.D. 1603. Tudors in detail.
Geography.—(*a*) Preparatory for Government Examination. (*b*) General Geography of Europe and chief countries of Asia.
French.—Dent's School French Book. Grammar. Dictation and Composition.
Needlework.—Child's pinafore made. Specimen of darn in stocking web. To cut out and fix in paper a man's nightshirt and a child's nightgown.
Music.—Practical—Begin to prepare for Elementary Certificate. Theory—Structure of Common Scale. Some of its intervals and division of pulses and measures.
Scripture.—

Probationers.

Arithmetic.—Fractions—Vulgar and Decimal. Ratio and Proportion. Bills of Parcels. Practice.
English.—Analysis and Parsing. Grammar of Nouns, Pronouns, Verbs, Adjectives.
Reading.—Voice Production. General practice—memorising of poems—"Young Lochinvar," "Rosabelle," "Earl Haldan's Daughter," "A World of Leafage" (Henley), and others chosen by students.
History.—General outlines from Roman Occupation of Britain.
Geography.—Commercial Geography based on Lyle's "Man on the Earth" and "Man and his Markets." Detailed Geography of British Isles. Outlines of the World.
French.—Reading, Conversation, Dictation—Grammar arising therefrom.
Needlework.—Practice in easy stitches. Making-up of bodices.
Music.—Practical—Begin to prepare for Elementary Certificate. Theory—Structure of Common Scale. Some intervals and divisions of pulses and measures.
Scripture.—Story of the Jews from the Patriarchs to David and Solomon.

The Manchester School Board and its Pupil-teacher Centres.—Manchester has two pupil-teacher centres, with an aggregate attendance of about 800. Pending the erection of entirely new buildings, the Robey-street Centre, attended by pupil-teachers occupied in the northern division of the city, was being conducted at the time of inspection in temporary premises near the Central School. There were present 380 girls and 76 boys. The better class of boys do not enter the pupil-teacher service, the inducements outside of higher salaries and greater prospects of promotion taking them in other directions. The pupil-teachers receive the whole of their ordinary instruction at the centres, with the exception that the principal teachers of the day-schools are held responsible for their instruction in the principles and practice of school management. An examination is held each year by the Board's Inspector. Religious instruction, which was at one time given by the principal teachers of the day-schools, is now taken up at the pupil-teacher centres. Juniors are required to attend six half-days and Saturday mornings; seniors, four half-days and Saturday mornings.

By arrangement with the Manchester City Council, pupil-teachers are enabled to attend the drawing classes at the Municipal School of Art on Saturday mornings. Courses of lectures to pupil-teachers in their last year are given in connection with the University Extension Committee of the Victoria University. On the conclusion of their fourth year of service pupil-teachers sit for their final examination—the King's Scholarship—and those successful enter one of the training colleges, Owen College, Manchester, being the one usually selected. Speaking on the question of the employment of pupil-teachers, there is an opinion among some educationists in Manchester that the status of pupil-teachers is not sufficiently recognised, and that they do not receive sufficient advice and encouragement from the principal teachers of the day-schools. Pupil-teachers in the Manchester Board Schools are paid on the following scale :—

	Boys.	Girls.
Probationers, per annum	£12 to £15	£6
Candidates, „	£20	£16
First year, „	£22 10s.	£12
Second year, „	£25	£16
Third year, „	£27 10s.	£18

The Leeds School Board and its Pupil-teacher Centre.—Leeds has one pupil-teacher centre, with an attendance of 600, the great majority of whom are girls. The buildings are quite new, and are of the most modern design. From a large central hall, well-furnished class-rooms radiate. The structure has three floors. The science and art rooms are splendidly equipped. There is accommodation for 712. In the construction of these buildings the Board has given most careful attention to ventilation, heating,

heating, and lighting. The Board has adopted the system of mechanical ventilation by propulsion, after having tested it in two of their day-schools. Fresh, warm, filtered air is propelled through the buildings by means of fans driven by gas-engines. The foul air is extracted by means of shafts communicating with the large roof ventilators. The lighting of the large central halls and the spacious well-fitted class-rooms is from the left-hand side. The area of the site in square yards is 2,455; the cost of the site, £18,600; buildings and fittings, £31,200; total cost, £49,800. With the exception of practical school management, the pupil-teachers receive their instruction chiefly at the centre, where they attend on alternate half-days. On Saturday mornings pupil-teachers' classes are held at the Central Higher Grade School adjoining for instruction in Science, Drawing, and French. The Board has also arranged for the senior pupil-teachers to attend courses of lectures in English History and English Literature in connection with the Victoria University. In the Tenth Triennial Report of the Board the Chairman points out the immediate results of these advantages in the improved status of the pupil-teachers, as shown both at the Government examinations and the King's Scholarship examination, and, later on, in the improved condition of the whole teaching body. He says:—"Seeing that majority of the pupil-teachers, on the completion of their apprenticeship, either remain in the Board's service or proceed to a training college, and return as certificated assistants, the Board has felt the importance of giving its pupil-teachers a liberal education, and thus securing a well-educated body of teachers."

It is worthy of note that the Board in appointing assistant teachers gives the preference, wherever possible, to those who have been trained in the service of the Board; and, in promoting teachers to head-teacherships, its own teachers are exclusively selected. The Board's duties, so far as the instruction of teachers is concerned, cease at the end of the pupil-teachers' apprenticeship; but, in order to do the best possible for their teachers, they provide training classes for those who, for various reasons, are unable to enter a training college. These are held in the evening at the pupil-teacher centre. Those attending receive instruction which enables them to qualify for the certificate examination.

The Pupil-teacher System in Ireland.—The experience of the system was gained in visiting the model schools of Belfast and Dublin. The number of model schools in operation in Ireland, according to the latest returns obtainable, 1899-1900, was thirty, and in these establishments 203 pupil-teachers (111 boys and ninety-two girls) were employed. In some of the model schools, male pupil-teachers are boarded and lodged at the public expense; this is the case in the Belfast model school. In others, they receive an allowance for maintenance. Female pupil-teachers are always non-resident. In addition to the employment of pupil-teachers, a system of *paid monitors* exists, their salaries being much lower than those of the pupil-teachers. These monitors, drawn from the senior boys and girls, are accepted as candidates for employment when they are 13 or 14 years old, and undergo a course of training extending over five years. The candidates, who remain at school until they are 16 years of age and then apply for employment, receive a course of training extending over two years. Neither Belfast nor Dublin has a pupil-teacher centre. The training of both classes in the ordinary subjects, as well as in practical school-management, is in the hands of the head-teachers of the schools; these devote one hour and a half daily, outside the regular school-hours, to this duty. As far as could be ascertained, it appears that pupil-teachers are principally employed in the model schools, and monitors are sent to the ordinary day-schools. The plan of practical training, as carried out for the pupil-teachers in the Belfast model school, came under the Commissioners' notice. There were four pupil-teachers at work under the direction of the head-teacher. The main room where they were engaged is large, and supplied with two long rows of desks, arranged so that there is a wide passage between the rows, and ample space at each side. In this space the four pupil-teachers, two on each side, were occupied in teaching sections of boys who stood round them in a semi-circle. The pupil-teachers were seated on a high stool placed so that every boy was well under observation.

Monitors and Pupil-teachers' Programmes, &c.—The following Monitors' Programme, Revised Programme of Examinations, etc., will give a sufficient indication of the details of the system in Ireland:—

NATIONAL EDUCATION (IRELAND).

MONITORS' PROGRAMME.

First Year.

The ordinary Programme of the Standard in which the Monitor is enrolled as a pupil and, in addition, the following special subjects:—

Literature.—To recite correctly, and with taste, 100 lines of poetry selected from the poems of Goldsmith and Wordsworth, and to be able to write a short sketch of the life of each of these poets, with dates.

Grammar.—Orthography, and Etymology of nouns, adjectives, and pronouns.

Geography.—A good knowledge of the Geography of Ireland. The position of the three most important towns in each county to be indicated on a blank map, as well as other important features.

Methods of Teaching.—(*a*) Joyce's Handbook, "Reminders for Monitors," and "How to teach First Lesson Book." (*b*) To teach to a small class (six to ten) of First Standard pupils any two of the English and Arithmetic lessons of the class for the day appointed and notified for the examination.

Geometry (Males).—Definitions, and first ten propositions of First Book of Euclid.

Algebra (Males).—Definitions, notation, and addition. Calculation of the values of expressions when given the values of the unknown quantities.

N.B.—The examination in Vocal Music and in Drawing shall be conducted each year according to the revised Programme for the standard to which the Monitor belongs as a pupil; and, in the case of Vocal Music, according to the system (Tonic Sol-fa or Staff Notation) taught in the School.

Second Year.

The ordinary Programme of the Standard in which the Monitor is enrolled as a pupil and, in addition, the following special subjects:—

Literature.—To recite correctly, and with taste, 150 lines of poetry selected from Pope, Gray, and Moore, and to be able to write a short sketch of the life of each of these poets, with dates.

Grammar.—Orthography and Etymology.

Geography.—Great Britain.

Methods of Teaching.—(*a*) Joyce's Handbook, as before, with "Discipline, Order, Cleanliness," and "How to teach Second and Succeeding Lesson Books." (*b*) To teach to a small class (six to ten) of Second Standard pupils any two of the English and Arithmetic lessons of the class for the day appointed and notified for the examination.

Geometry (Males).—To the thirty-second proposition of the First Book of Euclid; Mensuration—rectilinear figures of three sides.

Algebra (Males).—As before, with subtraction and multiplication.

For Music and Drawing, see note to Course for First Year.

Third

Third Year.

The ordinary Programme of the Sixth Standard and, in addition, the following special subjects :—

Literature.—To recite correctly, and with taste, 150 lines selected from the works of Scott, Longfellow, and Tennyson, and to be able to write a short sketch of the life of each of these authors, with dates.
Grammar.—As before, with Syntax.
Geography.—The British Possessions.
Methods of Teaching.—(*a*) Joyce's Handbook, as before, with "How to Teach Writing, Spelling, Writing from Dictation, and Arithmetic." (*b*) To teach to a small class (six to ten) of Third Standard pupils any two of the English and Arithmetic subjects of the class for the day appointed and notified for the examination.
Geometry (Males).—The First Book of Euclid ; Mensuration—rectilinear figures of three or four sides.
Algebra (Males).—As before, with division, and easy questions in simple equations.
For Music and Drawing, see note to Course for First Year.

Fourth Year.

The ordinary Programme of the Sixth Standard and, in addition, the following special subjects :—

Literature.—To recite correctly, and with taste and expression, 150 lines selected from the writings of Shakespeare, Milton, and Macaulay ; and to be able to write a short sketch of the life of each of these authors, with dates.
Grammar.—As before, with application to the correction of faulty sentences.
Geography.—(*a*) The form, motions, and magnitude of the earth. (*b*) The Geography and map of Europe.
Methods of Teaching.—(*a*) Joyce's Handbook, as before, with "English Grammar and Composition, and Geography." (*b*) To submit to Inspector on the day of examination carefully prepared notes of lessons for Fourth Standard in three different subjects, and to teach any one of those selected by Inspector.
Geometry (Males).—As before. The definitions and first eight propositions of the Second Book of Euclid ; Mensuration—rectilinear figures and the circle.
Algebra (Males).—Factorising, fractions, and simple equations.
For Music and Drawing, see note to Course for First Year.
Book-keeping.—Cash and personal accounts.
History.—A knowledge of the important facts, with dates, of English and Irish History, directly connected with the following :—(1) The Roman Invasion of Britain ; (2) King Alfred ; (3) The Norman Conquest ; (4) Henry II ; (5) The Great Charter (Magna Charta) ; (6) Origin of the English Parliament ; (7) The early English Colonies ; (8) The Brehon Laws ; (9) Learning in Ancient Christian Ireland ; (10) The Statute of Kilkenny ; (11) Poyning's Law ; (12) The "Plantations" in Ireland.

Fifth Year.

At Easter, in their Fifth Year, Monitors will be examined in Column 1 of the Revised Programme.

Revised Programme of Examinations (Column I) for Monitors and Pupil-teachers at the end of their Periods of Service, and for Candidates for Admission to Training Colleges, 1903.

Notes as to Examinations of Monitors, Pupil-teachers, and Candidates for Entrance to Training Colleges (Column I).

1. The Examinations in Column 1 will be held at Easter.

2. Monitors and Pupil-teachers, on completing their periods of service, and having passed the obligatory portion of the examination in Column 1 of revised Programme, in 1903, will be eligible for appointment as Assistants in National Schools.

3. Candidates for entrance to a Training College will be examined in all the subjects of Column 1. Their position on the Candidates' List, prepared for the Training Colleges, will be determined solely by the result of examination. Such candidates as are certificated National Teachers are eligible for admission to a course of training without undergoing the examination. University graduates are eligible for a one year's course of training without undergoing examination.

4. Passing in any particular subject means obtaining at least 20 per cent of the marks assigned to it.

5. Passing the examination means obtaining at least 50 per cent. of the total possible marks without failure in any obligatory subject.

6. All subjects mentioned in this Programme are obligatory, except where the contrary is indicated in the Programme or foot-notes.

7. Failure in one, or even in two, of the obligatory subjects (if the total percentage reaches 50) will not necessarily disqualify a candidate ; but failure in three or more will disqualify a candidate.

Revised Programme of Examinations (Column I), 1903.

Subject.	Marks.	
English—		
Reading	80	To read with fluency, correctness, and intelligence, an ordinary passage in English prose or verse, with explanation of the ordinary words and phrases in the passage read. To recite a passage of 50 lines of suitable poetry.
Writing[1]	40	To write a neat and legible hand. To write suitable head-lines in large and small hand.
Spelling and Punctuation	40	To write correctly from dictation a passage selected for the purpose.
Grammar	60	To analyse easy, simple, and compound sentences. To be acquainted with Etymology and Syntax, and with the principal prefixes and terminations found in English words. To parse sentences in prose and verse.
English Literature[2]	80	(*a*) MacMillan's "Advanced Reader," beginning with Chap. III. "The New or Mixed Language." Attention to be mainly directed to a study of the following authors, and of the selections from them given in Macmillan's "Advanced Reader" :—Chaucer, Shakespeare, Bacon, Milton, Dryden, Defoe, Swift, Addison, Pope, Gray, Johnson, Goldsmith, Burke, Burns, Wordsworth, Scott, Moore, Byron, Macauley, Tennyson. (*b*) Goldsmith's Traveller.
Composition[3]	60	The following to be read for Composition :—Lamb's Tales from Shakespeare, viz., King Lear, Macbeth, Hamlet, Merchant of Venice, As You Like It.
Geography.....	70	Elementary General Geography (Political and Descriptive). Mathematical Geography. Form, size, and motions of the earth. To fill in an outline map of Ireland, showing the principal cities, mountains and rivers.
Arithmetic and Mensuration.....	100	Simple and Compound Rules, Measures and Multiples, Vulgar and Decimal Fractions, the Metric System, Proportion (Simple and Compound), with a knowledge of the "unit method," Practice, Simple Interest, Discount, Stocks, Square Root. Reasons of the different Rules. Mensuration of Rectilineal Figures. (Difficult problems will not be given.)
Algebra (Males)	80	Elementary Rules, G.C.M., L.C.M., Fractions, Extraction of Square Root, Simple Equations of one or two unknown quantities, and problems leading to them. Simple Factors and easy Quadratic Equations.

Geometry

[1] Penmanship will be also judged from the exercises of the candidate generally.
[2] A minute knowledge will be expected of the text of the prescribed work, but no questions will be set requiring a knowledge of notes to the text. [3] The subject or the treatment of the Composition will be suggested by the book prescribed, but no papers of questions will be set.

Subject.	Marks.	
Geometry (Males)	[1]80	Euclid, Books I and II, with easy deductions from the Propositions.
Book-keeping	50	Cash, Personal, and Goods Accounts.
Theory of Method	100	To be acquainted with Revised Programme for Schools; Method of teaching the ordinary school subjects; Methods of Infant-school teaching and discipline, based on Kindergarten principles. Notes of lessons.
Practice of Teaching, &c.[2] (Examination will be oral.)	100	(*a*) To give a Test Lesson in Inspector's presence. (*b*) Knowledge of the method of keeping the Report Book, Roll Book, and School Register.
History	50	General Outline of History of Great Britain and Ireland from 827 to 1509.
Drawing	60	(*a*) Freehand. (*b*) Easy Mechanical:—Construction of rectilineal figures from given sides; the bisection of lines and angles; the construction of rectilineal figures for given sides and angles; the construction of plain scales; the use of scales in pattern drawing.
Needlework (Females)[3]	100	Sewing (40)—Hemming, Running, Top-sewing, Stitching, Button-holes, Sewing on of Gathers, Patching. Knitting (20)—Knitting of Socks, Darning, Cutting-out (40)—Boy's shirt, girl's pinafore, girl's chemise.
Domestic Economy and Hygiene (Females).	60	Ventilation; Digestion; the Vital Organs; Cleanliness; Clothing; Health and Sickness; Nursing the Sick; Household Work; Earning and Saving; Social and Moral Life.
Vocal Music (Theory)	25	Staff Notation—Treble Stave; Major Scales and Key Signatures; Diatonic Intervals; Simple Time Signatures; Transcription from one Time to another; Easy Transposition; Musical Terms. Or Tonic Sol-Fa.—The Common Scale, its Chordal Structure; Mental Effects; Diatonic Intervals; Pitch of Keys; Two, Three, and Four-pulse Measures; Simple Time Names; Musical Terms.
Vocal Music (Practical Test)	25	To Sol-fa from the Examiner's pointing on the Modulator simple passages without transition; to sing an easy Sight Test from the Tonic Sol-fa Notation or from the Staff Notation.
Manual Instruction[4]	50	Course as in Revised Programme for National Schools, page 13, up to and including Third Standard.
Elementary Science and Object Lessons.	100	Any one of the Alternative Courses as in Revised Programme for National Schools. Questions will be set to test the ability of candidates to prepare and treat Object Lessons, having in view the purposes for which such lessons are given. Only the most familiar subjects and phenomena of every day experience will be comprised in such questions.
Physical Drill		All Candidates will be expected to give evidence of having received effective training in Physical drill.

A. R. HAMILTON,
P. E. LEMASS,
Secretaries.

National Education Department,
Dublin, May, 1902.

The Pupil-teacher System in Scotland.—Pupil-teachers are selected from monitors or elder pupils who have remained on in school, who have shown aptitude for teaching, and who have received special instruction to fit them for the office. They are appointed to serve in a day-school on the following conditions:—

That the school is under the charge of a certificated teacher.

That the premises and apparatus are suitable.

That the Inspector reports the school to be efficient in respect of organisation, discipline, and instruction.

That they are under the superintendence of the principal teacher.

That suitable arrangements are made for their instruction, either in central classes or otherwise. (In Edinburgh there is no pupil-teacher centre; the Head-master in each school is responsible for the instruction of his pupil-teachers. There is a Science Class in Bruntsfield School for the instruction of the pupil-teachers in Physiography. The class is conducted by the two Science Masters connected with the higher grade schools of the city.)

That at the date of their engagement they are not less than 14 years (completed) of age.

That they have obtained a certificate of merit or have the higher qualifications for engagement mentioned in Schedule I. See page 97.

That the engagement, as a rule, should be for two or for four years. (Candidates, not less than 16 years of age, possessing the higher qualifications, may be engaged for a period of two years.)

That they must be of the same sex as the certificated teacher under whom they serve; but in a mixed school female pupil-teachers may serve under a master, and may receive instruction from him out of school hours, on condition that some respectable woman, approved by the managers, be invariably present during the whole time that such instruction is given.

That they be presented for examination at such time and place as may be fixed. (In addition to the preliminary examination, pupil-teachers in Scotland are required to pass two examinations only during their engagement—one at the end of their second year, and the King's Scholarship Examination at the end of the fourth year. Under special sanction the latter examination may be taken at the end of the third year, and the engagement shortened accordingly. The Inspector, at his annual visit to a school, is empowered to examine all pupil-teachers of the third year or under in reading, spelling, recitation, music, drawing, teaching, and to report upon the sewing of the female pupil-teachers. The possession of Leaving Certificate of a certain degree of merit exempts pupil-teachers from examination at the end of the second year except in the subjects mentioned above. A pupil-teacher, having obtained a high pass at the Leaving Certificate Examination, or having passed the preliminary examination in any of the Scottish Universities, and having gained a satisfactory report in the ordinary subjects, may be reckoned as having passed the King's Scholarship Examination in the first class, and is therefore eligible for admission into a training college). Article 70. That

[1] Three-fifths of the marks will be given for knowledge of the propositions alone; two-fifths of the marks for the deductions. [2] Candidates for entrance to a Training College who are not Monitors or Pupil-teachers will not be examined under this head. The practical test will be applied to Monitors and Pupil-teachers, and to ordinary Teachers, at the Inspection next preceding the Examination which they are to attend. [3] In the case of Needlework the required percentage of marks for passing must be obtained in each of the three sections, Sewing, Knitting, and Cutting-out. [4] It is advisable that the notes, drawings, and sketches taken at each lesson should be preserved for future reference and inspection.

That they produce each year such certificates of health, character, and conduct, as are specified in Schedule I.

That the Managers of School Boards enter into an agreement in the terms of the memorandum in the Second Schedule.

That not more than two pupil-teachers, three under some conditions, are engaged in any Division of the school for every certificated teacher serving in that Division.

That two stipendiary monitors are allowed—

(*a*) In place of a third pupil-teacher.

(*b*) If less than three pupil-teachers be required, to fill for two years the place of one of them.

That stipendiary monitors must—

(*a*) Be not less than 13 years of age at the date of their appointment;

(*b*) Must be possessed of a Certificate of Merit, or in its absence, a special recommendation from the Inspector;

(*c*) Be paid a stipend fixed by the Managers of the School Board;

(*d*) Assist for not more than three hours each day in the school, receiving during the rest of the school hours special instruction, either by themselves or in one of the higher classes of the school;

At the close of their engagement, pupil-teachers are perfectly free in the choice of employment. If they wish to continue in the work of education they may—

(*a*) Become assistants (not qualified) in schools.

(*b*) Or be provisionally certificated for immediate service in charge of small schools.

(*c*) Or be recognised as King's students.

(*d*) Or be admitted into a training college.

Details of Scotch System.—The following schedules, &c., will show how the Scotch system is worked out in detail:—

SCOTCH CODE (1902).—FIRST SCHEDULE.—CERTIFICATES AND CURRICULUM OF PUPIL-TEACHERS PRIOR TO AND DURING THEIR ENGAGEMENT.

	1.[1] Health.	2. Character and Conduct.	3. Reading and Repetition
Preliminary ...	Certificate from medical practitioner in a form prescribed by the Department.	A certificate from Managers that the moral character of the candidates and of their homes justifies an expectation that the instruction and training of the school will be seconded by their own efforts and the example of their parents.	Candidates must have obtained a Merit Certificate, or have the qualifications for engagement mentioned in the second paragraph of Article 70 (*b*).—viz., Inspector's recommendation.
1st Year.....	Certificate from Managers that pupil-teacher has not suffered any failure of health likely to incapacitate for profession of teacher.	1. Certificate of good conduct from the Managers. 2. Certificate of punctuality, diligence, obedience, and attention to their duties, from the master or mistress.	To read with fluency and ease, and to repeat fifty lines of poetry, with just expression and knowledge of the meaning.
2nd Year	Same as for first year, together with a certificate from a medical practitioner in a form prescribed by the Department.	Same as above.	To read as above; and to repeat forty consecutive lines of prose, with knowledge of meanings and allusions.
3rd Year.....	Same as for first year.	Same as above.	To read as above; and to repeat 100 lines of poetry, with knowledge of meanings and allusions.
4th Year. (King's Scholarship Examination, Article 92.)	Same certificates as in previous years. Article 92 refers to the qualifications for admission into Training Colleges in terms of Article 70.		

[1] Scrofula, fits, asthma, deafness, great imperfections of the sight or voice, the loss of an eye from constitutional disease, or the loss of an arm or leg, or the permanent disability of either arm or leg, curvature of the spine, hereditary tendency to insanity, or any constitutional infirmity of a disabling nature, is a positive disqualification in candidates for the office of pupil-teacher.

FIRST SCHEDULE—*continued.*

	4. English Grammar and Composition.	5. Arithmetic and Mathematics.	
Preliminary ...	Candidates must have obtained a Merit Certificate, or have the qualifications for engagement mentioned in the second paragraph of Article 70 (*b*).		
		Boys.	*Girls.*
1st Year.....	Grammar, Parsing, Analysis, Etymology, and to write a short essay.	Proportion, Fractions, Interest, Averages, Percentages, and Stocks.	Proportion and Fractions.
2nd Year	More advanced Grammar and Composition.	Arithmetic generally; Euclid, Book I, with very simple deductions; Algebra, to Simple Equations inclusive.[1]	Arithmetic generally.
3rd Year.....	Recapitulation of the preceding exercises; to know something of the sources and growth of the English language and literature, and to write an original composition.	Arithmetic generally; Euclid, Books I, II, III, with simple deductions; Mensuration of Triangles and Parallelograms; Algebra, to Quadratic Equations, inclusive.[2]	Arithmetic generally; Algebra, to Simple Equations, inclusive.[1]
4th Year. (King's Scholarship Examination, Article 92.)	Same certificates as in previous years.		

[1] Addition, Subtraction, Multiplication, Division, Highest Common Factor, Lowest Common Multiple, Fractions, Square Root, and Simple Equations of one unknown quantity, with easy problems.

[2] The same as for the previous year, and Cube Root, Simultaneous Equations of the first degree of two unknown quantities and Quadratic Equations involving one unknown quantity with easy problems.

FIRST SCHEDULE—*continued.*

	6. Geography.	History.	8. Teaching.
Preliminary ...	Candidates must have obtained a Merit Certificate, or have the qualifications for engagement mentioned in the second paragraph of Article 70 (*b*).	....	.....
1st Year.....	The British Isles, Australia, and British North America. Elements of Physical Geography. (Maps to be drawn in this and the following years.)	Outlines of British History, from Julius Cæsar to the accession of the Tudors.	To conduct a class in Reading or Writing.
2nd Year	Europe and British India; latitude and longitude; climate and productions of the British Possessions.	From 1485 to 1688, with special reference to Scottish History.	To give an Object Lesson, or conduct a class in Reading, Writing, or Mental Arithmetic, and to answer questions on Method.
3rd Year.....	Geography of the world generally, with special reference to British Isles and British Possessions. More advanced Physical Geography.	From 1688 to the present time.	To conduct a class in Grammar or Geography (in an infant school, on Form, Colour, Number, or some familiar object), to prepare notes of a lesson, and to answer questions as above.
4th Year. (King's Scholarship Examination, Article 92.)			

FIRST SCHEDULE—*continued.*

	9.[1] Music.	10. Languages.	11. Drawing.
1st Year.....	Staff Notation. Notes, their shape and relative value; the treble and bass staves; the scales of C, G, and F major; intervals found in the major scale; minims, crotchets, and equivalent rests: $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$, $\frac{2}{2}$, $\frac{3}{2}$, $\frac{4}{2}$ time. Tonic Sol-fa Notation. The common major scale, its structure and intervals; the standard scale of pitch; mental effects, and how they are modified; accent; two, three, and four pulse measure; whole pulse notes, and continuations, and rests of the same value.	The examination of pupil-teachers in languages will be conducted according to the following course:—The 1st and 2nd years' study laid down in Appendix No. 6. (Language Course.)	All pupil-teachers must receive instructions in Drawing, according to a course submitted to, and approved by, the Scotch Education Department. Marks will be awarded at the King's Scholarship Examination to candidates who have satisfactorily completed a three years' course of instruction at one of the approved courses.
2nd Year	Staff Notation. All the major scales and signatures; dotted notes; tied notes; semiquavers, triplets, $\frac{3}{8}$, $\frac{6}{8}$, and $\frac{9}{8}$ time. Tonic Sol-fa Notation. First removes of key; bridge notes; six and nine pulse measure; quarter pulse notes and rests; thirds of a pulse.	The 3rd year of study laid down in Appendix No. 6.	
3rd Year.....	Staff Notation. Various forms of the minor scale; the scales and signatures of A minor, C minor, D minor, E minor, and G minor; intervals found in the minor scale; easy transposition; construction of tests for schools; common musical terms. Tonic Sol-fa Notation. The minor scale and the intervals found in it; names of chromatic notes; relative pitch of keys; construction of tests for schools; common musical terms. N.B.—Candidates may work the paper in either Notation, but not in both Notations.	More difficult text-book, composition, and grammar, with knowledge of more advanced reading-book, and greater conversational facility (in modern languages), and Cæsar, Gallic War, Books II and III (in Latin), Xenophon, Anabasis, Books II and III (in Greek).	
4th Year. (King's Scholarship Examination, Article 92.)	.....		

[1] Pupil-teachers will be tested by His Majesty's Inspector at one of his visits to the school as to their practical skil in music, and marks will be allowed therefor. Pupil-teachers will be required to perform individually tests in time, tune &c., such as are set to be performed by the highest division of the school.

Pupil-teachers may be examined at the end of any year in subjects prescribed for preceding years in Columns 4, 5 6, 7, and 9 of this Schedule.

Female pupil-teachers, before engagement, must satisfy the Inspector that they possess reasonable competency as sempstresses; and, at the annual inspection, must produce certified specimens of plain needlework. They will be expected, at the end of each year, to perform an exercise in needlework.

Note.—The original note-books and exercise-books used by pupil-teachers in connection with their special instruction along with the marked papers of any examination held by the teacher in any subject of the pupil-teachers' course for the year should be preserved, and will be called for by His Majesty's Inspector on the occasion of any visit to the school or central class at which the pupil-teachers are instructed. Such examination should be held at least quarterly under the supervision of the Managers, and the results should be noted in the log-book.

PUPIL-TEACHERS (GIRLS).

First Year.

1. A woman's chemise or a man's nightshirt, cut out, tacked together, and partly made in every detail.
2. Gusset making.
3. A reduced and an enlarged pattern of the garment selected for the year's work (paper or material); measurements to be stated.

Second Year.

1. A child's nightgown or a girl's overall, cut out, tacked together, and partly made in every detail.
2. Patching in calico, print, and flannel.
3. A woman's stocking or a knitted sampler showing the intakes at the back of a stocking, the turning of a heel, and the decreasings and finishing-off of a toe.

Third Year.

1. A tucked flannel petticoat or a child's pair of drawers, cut out, tacked together, and partly made in every detail.
2. Darning on coarse linen (diagonal cut) and on woollen material (hedge-tear or three-cornered darn).
3. Cutting out in paper the flat pattern of a small night-dress (the folding or the measurement system may be followed).

Fourth Year.

(Preparatory to King's Scholarship Examination.)

1. A sampler in calico, showing all the stitches required in the making and mending of calico garments.
2. A sampler in flannel, showing all the stitches required in the making and mending of flannel garments.
3. Paper patterns cut out by proportion or by measurement of a chemise, and pair of drawers, and a petticoat.

Notes.

1. In all cases the specimen garments and patterns must be done without assistance and must be presented to His Majesty's Inspector as they left the worker's hands. All garments must have been cut out by the makers.
2. Only one of the two garments mentioned in paragraph 1 (first, second, and third year), is to be made up by the pupil-teacher, but the measurements and manner of making up the other garments must be learnt by her.
3. Whether a child's garment or the pattern of a child's garment is made, the age of the child for whom the garment is intended should be stated.
4. The garments should be of plain simple pattern showing intelligence and good workmanship, but without elaborate detail.

Pupil-teachers.

On the day of Annual Examination, an exercise may be given testing the pupil-teacher's knowledge of the needlework of their year, in accordance with the requirements of the Schedule.

The materials required for these exercises are as follows :—

First Year.—One piece of calico 9 inches square. One linen button (unpierced). Suitable needles and sewing cotton. One sheet of lined paper.

Second Year.—One piece of calico 9 inches square. One piece of print 6 inches square. One piece of flannel 6 inches square. One linen button (unpierced). Suitable needles and sewing cotton. Four knitting pins and knitting cotton. One sheet of lined paper.

Third Year.—One piece of calico 9 inches square. One piece of coarse linen 4 inches square. One piece of flannel 6 inches square. One piece of flannel binding ¼ yard. One piece of tape 2½ inches long. Suitable darning and sewing needles and cotton. One sheet of lined paper.

CHAPTER XXXI.

CHAPTER XXXI.

Some English Opinions on the Pupil-teacher System.

[G. H. KNIBBS.]

1. *Introductory.*—During their tour, the Commissioners endeavoured to ascertain whether in any country adhering to the pupil-teacher system, persons holding responsible positions and having also personal experience of its system of education, through the necessary linguistic knowledge and sojourn in any country of Europe, still shewed preferences for their own (*i.e.*, the pupil-teacher) system. The condition indicated gives the qualification to judge, so far as it is not overcome by prejudice. *The Commissioners, however, could meet no one, who having in this way really understood the continental systems, yet deliberately preferred our form of the pupil-teacher system.* It would of course be unwise to affirm that such persons do not exist; and it has to be remembered that for any system, quite apart from its merits, natural conservatism will always secure defenders.

On the other hand, expressions of dissent from an accepted system, imply some degree of conversion or perversion to some other, or at least a belief that the accepted system is in error. Although this change is, in itself, not conclusive testimony against the system abandoned, it must in the case of able men, be taken as *primâ facie* evidence. At least they have felt that the system they abandon is inferior.

It ought here to be pointed out, that in any country, where no other system is in vogue, it is perhaps natural to expect, apart altogether from its merits, a rather strong support of the system; especially if it be espoused by the higher authorities, and especially if there be any, even *only supposed*, intolerance of adverse criticism. Without applying it to the case in point, this fact will often explain the entire absence of criticism of things by no means perfect.

Again, the fact that all people who depart from an accepted or popular opinion have to face conservative opposition, guarantees, at least in the absence of other motive, sincerity in their change of view.

Finally, it may be said that in presenting an argument on any subject whatever, the highest class of mind will naturally go directly to its rationale. With such, the argument from experience although of considerable weight, can never have a *predominant* value. There are many, however, who are considerably swayed by the opinions of men of *varied* experience, quite apart from any inquiry into the ground of their opinions. Probably with the majority, the two elements, viz., reason and authority, combine to bring about conviction. Hence the testimony of men of culture who have abandoned their adherence to a particular system, in the traditions of which they have been reared, is important. They at least cannot be accused as having a *prejudice* in favour of the new system they espouse. It will be remembered that the pupil-teacher system still exists in the United Kingdom, although it is now widely *recognised* as a bad system.

2. *Opinions in paper on Elementary Schools of Prussia and Saxony.*—The following comments are made by Mr. E. M. Field, one of His Britannic Majesty's Inspectors of Schools, in a paper on the Schools of Prussia and Saxony.[1] He says:—

"The German teacher has much more professional consciousness than his counterpart in England. . . . . He is not allowed to teach until his mind and body are mature and he is old enough to understand what teaching means. . . . . Gifted or not gifted he is always formed; whatever the metal the coin comes from the mint."

"There are admirable teachers in England . . . . but they are more the works of nature than the products of a system."

"The English teacher . . . may or may not have passed through a training-college, in the latter case it is uncertain on what pædagogic principles he puts his trust; how far it is a homogeneous organism of which the practising schools form an essential part, or how far on the other hand it is a loosely knit concourse of various teaching forces."—(p. 302).

"He has in most cases been a pupil-teacher. . . . His sympathies may have been hardened by premature responsibilities and strain, or *he may have acquired practices which he finds it difficult to unlearn.* The empiricism of early years tends always to *persist.*"[2]—(p. 303).

The passage italicised may be regarded as indicating in Mr. Field's opinion one of the possible causes of a tenacious clinging to defective system. But to continue:—

"He has neither the solidarity nor the steady aim of the German teacher."

"The greatest strength of the latter seems to me to lie in his power of exposition and his appreciation of his own language and literature—a direction in which the average English teacher is perhaps least strong. It is impossible not to be struck . . . with the care he takes to inculcate respect for the mother-tongue upon his pupils."

"The eager faces and engrossed expression of the children in the best schools impress themselves on the observer's memory."

In

[1] Special Reports on Educational Subjects.—Board of Education, London, Vol. 9, pp. 287-352.

[2] The original is not italicised.

"In good schools he is another illustration of the truth that the personality of the teacher is what matters most."—(p. 303).

Although the German never got as far as employing children to teach children, he has for some time past been anxious to improve the training of his teachers. In discussing recent proposals for reform in this connection, Mr. Field says:—

"The better general culture of the teacher by means of the Real-Schule before, and the University after, the Training College course, is a need which has its counterpart in England; but if the German teachers require a broader education, the English teachers, taken as a body, require it still more. The German teacher has, at least, the training college, which none of our assistants, and little over half of our certificated teachers, ever enter; and as regards his technical training, he has very much surer guidance. If it is deplored that "Pädagogik" is neglected by the German universities, how much greater is the defect in England, *where even in training colleges the science of education has not in any full sense a sure hold.*"[1]—(p. 324).

3. *Opinions in report on Bilingual Teaching in Belgium Schools.*—The head-master of the Pembroke Dock Country School (T. R. Dawes, M.A.), in a report as Gilchrist Travelling Student, presented to the Court of the University of Wales, on Bilingual Teaching in Belgium schools, says, in referring to normal schools for elementary and secondary teachers (*vide* p. 48):—

"There are no pupil-teachers in Belgium. In the employment of children to teach children England enjoys a 'splendid isolation.' I found that teachers and inspectors were greatly surprised that in England young pupils should be employed in teaching. The course in the normal schools for elementary teachers is four years, the age of entrance being fifteeen."

4. *Opinions expressed in report on Swiss Education.*—In a very fine report on "The Training and Status of Primary and Secondary Teachers in Switzerland," by Dr. Alexander Morgan, M.A., D.Sc., F.R.S.E., lecturer at the Church of Scotland Training College, Edinburgh, may be found the following references to the pupil-teacher system, and the proper method of preparing teachers for their calling. It may be remarked that Dr. Morgan fully recognises the great excellence of the Swiss system, and is thoroughly informed as to the nature of the pupil-teacher system. There can be no reason to suppose that he had any antecedent prejudice against the system. He says:—[2]

"It may safely be asserted that in no country in Europe is the importance of training for the teacher more clearly recognised than in Switzerland, as will be at once apparent when we state that this little country, with an area about twice that of Wales, and a population of about three millions, had in 1895 no fewer than forty-two state or private training colleges. . . . Of the forty-two institutions whose sole purpose is to train elementary school teachers a few general facts may be stated. They contain altogether about 2,600 students, the men having a small and diminishing majority"—(pp. 179-180).

"But perhaps one of the most significant facts for us to observe is that only twenty-three of the institutions are training colleges pure and simple, the other nineteen forming part of higher primary schools, or of secondary schools and gymnasia. In these higher schools the future teachers receive the same general education as those about to enter the universities or preparing for scientific and commercial pursuits. . . . There is *nothing more detrimental to a profession than too early specialisation.* If teachers, even until the age of sixteen, studied side by side in our higher schools with those preparing for the other professions and walks of life, *they would doubtless gain much in width of outlook and of culture.*

"There are no pupil-teachers in Switzerland. That system, indeed, has now been discarded by the whole of Europe, except Britain and some of the poorer villages of Russia"—(pp. 180-181).

Dr. Morgan points out that there are five universities in Switzerland, and it may be said that their influence and that of the higher schools permeates the whole system of education. This has beneficent results, for all persons occupying higher educational posts are cultured gentlemen, strongly influencing their subordinates in the common endeavour to make Swiss educational institutions approximate to their noble ideals of what education should be. Wherever the Commissioners mentioned our system of teaching without previous training, as in the pupil-teacher system, it was at once evident that the Swiss regarded it always with astonishment, that never savoured of appreciation.

5. *Origin of the Pupil-teacher System in Holland.*—When in Holland, in 1816, normal schools were first established in that country, the only system of training available for the ordinary teacher was the pupil-teacher system; and Matthew Arnold, referring thereto, says:—"It was the first serious attempt to form a body of regularly trained masters for primary schools. In our eyes, it should have a special interest: we owe to it the institution of pupil-teachers."[3] Mr. R. Balfour, of the Board of Education, London, remarks, however, upon this as follows:—

"But to record the fact that England borrowed her pupil-teacher system from Holland, would not in itself convey an accurate explanation of what that system actually was. With us, the system has never been so complete as it was in Dutch schools, and modifications have been from time to time introduced."[4]

In this connection it should be recollected that there is in Dutch schools about one qualified teacher for about every fifty children, and that "pupil-teachers are not recognised for the purpose of the school-staff."[5]

6. *Reason of Retention of Pupil-teacher System in the United Kingdom.*—Mr. E. M. Field, one of His Britannic Majesty's Inspectors of Schools, previously referred to, in referring to the teaching strength of Prussia, says:—

"Thus the main differences between the teaching staffs of England and Prussia are—(i) that in Prussia only adult teachers are employed; (ii) that nearly all are fully qualified, and very few untrained"; etc. (*Op. cit.*, p. 297.) Again,

[1] The original is not italicised.

[2] Special Reports on Educational Subjects—Board of Education, London, Vol. 8, pp, 177-261.

[3] *Contemporary Review.* Vol. 7, p. 139. [4] Special Reports. Vol. 8, pp. 293-440. [5] *Ibid*, p. 374.

Again, referring to Prussia and Saxony, he says:—

"The general supply of teachers is supplemented from time to time by an increase in the number of training colleges,—*i.e.*, in the output of trained men and women. All fully employed teachers *are qualified adults. The employment of unripe minds and bodies in the work of education is rejected as needless and unsatisfactory.* In England, on the other hand, we fit the staff by a strict arithmetical process to the school; and only a very sparing distinction is made between large schools and small, as regards syllabus. When we have to provide more teachers, *the plan is to swell the army of the untrained, the partially qualified, and the wholly unqualified. We rely upon pupil-teachership, not only as a means of training, but as an economy in staffing.* The Prussian or Saxon youth improves his mind, and does not teach, till he is mature; the English pupil-teacher improves his mind much less, *and after long teaching practice does not teach better in the end.* If it be asked how it is that the German teacher acquires his technical skill in so short a period of practice, the answer is that he starts well equipped with the all-important instrument of *language.* By its means he can create interest, make the most of what he knows, decorate his facts. He has ready to his hand the power of communicating ideas, of establishing an intellectual *rapport* between his scholars and himself."[1] (p. 351.)

The above opinion shews clearly enough that the real reason for the employment of pupil-teachers is that the system is cheap. It would hardly be possible to say in plainer terms that, in Mr. Field's opinion, it is a bad system. This fact will go far to discount some testimonies that it is the only practicable system. For example, Mr. Henry Coward, President of the National Union of Teachers, says:—

"While many educationists see grave difficulties and disadvantages in the pupil-teacher system, they have failed to find any adequate substitute for it."

If such a dictum means that to find an equally cheap system as that of employing immature children is impossible—it is simply a truism; if it means that the pupil-teaching system is the only way of training, it is answered at once by the superiority of European teachers. An affirmation that it is the only way of training teachers would need no answer. *Everything depends upon whether education is taken as a serious thing or not.* If it be satisfactory to employ absolutely untrained persons, the pupil-teacher system is undoubtedly the cheapest, because children will accept a mere pittance. If, on the other hand, there is any ground for the opinion obtaining throughout Europe and America, and even, it may be said, Japan, that the education of the people is a matter of importance, and one that should be undertaken, even in the case of infant classes, by properly educated and trained teachers,—then the *cheapness* of employing children may be questioned.

If teaching children by children really mean failure to equip in the best possible manner the individuals constituting any community for their life-work; if it mean that morally and intellectually they are being put on an inferior platform through such a method of teaching,—then it is quite possible that the supposed saving by the employment of children is really a very serious loss, and possibly one that, in the struggles of modern competition, cannot be afforded. The hope, therefore, of the Rev. Chairman of the Birmingham School Board, Rev. E. F. M. MacCarthy,[2] M.A., in his address in October, 1900, that there will be a complete reformation in the early part of the present century of such a system of preparing teachers, may after all express the truest economy.

The people of the United States of America will hardly be accredited with lacking practicality in regard to their views of life. It is almost too well known to need mention that the people of the United States believe it good economy to have previously trained teachers teaching their little ones, and do not think it wise to employ children for the sake of the saving. Is it necessary to affirm that they do not believe that untrained children teach better than trained adults?

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[1] The original is not italicised. [2] *Vide* p. 40 of his address.

CHAPTER XXXII.

CHAPTER XXXII.

Training Schools of the United Kingdom.

[J. W. TURNER.]

Introduction.—The institutions for training primary school teachers in England are of two kinds, residential and day training colleges. The residential colleges are chiefly under the management of religious bodies, but are largely maintained by the State. The day training colleges are unsectarian, and are attached to universities. Admission to both kinds is, as has been stated, by King's scholarships. The scholarship does not cover expenses in the residential colleges, and as the students receive no salary, only those who have friends to help them can afford to complete their course of training.

In Ireland there is only one training college directly under State control, although others are subsidised by the Commissioners for Education.

The training colleges of Scotland are controlled by the religious bodies, but are largely supported by the State. Provision is made in some cases for the boarding and lodging of students, but not in the colleges.

Some of the training colleges in the United Kingdom are described in this chapter.

Borough Road Training College.—The Borough Road Training College is governed by a Committee appointed by the General Committee of the British and Foreign School Society, and is residential and unsectarian. It is situated in Islesworth, about 7 miles out of London, in spacious and well-arranged grounds. Although the facilities for teaching elementary agriculture are really good, the subject does not appear in the curriculum of the College. The lecture-rooms and common hall are on the ground floor, the dormitories for juniors on the second floor, and those for seniors on the third floor. The teaching rooms are lofty, well lighted, and well ventilated. The recreation rooms are large, well equipped with apparatus for indoor games, but there does not appear to be a gymnasium attached to the College. The laboratories and libraries are well appointed. The dietary table is liberal, the dormitories roomy and well lighted, the beds clean and comfortable. The conditions of admission are—"Success in gaining a King's Scholarship, and satisfactory health, evidence of good conduct, promise of teaching, power and willingness to carry on school work in a Christian spirit, without interfering with denominational peculiarities. The aim of the College is to provide public elementary schools with thoroughly capable teachers—well-equipped, earnest, fair-minded Christian men." The syllabus of class studies for 1901–3 is as follows:—

BOROUGH ROAD TRAINING COLLEGE (ISLEWORTH).—SYLLABUS FOR 1901–1903.

SYLLABUS FOR A TWO YEARS' COURSE.

Scripture.

1. Old Testament. Lectures by the Principal, senior students. 2. New Testament. Lectures by the Vice-Principal, junior students.

(A College examination is held and a report made on Bible knowledge in each student's leaving testimonial.)

Reading and Recitation.

At least 600 lines of verse of short passages from the books selected for study.

Drawing.

(*a*) With Pencil:—

1. Freehand.—Simple copies from flat examples, more difficult ones to be analysed and leading lines drawn. Special attention to be directed to proportions of whole copy, and that of principal masses. More complex copies to be drawn (leading lines and masses only). The building up of acanthus ornament.
2. Sketches from Nature—Simple leaves drawn from dried specimens, and in fore-shortened positions from natural sprays. Shells in various positions. Butterflies, beetles, and flies from preserved specimens. Compound leaves and easy sprays. One selected flowering plant to be carefully drawn with all its various parts, petals, stamens, pistil, ovary, &c., enlarged in separate drawings.
3. Design.—Easy geometrical borders, with ruler and compasses; examples of repeats for borders to be sketched. Flowers and leaves may be used.
4. Model Drawing.—Geometrical models in any position, but not grouped. Common objects based on these models. The use of paper models for class-teaching. The correction of common errors made in drawing the geometrical models. The best methods of training the scholar to test his own work. Groups of two or three models on a board, to include a tilted model. Various common objects, both lying down and with handles, as a cup, pail, teapot, &c. Fore-shortened curves; methods of training the eye to observe them by means of patterns on cards.
5. Memory Drawing.—Any geometrical model to be drawn in at least two positions (not tilted). Easy common objects in upright positions. Geometrical models in any position. More difficult common objects, some to be drawn lying on side, as a flower-pot, ink bottle, &c.

(*b*) With Brush:—

1. Drawing in mass with the brush, simple, natural, and other forms, such as fruits, leaves, vase forms, &c. Compound leaves, from dried or other specimens.
2. Simple brush renderings of butterflies, &c., as in (*a*). To be studies in form rather than colour. The selected flower in (*a*) to be drawn with the brush, the treatment to be more or less conventional and suitable for ornament. Simple patterns for borders or to fill squares or oblongs. Appropriate background to be washed in in colour.
3. Design.—The borders in (*a*) to be ornamented with brush strokes. Same in two colours with suitable background. Patterns on cards used in (*a*) to be drawn and coloured.

(*c*) With Chalk on blackboard:—

1. Freehand Copies, as in (*a*).
2. Outlines of insects, as in (*a*).—Analysis of a given freehand copy suitable for upper standards. To show correct method of construction. Natural objects, as in (*a*), to be drawn in a free, bold style, as in illustrating botany and object-lessons.
3. Design.—Geometrical borders suitable for ruler-work in the lower standards. Coloured chalks used to fill spaces Suggestions for repeating borders, using numerals, letters, leaves, and flowers as units.
4. Model and Object Drawing, as in (*a*).
5. Models and Common Objects.—Drawing of models (correctly and incorrectly) side by side, to illustrate common mistakes made in model drawing.
6. Memory Drawing.—Objects and models, as in (*a*).

Music

Music.

1. Practical Music.
2. Theory of Music.

Staff Notation.

i. Notes.—Their position on the treble and bass staves. All the major and minor scales. Diatonic and chromatic intervals. Transposition.
ii. Time.—The value of notes, dotted notes, tied notes, and rests. Signatures of all the simple and compound times. Accents and syncopation. Contents of bars. Transcription from one time to another.
iii. Musical terms in common use.
iv. The compass and registers of the various voices of men, women, and children. General rules relating to voice training.

Or, Tonic Sol-fa Notation.

i. Notes.—The major and minor modes. Diatonic and chromatic intervals. Names of chromatic tones. Removes of keys, bridge notes, and distinguishing tones.
ii. Time.—All the measures in common use. Division of pulses into thirds and quarters. Transcription of values by doubling, halving, &c. Accent and syncopation.
iii. Musical terms in common use.
iv. The compass and register of the various voices of men, women, and children. General rules relating to voice training.

Manual Instruction in Woodwork. (First Year only.)

No.	Model.	Timber.	Time.	Tools.
1	Window wedge..	Yellow pine	3 hours ..	Knife, straight-edge, try-square, pencil, rule, glass-paper.
2	Plant label	Yellow pine	3½ hours ..	Jack-plane, straight-edge, rule, try-square, marking-gauge, pencil compasses, knife, glass-paper.
3	Garden dibble ...	Yellow pine	4 hours ...	Hand-saw, jack-plane, straight-edge, try-square, marking-gauge, knife, rule, pencil, thumb-gauge, angle-board, glass-paper.
4	Flower-pot mat..	American whitewood.	4½ hours ...	Hand-saw, jack-plane, straight-edge, try-square, marking-gauge, thumb-gauge, compasses, rule, pencil, bow-saw, firmer chisel, smoothing-plane, brace and bits.
5	Round ruler.....	American whitewood or birch.	3½ hours ...	Hand-saw, jack-plane, straight-edge, try-square, chisel, rule, marking and thumb-gauges, compasses, angle-board, callipers, scribing-knife.
6	Bench hook .. .:	American whitewood.	5½ hours ...	Hand-saw, jack and trying-planes, straight-edge, try-square, marking-gauge, smoothing-plane, rule, scribing-knife, firmer-chisel, tenon-saw, callipers, brace and bits, screw-driver, bradawl.

Physical Training (with special reference to the teaching of the subject).

It is proposed to give in the examination half the marks for physical development (theory and practice) and half the marks for general athletics, the aim being, not to render the students proficient, but to ensure assiduous practice in swimming, boating, running, walking, football, cricket, fives, tennis, or any other branch of out door sport. Any student who gives evidence of having practised one or more of these sports carefully and assiduously will receive the maximum marks.

(A) Physical development (theory and practice)—1. Ordinary drill movements—marching, squad formation, &c. 2. Breathing exercises—introducing muscular vibration. 3. Twelve dumb-bell exercises. 4. Twelve Indian club exercises. 5. Four strengthening exercises. 6. A knowledge of the chief bones and muscles of the body. A general idea of the functions of the lungs, the heart, the liver, and the skin.

(B) Instruction in swimming and opportunities for practice of outdoor sports. N.B.—All the tutors of the College take part in the said outdoor sports.

Theory and Practice of Teaching.

(A) Lectures and class discussions on the aims and methods of instruction and discipline, and the principles of psychology, logic, and ethics underlying them.

(B) Debates on the works of certain standard authors—(a), Adams' "Herbartian Psychology"; (b), Spencer's "Education," chapters 1, 2, 3; (c), MacCunn's "The Making of Character"; (d), parts of Plato's "Republic" and of Bain's "Education as a Science," or Barnett's "Common Sense in Education."

(C) Debates on current literature in teaching. Some account of the principles and methods of Froebel. (Instruction to be associated with observations made by students on the children in the practising school, so as to lead them to form some estimate of the varying capabilities of children, and of the circumstances of school life.)

(D) Methods of organising, managing, and conducting a class in an elementary school, school records and registers, curricula and time-tables.

(E) The laws of health as applied to school premises, heating, lighting, ventilation and drainage, and first-aid methods.

(F) The practical instruction to be intimately connected with all the subjects included in the syllabus, showing how to teach each branch studied, and the information to be constantly put to practical test by actual teaching in the practising schools, which should be extended over at least the whole of the second year. Students to spend two consecutive weeks of their first year in observation only in the practising schools. Students to spend two consecutive weeks in both first and second terms of the second year in teaching in the practising schools. Visits of observation by selected second year students to London schools in the third term. Observation lessons—one hour a week at the College in first year of training. Criticism lessons and other technical exercises at the College, two hours per week in the second year.

English Language and Literature.

(A) 1. Historical grammar, with a small portion of Chaucer's Prologue, 11, 1–209. 2. English literature from 1789–1832, with repeated references to and readings from the most important texts. 3. English composition.

(B) 1. For special study—Shakespeare's "Merchant of Venice"; Milton's "Comus"; Wordsworth's Sonnets (selection in "Golden Treasury" series). 2. For general reading—Addison's Essays in the "Tatler"; Shakespeare's "Twelfth Night;" the poetical works (selected) of Blake, Burns, Byron, Cowper, Crabbe, Coleridge, Keats, Scott, Shelley, and Wordsworth; the prose works of Scott and Burke. 3. English composition.

History

History and Geography.

1. (*a*) English History, B.C. 55 to A.D. 1089. (*b*) The Reformation and the Renaissance. 2. Geography—The geography and maps needed to illustrate the history courses.

Mathematics.

1. Arithmetic—The ordinary rules of Arithmetic, including decimal fractions, compound interest, present value, discount annuities, extraction of the square and of the cube roots. 2. Algebra—Elementary processes, factors, simple and quadratic equations, theory of indices, surds, ratio and proportion, arithmetical, geometrical, and harmonical progression, binomial theorem, nature and use of logarithms. The use of squared paper for the construction of curves, finding areas, and for the solution of simple equations. 3. Geometry—Euclid, Books I to IV and Book VI, mensuration, areas of plane rectilineal figures, of the circle, areas and volumes of the cylinder, cone, and sphere.

General Science and Nature Study.

Measurement of length, area, volume, and capacity. Measurement of time, velocity, and acceleration. Meaning of force and mass, and the means of measuring them. Units and dimensions. Laws of motion, based as far as possible on experimental work. Motion under a constant force. An elementary idea of friction. The parallelogram of forces, its experimental proof. Conditions of equilibrium of three forces in a plane. Moment of a force. Centre of gravity, its determination in simple cases (theoretically and practically). The simpler machines. General properties of liquids. Principle of Archimedes. Determination of density by simple methods. Boyle's law. Plotting of the curve showing the relation P/V for air. General method of representing a varying quantity by a curve. Work and energy; the relation between them treated in a simple manner. The distinction between heat and temperature, and their measurement. The thermometer, its construction and use. Specific heat. Experiments on expansion, conduction, and convection. Change of state. Latent heat, and its measurement in the case of steam and ice. Sources of light; propagation in straight lines. Reflection, refraction, dispersion treated simply and by experiment. Simple experiments in frictional electricity to illustrate the phenomena of attraction and repulsion, conduction and insulation. Simple idea of potential and the explanation of induction. Electric density. Lines of force. Electrification by contact, and the simple voltaic cell. Experiments on the magnetic, thermal, and chemical effects of currents. Experiments on solution, suspension, evaporation, precipitation, distillation, filtration, crystallisation. Solubility as affected by temperature. The plotting of a curve to show the variation of solubility with temperature. Water as a solvent; natural waters and their impurities and hardness. Mixtures and chemical compounds; double decomposition; the quantitative character of chemical action. The atmosphere. The Bunsen flame. The preparation and properties of carbon, sulphur, phosphorus, chlorine, studied by actual experimental work on the part of the student. The chief compounds of the above with hydrogen and oxygen. The composition and chief properties of ammonia, potash, caustic soda, lime, and magnesia, and the production of salts by their action with sulphuric, hydrochloric, and nitric acids. The composition and chief properties of the naturally occurring forms of silica and lime. Plant life as illustrated by the district. The structure and life history of the flowering plant and the fern. Experimental work on the examination of leaves, fruit, &c. Collection of specimens of leaves and fruits of plants in the district. The common domestic animals, their general structure, habits, food, and life history. The study of insect life as fertilisers or pests. Specimens for particular study to illustrate the above: White dead-nettle, fern, chestnut or maize seed, pea or bean, rabbit, fowl or pigeon, bee, fly, butterfly.

Extended Course of Mathematics.

Trigonometry.—Elementary trigonometrical formulæ, solution of triangles, determination of heights and distances.
Plane Co-ordinate Geometry.—Rectangular and polar co-ordinates applied to the straight line and the circle.

Extended Course of General Science.

Chemistry (Theory)—

1. Laws and conditions of chemical action.
2. Equivalents. Atomic weights. Molecular weights. Avogadro's hypothesis and relation of gas density to molecular weights. Other methods of determining molecular weights.
3. Relation of specific heat of solid elements to atomic weight.
4. Gaseous and liquid diffusion.
5. Electrolysis.
6. Theories of solution.
7. Exothermic and endothermic reactions.
8. Dissociation.
9. Spectrum analysis.
10. General knowledge of the properties of the elements with a view to their classification. The periodic system.
11. Ordinary methods of preparation, and chief properties of following elements and their principal compounds:—hydrogen, oxygen, halogens, sulphur, nitrogen, phosphorus, arsenic, boron, carbon, silicon.
12. Preparation, properties, and relation to one another of the following compounds of carbon:—Marsh gas, ethylene, acetylene; methyl and ethyl alcohols; formic, acetic, and oxalic acids; cyanogen and the cyanides; nature of substitution. Synthetical production of carbon compounds from their elements; classification of carbon compounds in homologous series; constitutional formulæ.
13. Chief sources, preparation and properties of the common metals and their more important oxides, hydroxides, sulphides, and salts.
14. Syllabus of general elementary science extended.

Chemistry (Practice)—

1. Analysis of mixtures containing not more than two salts of inorganic substances, and analysis of simple organic salts of oxalic, acetic, and formic acids.
2. Simple gravimetric experiments.
3. Simple volumetric analysis with standard solutions of acids, alkali, and potassium permanganate.

Mechanics.

Composition, resolution, and equilibrium of uniplanar forces and of parallel forces not in one plane, by calculation or by graphic methods. Centre of mass and its determination in simple cases. Simple mechanisms. Simple linkages. Velocities and accelerations, their measurement and composition. Mass, force, momentum. Units and dimensions. Motion under a constant force. Projectiles. Uniform circular motion. The hodograph. Simple harmonic motion. The simple pendulum. Simple cases of impact. Work and energy, and simple applications to the above. Equilibrium of liquids under gravity. Pressure on plane areas, and on solid bodies. Specific gravity and its determination. Meaning of metacentre.

Language, other than English.

Latin.

1. First-year's course, Cicero's "De Senectute." Elementary grammar and composition.
2. Second-year's course, Pliny—fifteen letters. One book from the Intermediate Arts (London) selection for 1903 More advanced grammar and composition.

French

French.

1. First year, for special study—Passages from modern French authors (Lazare). "La Poudre aux yeux" (Labiche et Martin).
2. Second Year, for special study—(1) "Tartarin de Tarascon" (Daudet). (2) "Le Médecin malgré lui" (Molière). (3) Poetry book for the two years, "French Poetry" (Boielle).

(Exercises will be given in *dictation*, and *conversation* classes will be held.)

SPECIAL COURSES.

Advanced Science (B). Composition and resolution of moments. Equilibrium of rigid bodies and of flexible cords. Centre of gravity. Elements of uniplanar kinematics. Moments and products of inertia. Motion of a rigid body in one plane. Equilibrium of incompressible fluids, and of solids floating in gravitating fluids. Centre of pressure of a plane area. Stability of flotation for small displacements.

Advanced Mathematics (D). Properties of the conic sections, by pure and co-ordinate geometry. General equation of the second degree. Differentiation. Taylor's theorem, with applications. Maxima and minima of a function of one variable. Applications to tangents and normals of plane curves. Elementary forms of integration. Integration by parts. Integration of rational fractions. Reduction of integrals of functions of a single variable. Applications to lengths and areas of curves, and volumes of solids of revolution.

Advanced Instruction in the Theory and History of Teaching (G).

1. Modern methods of teaching modern languages (as illustrated through French).
2. The history, writings, and position in education of (1) Mulcaster; (2) Comenius; (3) Rousseau; (4) Herbart; (5) Pestalozzi.
3. The special study of Mulcaster's "Positions," Comenius' "Orbis Pictus," Rousseau's "Emile," the Psychology of Herbart, and the foundation of object teaching as taught by Pestalozzi.

Practical Training in the Borough Road College.—Experience in the practical work of teaching is obtained under a resident Master of Method in two public elementary schools and a secondary school, all three in the neighbourhood of the College. The students are divided up into workable sections. Each student spends two consecutive weeks of his first year observing the teaching of the head masters of the schools. He gives very few lessons, and these are based upon specimen-lessons which have been given by the Master of Method. During his second year he is required to spend a month, in periods of two consecutive weeks, with classes different to those he taught before. In their last term at the Training School, selected students make visits of observation to the best London schools, and report to the Master of Method on teaching methods, discipline, organisation, or any other special feature in the schools visited. The Master of Method and his assistant spend the greater part of each day at the two public elementary schools which serve the purpose of practising schools. On one morning in the week model and criticism lessons which have been given in the practising schools are finally considered in the Training College. In addition to the practice in teaching gained by attendance at one of the practising schools, or by visits of observation to London schools, all the students of the second and third year are brought together for two hours in each week, two hour lessons, to participate in the public exercises given in the College. A series of lessons is decided upon, and the attention of the students, who are to deliver the lessons, is directed towards maintaining, developing, and connecting the main points throughout the series. The pupils are obtained from the practising schools. On the completion of a series, which may occupy five or six weeks, a general discussion on the lessons takes place. The first year students, in relays, are allowed to attend these criticism lessons. The following series will give an idea of the plan adopted:—

Series B, Standard VI, English.—The Vikings and their homes; the coming of the Danes to England; the preparation of a recitation lesson on Mackay's "The Sea-King's Burial"; the recitation of the poem, "Alfred at Assandun, and his later wars with the Danes"; Alfred's Reforms; a composition lesson on Mackay's poem; the grammar of stanza No. 7 of that poem; Life in England in the Time of Alfred; Legends relating to Alfred; how far they are true, and upon what facts they are based; the materials from which a history of King Alfred has been made.

Demonstration lessons by the Master of Method are given once a week before the students of the first year. The ordinary school subjects are treated, and several lessons are given in the case of the more important branches. The practical instruction is made to illustrate the lectures in theory. Each student attends two lectures on the theory of teaching in each week. In addition to reading books dealing with school management and methods of teaching, the students prepare portions of standard authors, such as Adams' "Herbartian Psychology," Spencer's "Education," MacCunn's "The Makingof Character," Plato's "Republic," while time is provided for the students to become acquainted with current educational literature. *The College adopts the excellent plan of sending the very best of its third-year students to the Continent* to obtain ideas with regard to foreign systems of education. The physique of the students when entering the College is not satisfactory, for, as pointed out earlier in this chapter, physical training forms no part of the curriculum of the pupil-teacher centre. This defect the management has set about to cure. The height, weight, and measurements of each student are made immediately after his admission; a systematic plan of physical devolpment, including swimming, and outdoor sports, is pursued; and all improvements or otherwise are carefully noted from time to time. The splendid grounds afford ample opportunities for all branches of athletics. Manual instruction in woodwork, based on the Sloyd system, is optional for students of the first year. A large number of the students leave the Training College at the end of their second year, and with very few exceptions return to Board-school work, generally in the towns where they received their training as pupil-teachers. The average salary of students who left in 1901, on being re-employed, was £87 10s. Study lasts during the morning session from 9 o'clock to 1. The afternoon is free for private study and recreation, excepting in the case of those students whose turn it is to visit the practising schools. Evening lectures and studies occupy from 6 to 9 o'clock; recreation follows to 10·30; at 10·40 all lights are out. The conduct of the students of Borough Road Training College was studied under varying conditions—in the general lecture-hall, in the head master's office where *viva-voce* examinations were being conducted, in the dining-hall, in the recreation rooms, in the play-fields,—and the general impression left was that the College is developing a manly and intelligent lot of young men, who should make their mark in the public elementary schools. The practical skill of each student is tested, at the conclusion of the period of training, by one of H.M. inspectors, but the full teaching-certificate (the parchment certificate) is not issued until the student has spent at least two years in a primary school.

The

The Normal Department, Durham College of Science, Newcastle-on-Tyne.—The work of the Normal school in the Durham College of Science was discussed with the Commissioners by Professor Mark R. Wright, M.A.. The following instructions to students attending practising schools, the programme of the three years in Art of Teaching, and the prospectus of the Normal Department, Day Training College, will give a sufficient indication of the course of teacher-training at the Durham College of Science :—

THE DURHAM COLLEGE OF SCIENCE, NEWCASTLE-UPON-TYNE.—NORMAL DEPARTMENT.

INSTRUCTIONS TO STUDENTS ATTENDING PRACTISING SCHOOLS.

During the time students attend the schools they are to consider themselves on the regular staff, and must carry out the instructions of the head teachers.

They are required not only to teach, but to undertake any work suggested by the head teacher, such as assisting in the playground during assembly and play-time, and preparing special lessons when required; they are expected to give during their visit generous and willing assistance.

The opinion that is formed of their capacity as teachers will, in a great measure, depend upon the opinion that is expressed upon their school work.

A careful record of the visit should be kept in a special book. In this book should be noted such points as building (a plan to be drawn), ventilation, organisation, time-table, arrangement of classes, distribution of teachers, curriculum, and methods of teaching particular subjects. (Second-year students should attend particularly to organisation and discipline.) They should consider carefully the conditions and surroundings of the school, and should observe any distinctive methods and new experiments that are attempted in the school.

Each day a record of the work done is to be entered, together with short notes of special or typical lessons.

During the visit the new code and the instructions to His Majesty's inspectors should be read.

A thoughtful and appreciative account of the school visit is considered an important contribution on the part of the student to the Exercises on School Management.

These instructions are to be inserted in the front of the special book, and the book is to be given in at the first education lecture following the school visit.

——— MARK R. WRIGHT.

CLASSES IN ART OF TEACHING.

First Year Course.—Tuesday and Thursday, from 10 a.m. to 11 a.m. ; Wednesday, 9 a.m. to 10 a.m.

The training of the senses and of the memory. Observation. The order in which the faculties of children are developed. The general principles of teaching; class management; discipline. The methods of teaching the ordinary school subjects. The methods and principles of infant teaching and discipline, and of cultivating the intelligence of children. The general principles of logic. The preparation of notes of lessons.

Second Year Course.—Monday, Tuesday, and Thursday, from 9·15 a.m. to 10 a.m.

The process of reasoning. The formation of habits and character, considered in their application to the methods of teaching and of moral discipline. Authority and discipline. Rewards and punishments. The organisation and management of schools. Co-ordination and division of studies. School registration. School hygiene. Plato's Republic. The elementary principles of Psychology and Ethics applied to Education.

Third Year Course.—Monday, Wednesday, and Friday, from 10 a.m. to 11 a.m.

The History of Education from the Renaissance. Short, special course on Psychology and Ethics. Criticism and mode lessons will be given in schools each week on Tuesday and Thursday afternoons.

PROSPECTUS OF THE NORMAL DEPARTMENT, DAY TRAINING COLLEGE, UNIVERSITY OF DURHAM.

The Lords of the Committee of Council on Education have approved of the Durham College of Science as a Day Training College for men and women students.

King's Scholars who pass successfully through two or three years of training receive special mention thereof on their certificates, and are recognised as trained teachers (New Code, Art. 55–56).

The authorities are prepared to receive applications for admission from :—

(*a*) Any candidate who has obtained a place in the first or second class at the last preceding King's Scholarship Examination, and of such candidates preference will, in the first instance, be given to students who state on their examination paper their intention to enter the Newcastle Day Training College, and who obtain a First Class in the Scholarship Examination.

(*b*) Any graduate or person qualified by examination to become a graduate in Arts or Science of any University in the British Empire recognised by the Board of Education for the purpose of this article, who wishes to enter the college for a year's training.

(*c*) Any candidate over eighteen years of age who has passed, within two years preceding the date of admission, the London University Matriculation Examination, or any corresponding university examination. Article 115 (*d*) of the New Code should be consulted, but permission should be obtained from the Training College before it is assumed that any examination mentioned in Schedule VIII will be accepted for the purpose of an Admission Examination.

Candidates should, through the managers of their schools, obtain permission from the Board of Education, Whitehall, to sit for the Scholarship Examination (Art. 46). *Before* December 1st they should apply to the secretary of the college for application forms for admission to the Normal Department. They must make their own arrangements for the examination at any convenient centre, as the college is not an examination centre, and should state clearly on their paper their intention to enter the Newcastle Day Training College.

The Professor of Education and Head of the Normal Department will be responsible for all the studies of the students, and they will attend such classes as he may select.

By the kind permission of the School Boards of Newcastle-upon-Tyne and Gateshead, students will spend the necessary time in teaching in the respective Board Schools.

The King's Scholarship Examination will be accepted as being equivalent to the College Matriculation Examination. Normal students enjoy the same privileges, and are subject to the same general rules as other students of the college.

The subjects in the "Syllabus for Certificate Examinations" will be regarded as being of primary importance, but every facility will be given to well-prepared, earnest students for attending other classes.

Students

Students (men and women), if well qualified, are allowed to read for the degrees in Science (B.Sc.) or in Letters (B.Litt.) of the Durham University, and are able to complete their degrees during their period of training. Preference will be given to those students who are qualified to read for a University degree, and who are prepared to attend three sessions in order to complete their University degree. But in order to pursue such a course of study with a reasonable chance of success, it is necessary to enter College with a sound elementary knowledge of Latin, French, and Elementary Mathematics, in addition to the subjects of the Scholarship Examination, and students must be prepared to take a three years' course.

Degrees in Science.—Students who wish to read for the Science Degree (B.Sc.) must pass the Preliminary Examination in Arts, or the First B.Litt. Examination (*see* College Calendar), or the London Matriculation Examination before entering College.

Degrees in Letters.—Well prepared students can pass the first examination for B. Litt. in September, and can read for the second examination during their first year; other students, who pass the entrance examination in Latin, French, or German, and Mathematics, can read for the First B.Litt. during their first year. The degree course will generally extend over three years; only those who are specially well prepared before entering will be allowed to complete the degree in two years, and, as a rule, the course will extend over three years.

Special Entrance Examinations.—All King's scholars must take this examinatfon in French or Latin, and in Mathematics, unless they sit for the Preliminary Examination in Arts, or for the First B.Litt., or have passed the London Matriculation Examination. The examination will not be difficult; those who have prepared one of the languages for the Scholarship Examination should continue their reading, and those who have at present no knowledge of the languages, or of Mathematics, can, with good tuition, be ready for the examination in September. The syllabus for the examination is—

Latin and French.—Latin—The accidence must be known to the end of the regular verbs. Easy translations. French—Macmillan's "Elementary French Course—First Year." Accurate pronunciation is of great importance, and candidates will be expected to read aloud a piece of French prose. Students must take either the Latin or the French paper, or, if they propose to read for the First B.Litt., they must take both.

Mathematics.—Men students, and those who wish to read for a Science Degree, should reach the standard of a first-class in the second stage Mathematics of the Board of Education, South Kensington. This success, in May, 1902, will be accepted as evidence of preparedness; or the Mathematical papers set for the Special Entrance Examination, and similar in difficulty to the Science and Art paper, must be attempted, and a fair standard in such papers must be reached.

Women students will be examined in Elementary Algebra to Simple Equations, and Euclid, Book I.

The right is reserved of declining to admit any candidate who does not reasonably follow one of the above courses of study.

In the examination results of the Board of Education, great importance is attached to success in Drawing. This subject takes a great amount of time in College, and all should therefore endeavour to qualify in May, 1902, for the "D" certificate, especially in Freehand and Model Drawing. It is also advisable to obtain the certificate of the Tonic Sol-fa College.

Students who pass the University Examinations, or who otherwise distinguish themselves, may be allowed to remain for a third year of training, and preference will be given to those who propose to complete their degree by a third-year course.

Text Books.—Any of the ordinary text books may be used in preparing for the above examinations. The following are those in use in College:—Latin—Allen's "Latin Grammar" (Clarendon Press); Hallidie's "Latin Lessons for Beginners" (Percival). French—Macmillan's "Elementary French Course—First Year." Mathematics—Euclid (Hall and Stevens); Algebra (Hall and Knight); Trigonometry (Hobson and Jessop).

A grant for maintenance will be made annually from the Board of Education of £25 to each man, and £20 to each woman King's scholar who is a recognised student of the Normal Department. (*See* Art. 127, New Code.)

Each King's scholar must pay to the College an inclusive fee of £8 at the beginning of each academical year. This fee admits to all the classes of the College, provided that students attend with the sanction of the Head of the Department; but it does not include University fees for degree examinations, the cost of materials used in the College laboratories, or the hire of microscopes, or the cost of attending geological excursions.

Attendance of King's scholars at the College begins in September, and the examinations for certificates take place in June or July of each year, when the training for the year finishes.

Students may reside at their own homes, or in lodgings approved by the Professor of the Department. Permission to reside at home can only be given when the time required to travel to and from the College is short, and when the students are able to attend all necessary classes and the practising schools punctually and regularly.

Women students, who do not reside with their parents or guardians, must join the College Hostel (*see* College Calendar). In this case, the grant for maintenance under Art. 127 of the code (£20) will be retained by the College, and the student will pay at the beginning of each term (three terms per year) five guineas to the College. Men students will reside in lodgings approved by the Professor; the grant for maintenance (£25) will be retained, and each student will pay at the beginning of the first and second terms of each year five guineas to the College, and at the beginning of the third term, £3 10s. These payments will include the cost of board, lodgings, and tuition.

The Training Colleges of Ireland.—There are several training colleges in Ireland in operation and receiving grants from the Commissioners of National Education, but the only one directly under their management is that in Marlborough-street, Dublin, for men and women. The courses in Marlborough-street are of one and two years' duration. The two-years' course is intended for pupil-teachers, paid monitors, and other suitable students approved by the Commissioners. The one-year's course is open to principals and assistant-teachers of National Schools, and to University graduates. Before candidates are admitted to the training college, they must sign a declaration that they intend *bonâ fide* to adopt and follow the calling or occupation of teacher in a National School, or as a teacher in Public Elementary Schools of Great Britain, in the Army or Navy, or in Poor Law Schools, Certified Industrial Schools, or Certified Reformatories in the United Kingdom. Candidates who are admitted to the training college are called King's scholars, and they are boarded and lodged (not at the college itself, but in adjacent buildings) free of expense out of the annual grants made to the college. The Commissioners also recognise a limited number of duly qualified young persons as extern students. The Commissioners do not provide board and lodging for the latter, but they are permitted to attend, without any charge, the practising schools and the lectures of the professors, and have all the privileges of King's scholars. The total attendance is about 300. The sexes have separate rooms in the same institution, separate teaching, and separate principals. A Model School, with boys', girls', and infants' departments, is attached to the training college, and the master and mistresses of the Model School look after the practical training of the students under the direction of one of the teaching professors, who is also Master of Method. The arrangements with regard to practical teaching are very similar to those noticed in the Belfast Model School, where pupil-teachers were engaged, the only difference being that whereas the pupil-teachers sit and teach in Belfast Model School, in the Dublin Training School the students carry on their work standing. Under the guidance of the Professor of Pedagogy, a visit was made to the "Example School." This institution is intended to give students an idea of the management of a small country school, or what in Australia would be

be termed a "bush school." Here the student gains valuable teaching experience, either by doing the work himself or watching the teacher in charge doing it. On the morning of the visit Standard I, boys about 7 years of age, about twelve in the class, were receiving a lesson on stick-laying and hand-and-eye training by the teacher in charge, students observing. Standard II were writing. Two small sections of Standard III were engaged in the addition of decimals (taught with the elementary rules in Ireland); and in easy vulgar fractions. Another class, two boys apparently of highest standard in elementary work, were deeply interested in an experiment in physics without the aid of, but very probably with some previous instruction from, their teacher. The work to be done in every section had been carefully outlined on a blackboard by the master in charge, to be later on entered by the students in their note-books. The home-work done by the pupils of the "Example School" was very good, particularly that shown in the science exercise-books. The classes in this school are changed every month in order to prevent any boy deteriorating in his general class-work. Other schemes for giving students the best practical training in the management of schools of their own have been tried, but none have given so much general all-round satisfaction as the "Example Schools." The amount of practical teaching done by students is about one week in the quarter. Much time is devoted in the College to science and drawing—three hours a week for each subject. Splendid new buildings are in course of erection, at a cost of £5,000, for science purposes. No modern languages are taught. The students, both in their lecture rooms and in their practical work, show great earnestness and intelligence. The male students are a fine lot of young men physically. There are no University developments connected with the institution. The male King's scholars attend at the Albert Agricultural Institution near Dublin, once each week, during their course of training. Their instruction is directed mainly towards giving them correct ideas of improved farm and garden practice. They receive teaching from the agriculturist and horticulturist of the establishment, and have full opportunities for seeing practical and scientific agriculture and horticulture illustrated on the farms and gardens.

The Training Schools of Scotland.—The number of training colleges in Scotland under Government inspection is eight. Six of these are for both males and females and two for females only. The training colleges of the United Free Church are three in number—one in Edinburgh with 220 students, one in Glasgow with 250 students, one in Aberdeen with 130 students. These three colleges train both men and women. The training colleges of the Church of Scotland are three in number, located in Edinburgh, Glasgow, and Aberdeen, with upwards of 500 students, men and women. Of the remaining two training colleges—both for women—one is in Edinburgh under the management of the Scottish Episcopal Church, and the other in Glasgow under the control of the Roman Catholic Church. The ordinary course is for two years. Each candidate for admission to the training colleges must produce a minister's certificate of moral character and a medical certificate on a form supplied by the college authorities. No candidate can be admitted who has not attained the age of 18 years on 1st of July next before the date of admission. Admission to the training colleges may be obtained in the following ways:—

I. Under Article 95 (*a*) 2, of the Scotch Code, by passing the University Preliminary Examination, or the corresponding Examinations for Leaving Certificates. This applies alike to those who have and those who have not been pupil-teachers. Candidates qualified under this Article, who have applied for and obtained the consent of the Scotch Education Department, are eligible in preference to all other candidates for admission without examination to the training colleges and to the privileges of University attendance.

II. Under Article 70 (*d*) 6, for pupil-teachers who have obtained a pass in the Higher Grade at the Leaving Certificate Examination, or who have passed the preliminary examination in any of the Scotch Universities, and Article 95 (*a*) 3, for non-pupil-teachers who have obtained a pass in the Higher Grade at the Leaving Certificate Examination.

III.—Under article 95 (*a*) 1, by gaining a place in the first or second class in the King's Scholarship and Studentship Examination. The candidates (male and female, both Church of Scotland and United Free Church) who pass in the first class in Edinburgh, Glasgow, Aberdeen, or at other centres, are all admitted to one or other of the colleges, before any second-class candidate receives the offer of a place. Successful candidates are required to sign a bond, the provisions of which are:—

(*a*) To complete a two years' course at the training college.

(*b*) To serve immediately thereafter in an elementary school under inspection until they have received from the Education Department their parchment certificates.

All first-class male candidates, whether entered under article 95 (*a*) 2, 70 (*d*) 6, or 95 (*a*) 1, receive a bursary of £25 in the first year. Second-class candidates, under 95 (*a*) 1, receive a bursary of £23 in the first year. Students whose work at the Training College and University has been entirely satisfactory to the Rector, receive a bursary of £25 for their second year; the others receive a bursary of £23. The bursaries to females are on a much lower scale. No student is recommended to the Department for a third year of training on the ground of special merit who has not done the Training College and University work to the entire satisfaction of the Rector, and who has not passed the Degree Examination in at least two subjects.

King's Scholars who have been admitted as qualified by having passed the preliminary examination of the Universities, enter at once on a graduation course in the University, and students of special merit, with the consent of the Department, are allowed a third session. Those who have not passed this preliminary examination are confined to training-college work. Students who enter on a University course have their matriculation and class fees at the University paid for them, and also half the cost of their University books. Their work at the Training College is restricted to about ten hours per week, exclusive of drill, to enable them to prosecute their studies for a University degree in Arts or Science. The colleges are non-residential, and female students residing away from home must live in boarding-houses certified by the college authorities. To each college is attached a practising-school where the students get their practical training. Three hours per week are devoted to the Art of Teaching by all students. The regular University Matriculation pass at admission is preferred to the "Leaving Certificate."

In course of conversation with some of the heads of the training colleges, the following opinions were expressed regarding the pupil-teacher system. The system was approved by some. The early admission of pupil-teachers was deprecated. An attendance at a higher grade or secondary school until the age of 16 or 17 years was reached, then admission as a pupil-teacher, half of the time to be spent learning

learning the Art of Teaching, the other half attending a pupil-teacher centre; then the experience of two or three years at a training college with opportunities for attendance at University lectures were the main points in a general scheme that was outlined by those advocating the system. Some of the Inspectors with whom the subject was discussed advocated a longer stay in the higher grade school, even till 18 years of age, no term of pupil-teachership, and then direct admission into a training college with concurrent work at a University. Those in favour of a pupil-teacher course claim that the best teachers come from the ranks so trained.

Programme of the Glasgow United Free Church Training College.—The following programme gives an outline of the Education for teachers in which the University influence can be directly traced:—

GLASGOW UNITED FREE CHURCH TRAINING COLLEGE.

HISTORY.

Summer Session, 1903.

Selections from Hallam's Constitutional History. A course of lectures on present day institutions of Government and their historical origins.

GEOGRAPHY.

Summer Session, 1903.

A course of lectures on the study of geography. Methods of teaching geography. Measurements of heights and distances. Construction and use of the clinometer and the sextant. The use of a simple form of the theodolite. Rough determination of latitude with the sextant. Surveying.—Practical exercises in the construction and use of plans and maps, including sketch maps from rough surveys of the physical features of neighbouring localities.

HEALTH.

1. Structure of the Body.—Introductory; skeleton, muscles, and joints; body cavities and their contents; blood and its circulation; nervous system; tables showing development of children.
2. The School and the Home.—Construction of school buildings; drainage; composition of air; impurities and their effects; ventilation by natural and artificial means; lighting; position of windows for best light; desks—dangers arising from faulty desk construction.

The Scholar.—Mental exercises; symptoms and effects of excessive mental exercise; muscular exercise and recreation; personal hygiene; children's diet; children's dress; baths and bathing; eyesight in relation to school life; defects.

4. Diseases in School.—Infectious diseases; insanitary conditions; school accidents; first aid; foreign bodies in eyes, ears, nose.

MUSIC.

Non-University Students.

Junior Students.—(*a*) The theoretical requirements for the "School Teachers' Music Certificate" of the Tonic Solfa College. (*b*) The practical requirements for the "School Teachers' Music Certificate" of the Tonic Solfa College. N.B.—The female students only will perform choral music.

Senior Students.—(*a*) The theory of music in Tonic Solfa and Staff notation so far as it bears on teaching in elementary schools. (*b*) Notes of lessons on class singing, voice training, ear training, and part singing. (*c*) Sight singing from Tonic Solfa and Staff notation so far as may be necessary to qualify for teaching in elementary schools. (*d*) Choral singing (female students only). (*e*) The art of teaching time, tune, ear and voice training, *i.e.*, lessons will be taught by students on various topics connected with school singing.

University Students.

Junior Students.—Tonic Solfa theory and practice so far as is required for teaching in Elementary Schools.

Senior Students.—(1902) Elementary sight-singing from Tonic Solfa notation. (1903) Elementary sight-singing from Tonic Solfa and Staff notation. N.B.—University students will not practice and will not profess choral music.

FRENCH.

In this subject there is no distinction of "years." The students are divided into four classes which meet simultaneously so that there is room for satisfactory grading.

Advanced Class.—Translation prepared and unseen from difficult French authors. Dictation, conversation, composition, "redactions françaises." Phonetics. Lectures on French literature. NOTE.—In this class the whole of the instructions is given in French.

Ordinary Class (in three sections).—Translation prepared and unseen from French authors. Grammar, exercises, idioms dictation, conversation, composition. Phonetics (one hour weekly by Monsieur Rey). NOTE.—In all those three sections the work, so far as possible, is carried on in French.

In both classes attention is given to the methods of teaching the language, and to this subject one of our lecturers has given special study. To Mr. Morrison, the lecturer in question, will be given the direction of this part of the work.

GERMAN.

This class is conducted almost exclusively in German. Attention is paid to clear and distinct pronunciation, and the training of the ear by means of simple words, illustrative sentences, careful reciting, and dictation. Grammar is taught mainly by means of typical sentences. While only one lesson per week is given in composition proper, the pupils are daily called upon to practise free composition in the actual use of the language. The lecturer (Dr. Lubovius) deprecates the prevailing insistence on a difficult English-German translation as a test of power to teach the language, and would make the following profession for the final examination of his class:—

1. Reading at sight a passage of ordinary difficulty, and an idiomatic rendering into English.
2. Reproduction *viva voce* or in writing, of a passage spoken or read in class.
3. Conversation on ordinary subjects of daily life, or on the subject-matter of the reading.
4. Grammar and easy composition.
5. Method of teaching German.

TEACHING.

First Year.

1. Criticism lessons on the ordinary class subjects for junior scholars:—

English.—Reading, noting, investigating and correcting errors in enunciation, &c. Intelligent explanations of passages read. Lessons on grammar, parts of speech, definitions, their relation to each other, the simple sentence and its parts.

Geography.—Geographical terms, maps, lessons on geography professed in the scheme of work of the Junior Classes of the Practising School.

History.—Lessons from the approved scheme of the Junior Classes of the Practising School.

Arithmetic.—Notation and numeration, addition, borrowing and carrying, simple rules.

Writing.—Lessons on methodical teaching of writing, consideration and correction of typical mistakes.

Nature knowledge.—Lessons from approved scheme of work.

2. The students will in turn visit the Practising School. There they will take part in the regular routine work o the school under efficient supervision. They will have opportunities for observation of the methods of teaching registration, and all that concerns regular school-keeping,

Second

Second Year.

The work of the second year will be a continuation and completion of the work of the first year. The senior students will teach the class subjects—English, arithmetic, history, geography, writing, &c.—to the senior scholars. In view of their early qualificatian as assistants, special attention will be paid to registration, the preparation of time-tables, and schemes of work.

The senior students will also in turn spend part of their time in the Practising School, and take part in the ordinary school work.

DRAWING.

The scheme is intended to extend through two sessions, and comprises a first and a second year's course.

In both years a special feature will be made of blackboard work, and students will be taught to associate with the simplest forms, such as the circle, the ellipse, and the square, common objects, and simple, natural forms of which these are the bases. All their exercises will be drawn in such a manner as to secure the greatest freedom in wrist and shoulder action.

In both years the course will be taught with a special view to the teacher's future requirements, so that the student may not only receive instruction, but learn the best way of imparting it to others.

First Year.

Geometry.—The drawing instruments; tests of accuracy, and correction of errors. The projection in plan and elevation of common geometrical models, and of simple objects. The working out of examples from actual measurement. The theoretical instruction in geometry will be correlated to the practical instruction as given above.

Perspective.—An explanation of the principles of the subject, and the ready application of its rules to the representation of objects, views of buildings, &c., by freehand sketches. NOTE.—Drawings from actual objects will be, wherever possible, preferred from drawing from the flat, and domestic utensils, shells, leaves, plants, insects, &c., will be provided for that purpose.

Brush-work.—The preparation of different shades and tints. The simple rendering of natural forms. Conventional forms arranged to illustrate growth, symmetry, balance, &c. Simple designs in monochrome.

Ornament.—Short course of lectures on the principles of ornament and architecture.

Blackboard.—Simple forms—circle, eclipse, spiral—in all sizes. Repetition until facility and exactitude is acquired. Simple ornament based on the forms learnt. Execution of these with both hands, separately and simultaneously. The anthemion and acanthus in their different forms. Memory work. Eye training in equal spaces. Strap work.

Second Year.

Object Drawing.—More difficult combinations. Exercises testing a knowledge of model drawing, *i.e.*, the intersecting lines of roof, walls, and floor of a room; an open door; an easel; a bench, &c.

Brush-work.—More difficult exercises. Schemes of colour. Designs in polychrome, based upon natural forms already studied. Designs to fill a given space, *e.g.*, square, oblong, circle. Borders and patterns.

Design.—A short course of lectures on the principles of design illustrated by diagrams and sketches. Variations of design according to material and utility. The division of given spaces.

Shading.—The rendering of solid forms by means of shading with pencil, crayon, and stump. Work in each of these media from simple casts of flowers, fruit, and ornament.

Blackboard.—Sketching from charts. Reproducing and enlarging of diagrams. Designs from forms previously learnt. Memorising of these. Sketching of common objects with chalk and charcoal.

Correlation of Drawing.—With other studies. The preparation of diagrams to be used in class teaching. Correlation of drawing with botany, zoology, &c. A certain freedom of choice will be allowed to the student here.

MATHEMATICS (MALES).

First Year.

Algebra.—The four simple rules. Factorisation. Graphical representation of functions of one variable. Solution of equations. Graphical methods of solution. Problems. Greatest common measure and least common multiple. Fractions. Ratio and proportion. Variation. Involution and evolution. Fractional and negative indices. Surds.

Geometry.—Euclid, Books I-IV. Proportion, Book VI. Props. 1-13.

Dynamics.—Elements of statics and kinetics of solids, liquids and gases.

Trigonometry.—Definitions of the trigonometrical ratios; relations between them. Problems on heights and distances.

Second Year.

Algebra.—In addition to the above—The progressions. Permutations and combinations. The binomial theorem. Logarithms; compound interest; annuities.

Geometry.—Euclid, books VI and XI.

Trigonometry.—Plane trigonometry up to and including the solution of triangles.

MATHEMATICS (WOMEN).

Algebra.—The four simple rules. Factorisation. Graphical representation of functions of one variable. Simple equations. Problems leading to such equations. Simple equations with two unknown quantities. Graphical solution. Problems. Greatest common measure and least common multiple. Fractions. Easy quadratics with one unknown. Graphical methods of solution.

Geometry (theoretical and practical).—The construction and measurement of angles. Parallel and perpendicular lines: the bisector of an angle and the perpendicular bisector of a line. Fundamental properties of triangles. Construction of a triangle given three elements. Construction of rectangles, parallelograms, and quadrilaterals from adequate data as to sides, angles and diagonals. Propositions relating to areas of squares, rectangles, parallelograms, and triangles. Propositions relating to circles. Problems depending on such propositions. Proportion. Similar triangles; applications of the properties of similar triangles. The construction of diagonal scales. Elements of trigonometry. Definitions of trigonometrical ratios. Determination of these ratios for any angle by construction and measurement. Simple problems on heights and distances.

Arithmetic (Women).—Numeration. Scales of notation. Addition, subtraction, multiplication, division. The properties of numbers; prime numbers and composite numbers. Greatest common measure, and least common multiple. Vulgar fractions; continued fractions; convergents. The metric system. Decimal fractions; decimalisation of money; application to the working of practical problems; simple interest; compound interest; discount. The unitary method. Ratio; simple proportion. Powers and roots. Mental arithmetic.

NEEDLEWORK.

The non-university students get three hours per week for this subject during the winter session only. The University students get one hour per week during the winter, and three hours per week during the summer. The method of teaching adopted throughout is the simultaneous. The aim of the instruction is to produce good practical *teachers* of the subject.

Non-University Students.

First Year.

Theory.—(1) A general grasp of the code requirements as specified in Schedule III. (2) A thorough knowledge of the various appliances and implements used in teaching this subject. (3) Practice in drawing of diagrams of some garments suitable for pupils attending an elementary school. (4) Test examinations, *oral* and *written*, covering the whole field of needlework from Infants to the end of the Senior Division.

Practice.—(1) A child's pair of drawers and pinafore. (2) The cutting out and making of one of the abovenamed garments (on material), and the cutting out and making by tacking of the other. (3) The repairing of flannel, calico, and print garments.

Students while in Practising School to assist Needlework Mistress and so add to their experience and deftness in working a class.

Second

Second Year.

Theory.—(1) A revisal of the general principles of needlework and Code requirements. (2) More advanced diagrams of garments, other articles, and difficult stitches. (3) Notes of lessons. (4) Test examinations, *oral* and *written*, on the above.

Practice.—(1) Practice in the various stitches used in the making and mending of underwear. (2) Graded darning—(*a*) clothing; (*b*) house linen. (3) A nightdress cut out and partly made on material.

Teaching.—Students trained to give clear, bright and interesting lessons to pupils (all divisions) from Practising School. Instructress to select lessons—a criticism to follow from students and from instructress. Students to have ample facilities for cutting out, and abundant use of all appliances connected with needlework.

University Students.

First Year.

Winter.—(*a*) Theoretical part of work, including test examinations. (*b*) Practice in repairing flannel, calico, and print garments. (*c*) Difficulties in knitting stockings.

Summer.—Practice.—Cutting out and making of child's drawers and pinafore: *one garment to be partly finished in every detail* (on material), the other to be made by tacking (on paper).

Teaching.—Students while in Practising School to assist in the management of a needlework class.

Second Year.

Winter.—(*a*) Class teaching as in the case of the non-University students. (*b*) Notes of lessons.

Summer.—Theory and practice as for the non-University students; but only specimens of stitches used in making nightdress.

ENGLISH.

First Year.

Holiday reading (to be examined on entrance).—"As You Like it." Carlyle's "Essay on Burns and Scott." Any *two* of the following:—"Pendennis," "Mill on the Floss," "Quentin Durward," "Westward Ho."

Class Work.—"Julius Cæsar." "Heroes and Hero Worship." "Lycidas and Comus." Literature—1790-1850. History (Summer session). Lectures on Composition. Essays.

Home Reading.—Wordsworth and Shelley (Canterbury Poets selection). Lamb's "Essays of Elia." Tennyson, "Maud and the Princess." NOTE.—The Course for women includes one hour of Latin per week.

Second Year.

1. Holiday Reading.—All the following:—"Twelfth Night," "Coriolanus," Macaulay's "Essay on Clive," Tennyson's "Idylls of the King." Any *two* of the following:—"Esmond," "Kenilworth," "The Mill on the Floss," "Hereward the Wake."
2. Class Work.—"Samson Agonistes," "Macbeth," "Heroes and Hero Worship."
3. Home Reading.—Pope (Canterbury Poets selection); Steele and Addison's "Spectator"—Essays; Selections from Browning.
4. Literature.—Study of the consecutive periods of English Literature, which may be described as the Age of Milton, Age of Dryden, Age of Pope (1632–1744).
5. Lectures on Composition, with practical application in the writing of essays. NOTE.—The course includes one hour of Latin per week.

EDUCATION AND SCHOOL MANAGEMENT.

First Year.

The Nature of Knowledge.—Views of Descartes, Locke, and Kant. Consciousness—modes of being conscious; attention; interest. Sensation and Perception—training of the senses; observation. Conception—nature of general ideas. Connotation and Denotation. Association—words and their meanings; apperception. Imagination—free and restricted; ideals. Memory—function; kinds; mnemonics; place of obliviscence in education. Judgment—wide and narrow meaning; relation to the Socratic and Heuristic methods. The Syllogism. Elementary explanations of the ordinary logical terms. Reasoning—its purposive aspect and the importance of this aspect in education. Temperament, the emotions, will—relations to character.

The whole of the abstract truths dealt with in the above scheme will be very copiously illustrated by applications to the actual work of teaching.

Second Year.

School Organisation—classification; preparation of time-tables. Preparation of Schemes of Work. Registration—regulations concerning the marking of registers in marking and calculating attendances. Methods of teaching ordinary class subjects. Moral Education—Common school faults, and how to deal with them; formation of habit; character.

SCIENCE—WINTER COURSE.

First Year.

Measure of length, area, and volume; experimental verification of formulæ in mensuration; use of the screw gauge, graduated cylinder, burette.

Methods of recording observations; the drawing of graphs.

Measurement of mass and weight; motion and force; the dynamometer; principle of moments; the common balance; the lever.

Measurement of time; the simple pendulum.

Density and specific gravity; the principle of Archimedes; methods finding specific gravities.

The atmosphere; atmospheric pressure; the barometer; the level of liquids; the spirit-level, springs; artesian wells; the siphon.

Boyle's Law.

The composition of the atmosphere; the properties of oxygen and of nitrogen; oxidation; combustion; the composition of water.

Second Year.

The parallelogram of forces; the triangle of forces; parallel forces; experimental determination of the centre of gravity; stable and unstable equilibrium; friction, the co-efficient of friction; the inclined plane; graphical solution of some problems in statics.

Light.—Photometry; the reflection of light; the refraction of light; lenses; the simple microscope; the optical lantern; the eye.

Heat.—The effects of heat, temperature, the thermometer; calorimetric determination of specific heats of solids and liquids; determination of the latent heat of fusion of ice and of the latent heat of vaporisation of water, melting and boiling points.

Chemistry.—Study of chalk; carbonic acid gas; carbonates; salts; simple acids,

317

PHYSICAL AND MILITARY TRAINING.—WINTER SESSION, 1902-1903.

Junior Men

1 Physical Training.

1. Preliminary Instruction.—This would include "position of pupil," "dressing a class," "numbering," "standing at ease," "turnings," "balance steps," and marching in slow and quick time.

2. Physical Drill without apparatus.—This would include various marching exercises, forming two deep, lessons in forming up classes for free exercises, dumb bells, bar bells, hoops, Indian clubs, &c., and movements of the arms, neck, trunk, and legs, in successive gradations.

3. Physical Drill with apparatus.—This will include exercise with hoops, dumb bells, bar bells, Indian clubs, and with rifles.

General Instructions.—(1) While the students are being instructed the teacher will pay special attention to the backward pupils, pointing out their mistakes and encouraging them to persevere. (2.) The teacher will invariably face the class and illustrate the exercises "set" by performing the various parts of the movements reversed—*e.g.*, when the class s ordered to turn to the right the teacher will show the movement by turning to his left. (3) The teacher will repeatedly bring under the notice of his pupils (*a*) the names of the muscles principally exercised in the movement given ; (*b*) the object of the various formations on movements shown, and the result; and (*c*), as occasion offers, all points bearing on the practical work of a teacher of physical training.

2. Military Training.

All the students who desire, and who are passed by the medical officer, are enrolled in the 1st Lanark Rifle Volunteers, Glasgow, during their attendance at the College. They have to attend the requisite number of drills required by the Volunteer Regulations for "efficiency," and, in addition, an opportunity will be afforded every student, either during his course of training at the College, or at the close thereof, of passing for the Sergeant's "proficiency" examination.

Senior Men.

1. Physical Training.

In addition to going over from time to time the conspectus laid down to the junior students, they are divided into sections, and in turn called on to instruct in the work that has been taught to them. While the senior students are thus engaged in teaching, the teacher pays close attention to the manner in which the exercises are illustrated, to the clearness of their commands, and to the student's power of correcting errors. They are also from time to time called on to name the muscles and organs of the body principally affected by any particular exercise, and a record of the progress of each student is kept. Further marks are assigned for appearance in the class examinations and for general progress in teaching.

2. Military Training.

All the students who desire, and who are passed by the medical officer, are enrolled in the 1st Lanark Rifle Volunteers, Glasgow, during their attendance at the College. They have to attend the requisite number of drills required by the Volunteer Regulations for "efficiency," and, in addition, an opportunity will be afforded every student, either during his course of training at the College, or at the close thereof, of passing for the Sergeant's "proficiency" examination.

PHYSICAL TRAINING.—WINTER SESSION, 1902-1903.

Junior Females.

1. Preliminary Instruction.—This would include "position of pupil," "dressing a class," "numbering," "standing at ease," "turnings," "balance steps," and marching in slow and quick time.

2. Physical Drill without apparatus.—This would include various marching exercises, forming two deep, lessons in forming up classes for free exercises with dumb bells, bar bells, hoops, Indian clubs, &c., and movements of the arms, neck, trunk, and legs, in successive gradations.

3. Physical Drill with apparatus.—This will include exercises with hoops, dumb bells, bar bells, and Indian clubs.

General Instructions.—(1) While the students are being instructed the teacher will pay special attention to the backward pupils, pointing out their mistakes and encouraging them to persevere. (2) The teacher will invariably face the class and illustrate the exercises "set" by performing the various parts of the movements reversed—*e.g.* when the class is ordered to turn to the right the teacher will show the movement by turning to his left. (3) The teacher will repeatedly bring under the notice of his pupils (*a*) the names of the muscles principally exercised in the movement given; (*b*) the objects of the various formations or movements shown, and the results; and (*c*), as occasion offers, all points bearing on the practical work of a teacher of physical training.

The junior students during their first year of training are not called on to instruct.

Senior Females.

During their second year the students are exercised weekly in one or more of the exercises laid down in the conspectus for the junior females, and in addition they are individually tested weekly in imparting the instruction given to them while juniors.

While the senior students are thus engaged in teaching the teacher pays close attention to the manner in which the exercises are illustrated, to the clearness of the commands given, and to the students' ability to correct errors.

The students are also from time to time called on to name the muscles and organs of the body principally affected by any particular exercise, and a record of their progress is kept.

Marks are assigned for appearance in the class examinations and for general progress in teaching.

CHAPTER XXXIII.

CHAPTER XXXIII.

Training Schools of the United States.

[J. W. TURNER.]

Introduction.—The pupil-teacher system does not exist in America, and admission into the Normal Schools does not take place until the candidate has completed the High School course. The training is largely, if not entirely, professional, and generally lasts about two years. The actual teaching practice has some features totally distinct from those seen in other training institutions. Two types of training schools in the United States are described in this chapter.

Training School of Boston.—The following "Statistics, Courses, Programmes, &c., of the Boston Normal School" are from the Catalogue for the year 1902, School Document No. 7.

The Boston Normal School was established for the purpose of giving professional instruction to young women who intend to become teachers in the public schools of Boston. The course of study is for two years, and is divided into four terms of half a year each. Candidates for admission must be at least 18 years of age, must have completed a four-years' course of study in a Boston High School, and have received its diploma, or must have fulfilled an equivalent course of study elsewhere. Graduates of a university or college, or of a state normal school, approved by the Board of Supervisors, may be admitted without examination. The school year is divided into two terms of twenty weeks each, with daily sessions, Saturday excepted, from 9 a.m. to 2 p.m. The tuition is free to all residents of Boston. The tuition for non-resident students is about £20 a year. In the month of September each year the Superintendent of Schools for the city appoints not less than fifty teachers in the public schools to act as training teachers, each in his own school, to the students, only one student being assigned to a class. These classes remain in charge of the regular teachers. This special training is intended to give the students a broader view of their duties. In addition, sixteen weeks, almost one-fourth of the entire time, are devoted to practical teaching in the Normal School, according to the following arrangement:—Four weeks during the second term, eight weeks during the third term, and four weeks during the fourth term. The head-master has a discretionary power, in that he may send his students, under proper guidance, to study the museums of Natural History and Fine Arts, and important manufacturing industries in Boston. The time of the students is devoted to teaching the classes, observing the work of the training teachers, and assisting in the general duties of the school. The students generally give two or three short lessons daily, under the direction and subject to the criticism of the teachers in charge. The teachers of the Normal School visit the students several times during their stay in the city public schools for purposes of criticism and instruction. During their first term, students have frequent opportunity to see the work of instruction as it is carried on by teachers of especial skill in the Rice Training School, which is under the direction of the head-master of the Normal School. The Principal of the Practising School performs the usual duties of master of a grammar school (boys 10 to 14 years of age), and such duties in connection with the Normal School as the Superintendent of Schools directs. The course of study in this school is the same as in the grammar schools of the city. There is a post-graduate course of one year in the Normal School, Boston, for the further study of the principles of education and methods of instruction, and for observation and practice in teaching. Students completing this course may be employed as substitutes, or temporary teachers, or appointed as permanent teachers. When a graduate of this school is appointed as teacher in a public school of the city, it is the duty of the head-master of the Normal School, or of one of his assistants under his direction, to visit the student in her school for the purpose of criticism, and for suggestions in regard to her teaching. There are three courses offered by the Normal School—the regular two-years' course, a kindergarten course, and a special course of one year for college graduates.

The Regular Course.—Boston Normal School.—The regular course is designed primarily for those who intend to teach in the primary and grammar grades of the public schools of Boston. It includes the following subjects:—

(1.) Psychology, principles of education, history of education, school government and school laws.

(2.) Methods of teaching the following subjects:—

- (*a*) English: Reading (including phonics), oral and written expression (including penmanship and spelling), the history and grammar of the English language, literature (with especial attention to literature for children).
- (*b*) Nature studies: Geography, geological agencies, minerals, plants, and animals.
- (*c*) Physiology and hygiene, physical training and manual training.
- (*d*) Mathematics: Arithmetic, elements of geometry, and algebra.
- (*e*) Drawing—form and colour; vocal music.
- (*f*) Kindergarten—theory and methods.
- (*g*) United States history.

(3.) Observation and practice in the public schools of the city.

Kindergarten

Kindergarten Course.—The conditions for admission to this course are the same as for the regular course. Candidates must also be able to sing, and play the piano. Two years are required for the completion of the course. The subjects studied in the first year are the same as those of the regular course. The second year is devoted chiefly to the study of the theory and practice of the Kindergarten, and includes :—

1. Principles of education, history of education, and school government.
2. Drawing, form and colour, and music.
3. The mother play, and symbolic education.
4. Gifts—theory and practice.
5. Occupations.
6. Songs and games.
7. Observation and practice in public primary schools for four weeks.
8. Observation and practice in the kindergarten for six months.

The course is planned with the express purpose of acquainting its students with the principles of teaching which underlie the most successful work in the *primary* and kindergarten grades.

Courses for College graduates.—Boston Normal School.—College graduates may join the second-year course of kindergarten, or may take up a special one-year's course. This special course coincides largely with the second-year's regular course, the treatment of which is modified to accord with the special needs and attainments of the students. Twelve weeks of observation and practice in primary and grammar schools is provided for each student, and reasonable amount of observation and practice in high schools is allowed for individual students, when especially desired. Speaking of this class of students, the Superintendent of Schools in the city of Boston states that :—"Their difficulty has been, and, to a great extent, still is, that their college studies have given them no special knowledge of the art of teaching young children. For such special knowledge, they must resort to a normal school. . . . . A full college course, together with a good normal school course, makes the best preparation any teacher, man or woman, can have.

Details of the Boston Normal School Courses.—The following details will more fully illustrate the system of the Boston Normal School :—

SYNOPSIS OF REGULAR COURSE.

First Year.

First term.		Second term.	
Psychology	5 lessons each week.	Psychology	4 lessons each week.
Physiology and hygiene	4 ,, ,,	English	4 ,, ,,
English	4 ,, ,,	Arithmetic	3 ,, ,,
Geography	3 ,, ,,	Elementary Science	4 ,, ,,
Drawing—form and colour	2 ,, ,,	Drawing—form and colour	2 ,, ,,
Vocal music	1 ,, ,,	Vocal music	1 ,, ,,
Gymnastics, theory	1 ,, ,,	Gymnastics, theory	1 ,, ,,
		Theory of Kindergarten	1 ,, ,,
		Observation and practice in public schools	4 weeks.

Second Year.

Third term.		Fourth term.	
nciples of education	3 lessons per week.	Principles of education and history of education	4 lessons per week.
English	4 ,, ,,	Arithmetic	3 ,, ,,
Arithmetic	3 ,, ,,	English (half term)	4 ,, ,,
Elementary science	3 ,, ,,	U.S. History (half term)	4 ,, ,,
Geography	2 ,, ,,	Field work in science	1 ,, ,,
Drawing—form and colour	2 ,, ,,	Geography	2 ,, ,,
Vocal music	1 ,, ,,	Kindergarten methods	1 ,, ,,
Gymnastics, theory	2 ,, ,,	Optional course : (*a*) Gymnastics; (*b*) Elementary science; (*c*) form, colour, and drawing; (*d*) vocal music; (*e*) manual training; (*f*) cooking; (*g*) sewing.	
Observation and practice in public schools	8 weeks.	Observation and practice, four weeks.	

Optional Courses.—At the beginning of the fourth term, each member of the senior class taking the regular course is required to elect one of the optional courses. The aim of the courses is to give the students a more comprehensive and thorough training in the particular line of study to which their natural inclinations and ability lead them. The students are also, by this means, more efficiently prepared for departmental teaching.

Graduate Clubs.—There are three graduate clubs in the Boston Normal School, supplementing in a valuable manner the efforts of the staff, and offering excellent and attractive opportunities for study and the discussion of educational topics. The three clubs are :—The *Biological Club*, whose main purpose is to acquaint its members with some of the important scientific questions of the century; the *English Club*, organised for the purpose of continuing the study of English literature; and the *Boston Educational Club*, whose membership is open to all Boston teachers, and whose aim is to increase the professional spirit and professional devotion of the teaching force in Boston.

Lectures.—Each year distinguished speakers are invited to address the school, in order that the students may have, in addition to that respect and enthusiasm for their profession which their daily work attempts to foster, the inspiration and broader outlook that come from listening to men and women of wisdom and eloquence, who are in thorough sympathy with a teacher's work.

School Garden.—It will be noted that in the regular course of studies for students in the Boston Normal School Nature study has a place, and that the time allowed per week for elementary science during the second term is 4 hours, during the third term 3 hours, and that 1 hour per week in the fourth term is devoted to field work in science. A neighbouring block of land, owned by the School Department, is used for a garden. It is large enough to allow of eighty individual beds, each 7 feet by 5 feet, together with eight fairly large experimental beds, and room for a large number of shrubs. The garden

is

is worked in connection with the Science Department. The care of the garden is entrusted to the senior boys and girls attending two of the grammar schools in the locality. They have their own plots, and work under the direction of the head of the Science Department, a young lady, and one of her assistants. The science section of the senior class in training is called upon, as a part of its regular work, to assist its teacher in conducting the experiments. Theoretical and practical instruction in kinds of soil, preparation of ground, planting, growth, &c., is given to the students during periodical visits to public gardens, which they are allowed to make as part of their field-work in science. Lectures and practical demonstrations are also given at the schools and in the garden, both to the pupils and the students, by the Instructor in Economic Biology at the Massachusetts Institute of Technology. These lectures and demonstrations deal with :—

(*a*) Soils, kinds of fertilisers, sources of nitrogenous food, and rotation of crops.
(*b*) Practical planting of seeds, and transplanting of seedlings and shrubs.
(*c*) The theory of watering.
(*d*) Pruning.

The students give the boys a series of lessons bearing directly upon their practical work in the garden, treating the following subjects :—

(*a*) Soils.
(*b*) Parts of plants and their functions.
(*c*) Roots and leaves, with various indoor experiments showing favourable and unfavourable conditions for growth.
(*d*) Plant food.
(*e*) Theory of watering.
(*f*) Animals related to the plant-life in the garden, viz., the earth-worm, the potato-beetle, tomato-worm, cabbage butterfly, common toad, English sparrow.

Six experimental beds were planned to illustrate important agricultural facts, as follows :—

(i) Planted with crimson clover, to illustrate the immediate effect of pollen on fruit.
(ii) Planted with pea-vine, the successive crops spaded in, to study the pea-vine as a nitrogen collector.
(iii) Planted with pea-vine, the successive crops gathered and the vines pulled up ; note the poverty of the soil in nitrogen.
(iv) Planted with peas, and treated with a chemical fertiliser; crop compared with those of (ii) and (iii).
(v) Planted with cabbage, kale, kohl rabi (cabbage turnip), collards, cauliflower, and Brussels sprouts to show the variation obtained from the ancestral cabbage by cultivation.
(vi) Planted with corn for several successive years, to illustrate deterioration in crops through exhaustion of the soil.

The School was fortunate in getting advice from a professor of the Bussey Institute, in the planning of a small nursery and other experimental beds, and in receiving substantial and interesting support from public bodies and business firms in the city of Boston.

This instruction in turn is imparted to the pupils of the schools attending. The purpose of this garden is well explained in the following extract :—"The first purpose was to supply a real need of children born and brought up in the heart of a great city. These children need to know and love nature, to have a vital acquaintance with the soil and its products, to know which of these products are useful to man and how they may be economically secured. They also need the manual and moral training which comes from the care and cultivation of growing plants. The second purpose was to improve the training furnished by the Science course in the Normal School. This the garden accomplishes by furnishing a good supply of specimens for the teaching of science to children by the Normal pupils, and by enabling the Normal pupils to study at first hand the relation which this subject bears to the conditions and needs of the children."

The Head-master of the Normal School, in one of his recent reports, deals at length with this feature of the school's work. A few extracts, showing how he viewed the school garden, are here given :—

"Teachers notice a general intellectual awakening in some of the pupils, which they ascribe to this work. Many of them received considerable moral training. They become more self-reliant and thorough in their work. Their gardens improved in neatness. They were more persevering and industrious. A helpful spirit was cultivated. By their remarks they showed that they had an increased respect for the farmer, and in general for manual labour. The education has a practical economic value to the child and his family, as is shown by the fact that a number of the boys have started gardens in their own yards. Many parents express their appreciation and interest both by words and by visits to the garden. The spontaneous freedom and interest of the children in this work enables the teacher, working with them, to get an insight into their character which, in some cases at least, is well-nigh impossible in the ordinary class-room lesson."

In concluding his report, he says :—"I give this experience of school-gardens as a suggestion of one way in which possibly we may overcome some of the difficulties in Nature study in the heart of our large cities."

After mentioning the difficulty teachers experience in obtaining suitable specimens, he points out that a school-garden is the best means of removing the difficulty by furnishing ample material, and it has the additional advantage that "the material is in the best possible shape for study, inasmuch as the object is presented in its natural environment and in all stages of its growth from the seed to the fruit."

In his final paragraph, he proudly continues :—"We have found the union of the social settlement and the school in this case a most practical and happy combination. The relation of the school-garden to the home-life of the community is such as to suggest that these two agencies could always work together in matters of this sort to advantage."

The School issues the following certificates :—

High School, Class A.—To masters and junior masters of the Normal and High Schools, and principals of Evening High Schools.

High School, Class B.—To assistant principals and assistants of the Normal School, and of Day and Evening High Schools, and to principals of Grammar Schools.

Grammar

Grammar School, Class A.—To masters and sub-masters of Grammar Schools, principals of Evening Elementary Schools, and assistants of Evening High Schools.

Grammar School, Class B.—To assistants of Grammar, Primary, and Evening Elementary Schools.

Kindergartens.—To instructors of Kindergartens.

Special.—To instructors of special studies and of special schools.

The Training School of New York.—This college is non-residential, and is attended by about 300 students, forty of whom are males. Both sexes are taught in the same class-rooms. The head-master states that before long the School will be exclusively occupied by females, as according to a recent regulation it has been decided that no male candidates can be admitted into the Training School, New York, without a college certificate. As these colleges give a pedagogical course, and grant diplomas, it is believed that those students who intend to follow the profession of teaching will remain on at their own college and complete their training. Candidates for admission must have reached the age of seventeen years and have completed the four-years' course of a High School. The course is two years in duration, three half-years of which are spent in the Training School, the fourth half-year being devoted to practical teaching in one of the city schools in substitute service. Attached to the Training School is a Model School, which as yet lacks some of the characteristics of such a school, inasmuch as the staff is not so complete as the head-master would like, and the arrangement of the class-rooms is not satisfactory. Among the chief features of the Training School work are :—

(*a*) *The amount of Observation exacted from the students along lines of thought well set out.*—This is carried out in the Model School during three half-yearly terms. During ten consecutive weeks students spend much of their time in the model school observing methods of teaching and class management, and subsequently preparing reports on the subjects treated in accordance with a prearranged scheme of questions elaborated by the head-master. This report is a complete check on any indolence or carelessness which might arise during the period of observation. At other times throughout the course, students spend short periods in observation in the Model School, the aggregate time for all this class of work amounting to 120 hours. In gaining this experience students are told off in groups not exceeding six, and placed under the care of a certificated teacher of the Model School. The advantage in having the small class lies in the opportunity of individual attention to each student's particular needs. The students, while gaining this practical knowledge of school management, do *no teaching*. Their duty is to observe, compare, report.

(*b*) *The actual practice in teaching is gained by what is termed substitute service.*—This system of substitute service can only be participated in *during the last six months of the training course.* The practice is peculiar to the New York Training College. It will be remembered that the Boston Normal School sends out its students during the *last quarter of each year* among the teachers of city schools to gain their practice in class management. The New York students get ready employment as substitute teachers in city schools, acting for regular teachers temporarily absent, and in this capacity are paid a dollar and a half for each day that they are so engaged. They are reported on every month by the head-teachers of the school in which they are employed, as to their conduct and efficiency; and on this report, certified by the head-master of the Training School, they are paid. The system works well; the reports are generally satisfactory: the head-teachers are glad to get a good class of trainees in their schools. The students, acting as substitute teachers, are required to send in a weekly report of their work to the head-master of the Training School on a form for that purpose. Any attempt at laziness on the part of the student during this term, or any carelessness on the part of the head-teacher in rightly employing the students, is promptly counteracted by the reports forwarded to the head-master of the School. The head-master claims for the system that it is a departure from the old sterotyped lines of criticism and test lessons which only show comparative results; that it gives young teachers more scope for exercising their powers of originality; and that it tends to remove the weakness of imitation in teaching. As substitute teachers, the students get general practice, but, as a matter of fact, they are largely employed in training backward children, weak possibly in one subject, with the view to bringing them up to the standard of the whole class.

(*c*) *Co-education.*—Co-education exists with good results. No written law prevails pointing out what is expected of students in the matter of manners and morals. The home life and the previous high-school training, which are known from the certificate of admission, prove sufficient safeguards against any moral danger. The institution has the appearance of a well-conducted, happy, home.

(*d*) *The excellence of the black-board work.*—The amount and quality of the black-board work are worthy of notice. The coloured-chalk illustrations,—"panorama chalkettes" as they are designated—are simply beautiful. These sketches show to great advantage in a splendid class-room, wide and lofty, with a fine equipment of desks, apparatus, and slate panels.

(*e*) *The course and aim of Nature Study.*—The excellent science equipment, and excellent school garden, such striking features of Boston normal work, are wanting in this School, but there are fine cabinets and museums of natural products, plants in particular. The programme of Nature-study is given hereinafter, with a set of "Entrance Examination Papers" for January, 1903.

(*f*) *Wall Decorations.*—There were seen on the walls of the class-rooms and corridors excellent specimens of pictorial publications. The head-master believes with William Ordway Partridge that, "The influence of a picture is beyond human calculation. It is like the kind word fitly spoken; it can never die. Let us then unfold the whole nature of the child, and not a little corner of it. *It is just as important to hang reproductions of great paintings and frescoes upon the walls as it is to place books under the eyes of pupils.*"[1]

THE

[1] The *italics* are not in the original.

322

THE NEW YORK TRAINING SCHOOL FOR TEACHERS.

Elementary Science and Nature Study.

Sub-division:—School Material. Elementary Laboratory Methods. Advanced Laboratory Methods. Theory. Geography.

Advanced Laboratory Method in Detail:—1. Physiology. 2. Plants. 3. Animals. 4. Birds. 5. Insects. 6. The Sea.

Collection and Preparation of School Material.—(Eight weeks.)

The aim of this course is to teach pupils how to select and prepare material needed in the school-room, and to give them a small working set of such material. It is a course of applied manual work.

Magazine articles, selection and binding (25). Pictures, selection and mounting (25). Fifty topics on which to select pictures and articles. Library hand. Passe-partout work (7 pictures). Paper cutting and tearing (70 pieces). Paper tray; toy strawberry box. Scrap books. Seed mounts. Clay modeling (20 fruits and vegetables). Painting clay models.

Elementary Laboratory Methods.—(7 weeks.)

The technique of teaching things.—(*a*) The single object, specimen, or thing. The psychology of knowing things. Psychological technique of teaching things. (*b*) The correlation of idea and word; the descriptive word, sentence, and paragraph. Things and language; their relation, and meaning of that relation in mental development. (*c*) Technique of scientific questioning. (*d*) Technique of scientific description. (*e*) Scientific drawing; diagrams. (*f*) Science notes; note-book. (*g*) Plan for any lesson on a thing. (*h*) Systematic drill of Training School pupils in every detail of class-room presentation. Questions, answers, directions, &c.

This work is familiarly know as "the carrot course," or the "market, or kitchen-garden course." There are studied the fruits and vegetables in season, potato, apple, pear, grapes, pea, bean, carrot, onion, beet, lemon, orange, corn, wheat, mustard, spices, tea, coffee, sugar, and salt.

Advanced Laboratory Method.—(14 weeks.)

I. The technique of a demonstration. II. The technique of an experiment. III. The technique of planning a *set* of lessons. IV. The technique of planning a *series* of lessons. V. The technique of planning a *subject.*

Physiology (3 weeks).—The sole aim of physiology is to teach the technique of a demonstration; what is a demonstration; how it differs from an elementary laboratory exercise; how it differs from an experiment. Psychology of a demonstration. The hand: shape, bones, muscles, skin, sensitivity; technique of the study and teaching of the hand, with drawings, models, bones, &c.; drill in school-room presentation. The skeleton. Muscular system. Heart and circulation. Lungs. Eye: Methods of demonstration, &c. Digestion: Alcohol physiology. Suggestion and suggestibility. *Suggestion:* Class experiments producing visual and olfactory hallucinations. Power of suggestion for ill. Great suggestibility during childhood. Extreme danger of teaching physiology in the schools, owing to suggestion, and the high suggestibility among children. Teachers may produce more or less permanent nervous or organic disorders by suggestions of pathological symptoms, pains, aches, &c. Evil results likely to follow almost all school physiology. Evil results of alcohol physiology. Only the most expert and cautious teacher capable of avoiding improper or harmful suggestions in physiology. Work in physiology is safely confined to lessons on health; care of life and limb: care of teeth; eyes; cleanliness.

Plants.—The aim of the plant work is to teach pupils the technique of a botanical experiment: *i.e.*, the question asked of nature, its results, their interpretation. Problems solved by experiment: How does a seed sprout? How does a root grow? How is a plant nourished? How is water carried from soil to leaves? What is the function of a leaf? How is transpiration proved? What is the influence of temperature, moisture, &c., on plants? Observation, experiments, outlines. Reading, Coulter's "Plant Relations."

Animals.—Practical work in the planning and giving of lessons. Set of lessons. Reading, Jordan and Kellogg "Animal Life." Museum of Natural History, three hours.

Birds.—The object of the bird work is to give pupils practical sets and series of typical lessons on birds suitable for Grades II and III; and to give them practice in selecting birds for lessons, sets of lessons, or series. Ten lessons on birds, crow, duck, eagle, canary, robin, parrot, owl, cardinal, mocking-bird, wren. Nests and nesting habits. Models in clay of robin's nest. Barn swallow, &c. Eggs modeled in clay and painted. Forty birds in contrasted pairs. (*a*) Fifty or sixty birds in contrasted pairs or groups of families. (*b*) Birds' habits, lives, problems, anecdotes, books, pictures, &c. (*c*) Museum work at the American Museum of Natural History, outlines of lessons of the case specimens. Three hours spent in Museum.

Insects.—The principal aim of the work with insects is to show method of planning a subject from several points of view. (*a*) The insect world. (*b*) Insects as individuals with habits (*c*) and histories. (*d*) Insects in groups and families. (*e*) Insects injurious to man or his industries. Methods of collecting and preparing specimens. Three hours spent in the American Museum of Natural History. Fifteen hours field work. (With alternate classes, the work with insects is given at the end of the first, instead of second term, in order to place it near the summer vacation, during which the pupils do their fifteen hours field work.)

The Sea.—The aim of this work is to teach pupils the technique of developing a subject, in all its parts, by means of specimens, drawings, pictures, charts, models, &c. Stories of adventure and travel; ships and shipping; commerce; discovery. Supplementary reading; paper-cutting; records; scrap-books; ships' "logs," &c.

Theory.

1.—The City course studied.

The City course studied Work of the previous weeks applied. Outlines of lessons grouped in appropriate grades. Lists of objects and subjects suitable for each grade. Practical application of science methods to the work of various grades. Practice work in planning courses adapted to different grades. Critical examination of city course and comparison with an "ideal course."

2.—Psychology and metaphysics of science.

A. The nature "psychoses"; fears, hates, horrors, loves, affections, interests, fascinations, thoughts, fancies, &c., of natural phenomena. (This is a brief review of the work done at Clark University under Dr. G. Stanley Hall.)

B. (1) The thing-world and the thought-world. (2) Various theories of the relation of brain and mind, and their bearing on the two-fold experience. (3) The idea of causality. History of the idea of causality. Meaning of cause and effect. Scientific definition of a causal connection. (4) The idea of reality. Psychological elements of the idea of reality. Scientific reality, demonstration, proof. The meaning of proof. The hunger for certainty. (5) Debt of the world to science. Pre-scientific thought. Scientific thought. The great discovery of science is corroborable experience from which grew the ideas of *proof* and of *reality*, and which entailed a complete change in human suggestibility. (6) Suggestibility: Suggestibility in early man, middle ages, present time; savage peoples; the illiterate, the educated; children, youth, adults. Ways in which suggestibility has been decreased by means of science. Practical school-room application of the science-thought processes to a lessening of suggestibility. (7) Survey of the various schools of Nature study and science-teaching.

(*a*) The modified object lesson,—being the up-push from the kindergarten. (*b*) The modified science lesson, being the down-push from the high-school and college. (*c*) The meeting or mingling of these with some added pedagogics, gives the common Nature study of the middle grades (III to VII). (*d*) The practical school (Cornell leaflet). (*e*) The nature psychosis school (Clark University and Dr. Hall). (*f*) The process psychology-and-metaphysics-of-reality school.

Valid and invalid methods of Nature study. The critique of all method in science. Pedagogy of Nature study, strictly scientific, when governed by process psychology and a sane metaphysics.

Geography.

Geography.—(Eight weeks.)

Summary by weeks.—

1. Methods and history of methods. 2. The journey method. 3. The psychology of a map and map beginnings. 4. Development of simplest map. 5. Simple maps, and drawing to scale. 6. Advanced maps. 7. Practical technique (doll's-house book, &c.). 8. Study of two regions (Hudson river : Mt. Blanc). 9. Modeling. 10. Outlines of lessons and courses.

Geography in detail.—

1. Introduction. Historical sketch of geography. Historical sketch of methods of teaching geography. Critical survey of methods now in use. The topical method.
2. The journey method (described)—(*a*) methods, means, apparatus, books, illustrations, maps, railway guides, time-tables, advertisements, hotel advertisements, railway advertisements, pictures, wall charts, &c. ; (*b*) method of preparing way-plans, charts, journey-books, &c., for school use; (*c*) preparation of a typical journey by each pupil, with plans, charts, pictures, scrap-book, &c.
3. Map and map-making—(*a*) Psychology of map-reading, and the map idea, map interpretation, map construction, psychologically false methods of map-teaching, psychologically true methods ; (*b*) the simplest map.
4. The simplest map and its development—(*a*) map of a toy-house ; (*b*) map of a toy-garden (being a critical analysis of the map-idea and its technique in school-room development).
5. The simplest map (continued)—(*a*) beginnings of map-making, splint and chalk copies of the toy-house plans and garden plans, pencil copies ; (*b*) the beginnings of drawing maps to scale.
6. Advanced maps—(*a*) the toy-farm, maps and plans ; (*b*) advanced work in drawing to scale ; (*c*) connection between elementary Nature study and elementary geography ; (*d*) connection between elementary language work and Nature study and geography.
7. Pedagogical technique of elementary geography—(*a*) Practical methods of correlating geography and Nature study, as in paper-cutting, modeling, drawing ; (*b*) methods of correlating elementary language work and geography, the doll's-house book, the farm book ; (*c*) geographical representation, black-board drawings and sketches, sepia drawings, chalk studies on wall paper, "panorama chalkettes."
8. Special technical study of a region—(*a*) the Hudson River ; (*b*) Mount Blanc, sand models, maps, charts, pictures, &c.
9. Modeling—(*a*) sand modeling, individual trays, group work at sand table ; (*b*) clay modeling.
10. Outlines—(*a*) outlines of lessons on caves, mines, icebergs, glaciers, forests, oceans, &c. ; (*b*) outlines of lessons on countries ; (*c*) outlines of lessons on continents ; (*d*) outlines of subjects for different grades ; (*e*) the City course (studied) ; (*f*) The analysis of the City course, showing its possibilities ; (*g*) practical work in making outlines.

First Term.—School material, 8 weeks ; elementary laboratory methods, 7 weeks ; physiology, 3 weeks ; plants, 2 weeks.

Second Term.—Plants, 1 week ; animals, 1 week ; birds, 4 weeks ; insects, 2 weeks ; sea, 1 week ; theory, 3 weeks.

Third Term.—Geography, 8 weeks.

Examination for admission, New York Training Schools.—The following papers show the entrance conditions for the New York Training Schools. They are given in full for the purpose of exhibiting clearly the grade of the education :—

Department of Education.—The City of New York.

EXAMINATION FOR ADMISSION TO TRAINING SCHOOLS FOR TEACHERS.

Office of the City Superintendent of Schools, Park-avenue and 59th-street,
New York, 1 December, 1902.

In accordance with section 52 of the by-laws of the Board of Education, and the regulations prescribed by the State Superintendent of Public Instruction, under date of 1st August, 1899, an examination of applicants for admission to the Training Schools for Teachers of the city of New York will be conducted by the City Superintendent of Schools, beginning on Monday, 5th January, 1903, at 9 a.m.

The dates of the examinations in the various subjects specified in section D will be as follows :—

	A.M.	P.M.
January 5th	English.	History and civics.
January 7th	Mathematics.	Science.
January 8th	Greek.	Geography and drawing.
January 9th	Latin (9–12 o'clock) or French (10–1 o'clock).	French (1–4 o'clock) or German (1–4 o'clock, 2–5 o'clock).

Qualifications.

A. Each applicant for admission to a training school must be at least 17 years of age at the time of entrance.

B. All applicants for admission to training schools must subscribe in good faith to the following declaration :—

"We, the subscribers, hereby declare that our object in asking admission to [here insert the name of the training school, as, New York Training School for Teachers, or, Brooklyn Training School for Teachers] is to prepare ourselves for teaching, and that it is our purpose to engage in teaching in the public schools of the State of York at the completion of such preparation.

C. Before admission to this examination, each applicant must hold, as a minimum qualification, (*a*) a diploma of graduation from a High School or an academy having a four-years' course of study approved by the State Superintendent of Public Instruction, except in the cases of applicants graduated from an approved three-years' course prior to 1st July, 1899 ; or (*b*) a diploma from an institution of equal or higher rank, approved by the same authority, as provided under Chapter 1,031, Laws of 1895.

D. Applicants will be required to pass an examination in five of the following groups of subjects, namely, groups 1 and 2, and any three other groups :—

1. English	100
2. Mathematics (arithmetic, algebra, geometry)	100
3. History and Civics (Greek, Roman, English, and American History)	100
4. Geography (70 credits) } Drawing (30 „) }	100
5. Science (Botany, Zoology, Physiology, and Physics)	100
6. Latin, or French, or German	100
7. German, or French, or Greek	100

The subjects of examination in English will comprise grammar, rhetoric, and literature, founded on the following works :—

For reading and practice—Shakspeare's "Merchant of Venice," and "Julius Cæsar"; Addison's Sir Roger de Coverley papers in *The Spectator;* Goldsmith's "Vicar of Wakefield" ; Scott's "Ivanhoe" ; Coleridge's "Ancient Mariner" ; Carlyle's Essay on Burns ; George Eliot's "Silas Marner" ; Tennyson's "Princess" ; Lowell's "Vision of Sir Launfal."

For study and practice.—Shakspeare's "Macbeth"; Milton's "Lycidas," "Comus," "L'Allegro," and "Il Penseroso"; Burke's Speech on Conciliation with America ; Macaulay's Essays on Milton and Addison.

The examination in each of the foreign languages will include grammar, prose composition, and the translation into English of easy passages.

E.

E. Each applicant is required, when notified, to report for a physical examination to one of the physicians authorised by the Board of Education.

NOTE.—Under the regulations prescribed by the State Superintendent of Public Instruction, under date of 1st August, 1899, all applicants, irrespective of their standing in High Schools, must take the above examination.

IMPORTANT NOTICE.—Hereafter two years will be required to complete the course in either of the Training Schools of the City of New York.

WILLIAM H. MAXWELL,
City Superintendent of Schools.

Department of Education.—The City of New York.

EXAMINATION FOR ADMISSION TO TRAINING SCHOOLS.

January, 1903.

Science.

Time, 3 hours. Candidate's Number

NOTE.—Candidates must take Question 1 and *nine* other questions.

PHYSIOLOGY.

1. Describe the effects of alcoholic drinks on (*a*) the kidneys; (*b*) the arteries. Give reasons.

BOTANY.

2. (*a*) Describe the yeast plant and its method of growth; (*b*) Explain the use of yeast in bread-making.
3. Describe the characteristic vegetation of one moist area and one dry stony area of this locality.
4. Describe, with diagrams, the structure of some edible mushroom.
5. Give an analytic description of one of the following flowers:—Violet, pea, apple, wistaria.
6. Describe two modifications of plant structure by which cross-fertilisation is promoted.

ZOOLOGY.

7. Distinguish between protozoa and cœlenterata, and sketch an example of each.
8. (*a*) Mention two classes into which molluscs may be divided, and give an example of each; (*b*) Describe briefly three classes of insects, and name examples of each class.
9. Describe the stages passed through by a butterfly or a dragonfly.
10. Give an account of the starfish as to (*a*) external covering; (*b*) locomotion; (*c*) the organs of nutrition and their action.
11. State the distinctive characteristics of the cat family, and name three members of the family.

PHYSICS.

12. Show the relation between motion, velocity, and force. State Newton's laws of motion.
13. With which class of lever will a force of 100 lb. raise the greatest weight, the lever being 12 feet in length and the weight arm 1½ feet long? Prove your answer by a figure.
14. Make a drawing of a common force-pump and explain its action.
15. Describe the process of electrotyping.
16. Describe, with the aid of drawings, the construction of the compound microscope, and state the function of the eye-piece.

CHEMISTRY.

17. Distinguish between a mechanical mixture and a chemical compound. Describe an experiment in which both a mechanical mixture and a chemical compound occur.
18. Explain the following symbols and give the name of the corresponding compound:—H_2SO_4; NaCl; NH_2; KNO_3; CaO.
19. Define and illustrate (*a*) acids; (*b*) bases; (*c*) salts.
20. Distinguish between an oxidising agent and a reducing agent. Illustrate.
21. Describe an experiment showing the manufacture of (*a*) sulphuric acid, or (*b*) nitric acid. In either case write out the reaction which occurs.

Latin.

Time, 3 hours. Candidate's number

1. Translate into English:—

ASSASSINS OR DELIVERERS?

NOTE.—Cicero replying to Antony's charge that he (Cicero) was to blame for Caesar's murder, says, "If anyone is to blame, all honest men are to blame. Blockhead! why speak of Brutus with respect, and call me a rascal for having suspected that he was going to kill Caesar? Sleep off your debauch. Tell us plainly: are Brutus and the rest assassins or deliverers?"

Stillo, drip; *pugio*, dagger.

Tu autem, omnium stultissime, non intellegis, si, id quod me arguis, voluisse interfici Caesarem crimen sit, etiam laetatum esse *morte* Caesaris crimen esse? Quid enim interest inter suasorem *facti* et probatorem? aut quid refert, utrum *voluerim* fieri an gaudeam factum? Equis est igitur exceptis eis, qui illum regnare gaudebant, qui illud aut fieri *noluerit* aut factum improbarit? Omnes ergo in culpa; etenim omnes boni, quantum in ipsis fuit, Caesarem occiderunt. Aliis consilium, aliis animus, aliis occasio defuit: voluntas *nemini*. Sed stuporem hominis vel dicam pecudis attendite; sic enim dixit: "Brutus quem ego honoris causa nomino, cruentum pugionem tenens Ciceronem exclamavit: ex quo intellegi *debet* eum conscium fuisse" Ergo ego sceleratus appellor a te, quem tu suspicatum aliquid suspicaris; ille qui stillantem prae se pugionem tulit, is a te honoris causa nominatur? Esto; sit in verbis tuis hic stupor: quanto in rebus sententiisque maior! Constitue hoc, consul, aliquando, Brutorum, C. Cassii, Cn. Domitii, C. Trebonii, reliquorum quam velis esse causam; edormi crapulam, inquam, et exha a. An faces admovendae sunt, quae excitent tantae causae indormientem? Numquamne intelleges statuendum *tibi* esse, utrum illi, qui istam rem gesserunt homicidae sint an vindices libertatis?

2. In the passage in question 1, (*a*) explain the syntax of *morte*, *facti*, *nemini*, *tibi*.

(*b*) Why are *voluerim*, *noluerit*, *excitent*, in the subjunctive?

(*c*) What is the subject of the impersonal verb *debet*?

3.

3. Translate into English :

ANCHISES REVEALS TO AENEAS THE FUTURE OF ROME.

"Nunc age, Dardaniam prolem quae deinde sequatu
Gloria, qui maneant Itala de gente nepotes,
Inlustris animas nostrumque in nomen ituras,
Expediam dictis, et te tua fata docebo.
Ille, vides, pura iuvenis qui nititur hasta,
Proxima sorte tenet lucis loca, primus ad auras
Aetherias Italo commixtus sanguine surget,
Silvius, Albanum nomen, tua postuma proles ;
Quem tibi longaevo serum Lavinia coniunx
Educet silvis regem regumque parentem ;
Unde genus Longa nostrum dominabitur Alba.

Viden', ut geminae stant vertice cristae,
Et pater ipse suo superum iam signat honore ?
En huius, nate, auspiciis illa incluta Roma
Imperium terris, animos aequabit Olympo,
Septemque una sibi muro circumdabit arces
Felix prole virum :

Excudent alii spirantia mollius aera,
Credo equidem, vivos ducent de marmore voltus,
Orabunt causas melius, caelique meatus
Describent radio et surgentia sidera dicent ·
Tu regere imperio populos, Romane, memento
Hae tibi erunt artes ; pacisque imponere morem,
Parcere subiectis, et debellare superbos."

4. Explain the meaning of the last seven verses. (What is said to be the true work of Rome as compared with other nations ?)

5. Translate into Latin :

(*a*) The messengers whose arrival we had expected are here.

(*b*) The Consuls drew lots for (*sortiri*) the provinces : Gaul fell (*obvenire*) to the one, Spain to the other. Both (*uterque*) managed matters badly. Neither triumphed.

(*c*) Thou shalt not kill. Be not forgetful of thy duty.

(*d*) He said that Cicero was the most celebrated orator of the Romans.

(*e*) The captain who reconnoitered the roads had forty-eight foot-soldiers and twenty horsemen with him therefore, when 500 horsemen of the enemy advanced (*accedere*), he withdrew quickly into camp.

6. In the following passage, pick out ten words of Latin derivation, state the derivation of each, and give the literal meaning in the light of the derivation :—

The ascending pile
Stood fix'd her stately height ; and straight the doors
Opening their brazen folds, discover, wide
Within, her ample spaces, o'er the smooth
And level pavement : from the arched roof
Pendant by subtle magic, many a row
Of starry lamps and blazen crossets . . . .
. . . . . yielded light
As from a sky. The hasty multitude
Admiring entered ; and the work some praise
And some the architect : his hand was known
In Heaven by many a tower'd structure high,
Where sceptred Angels held their residence,
And sat as princes : whom the supreme King
Exhalted to such power, and gave to rule,
Each in his hierarchy, the orders bright.
. . . . . .
. . . . . Thus they relate,
Erring, ... —*Milton.*

History.

Time—Three hours. Candidate's Number

Note.—All candidates are to answer Nos. 16, 17, and 18. Of questions 1–15, seven only are to be chosen, of which two at least shall be in each group.

GREECE.

1. Draw an outline map of Greece, and on it locate Athens, Corinth, Sparta. Extend the map to indicate the position of the Hellespont.

2. State the probable location of ancient Troy ; and note from what source we get the common legendary account of the siege of that city. In what way has it been demonstrated in modern times that such a city as Troy existed ?

3. Give an account of the circumstances that led (*a*) to the Persian invasion of Greece ; (*b*) to the Grecian invasion of Persia.

4. Give a description of the drama at Athens in the time of Pericles, covering the nature of the plays, the theatre, the acting, and at least one other important point.

5. Mention two notable occasions in Grecian history illustrating "the incapacity of the Greeks for acting together." Show the relation of the events mentioned to the idea illustrated.

ROME.

6. What is the meaning of each of the following terms, as used in Roman history :—Consul, quæstor, client, patrician ?

7. For what is each of the following persons famous :—Fabius, Livy, Vergil, Attila, Seneca ?

8. State the cause, and give an outline account of the Conspiracy of Catiline.

9. Locate Pompeii and Herculaneum, and give a short account of their destruction. How has this catastrophe contributed indirectly to our knowledge of Roman history ?

10. What was the cause and what was the result of the battle of Pharsalia ?

ENGLAND.

11. Give an account of the Roman occupation of England, showing the mode of invasion, the length and the nature of the occupation, and the reason for the withdrawal of the Romans.

12. Give an account of the reign of William I, covering the following topics :—His treatment of his English subjects, the system of land tenure he established, and the nature and effect of the great survey.

13. State two events or conditions in England between 1492 and 1620, which determined its policy of exploration and settlement in America.

14. From what nation and by what means did England obtain Gibraltar? Mention some Mediterranean possession which England obtained subsequently.

15. Compare the government of England at the present time with that of the United States, as to the legislative body.

UNITED STATES.

16. What provision is made in the Constitution for (*a*) the power to declare war; (*b*) the selection of U.S. Supreme Court judges; (*c*) originating all bills for raising revenue?

17. Discuss the topic of the Louisiana purchase, giving (*a*) the location and extent of the tract bought; (*b*) the causes leading to the purchase; and (*c*) the name of the American statesman to whom we are chiefly indebted for this addition to our territory.

18. Mention three important events between 1850 and 1861 which tended to bring about the Civil War, and state the particular effect of each event.

Greek.

Time—Three hours. Candidate's Number

1. Translate into English: (25)

THE CHARACTER OF CYRUS: HIS GENEROSITY AND TACT.

Ὥρα δὲ πλεῖστα μὲν οἶμαι εἴς γε ἀνὴρ ἐλάμβανε διὰ πολλά· ταῦτα δὲ πάντων δὴ μάλιστα τοῖς φίλοις διεδίδου, πρὸς τοὺς τρόπους ἑκάστου σκοπῶν καὶ ὅτου μάλιστα ὀρφὴ ἑκάστου δεόμενον. καὶ ὅσα τῷ σώματι αὐτοῦ κόσμον πέμποι τις ἢ ὡς εἰς πόλεμον ἢ ὡς εἰς καλλωπισμόν, καὶ περὶ τούτων λέγειν αὐτὸν ἔφασαν ὅτι τὸ μὲν ἑαυτοῦ σῶμα οὐκ ἂν δύναιτο τούτοις πᾶσι κοσμηθῆναι, φίλους δὲ καλῶς κεκοσμημένους μέγιστον κόσμον ἀνδρὶ νομίζοι. καὶ τὸ μὲν τὰ μεγάλα νικᾶν τοὺς φίλους εὖ ποιοῦντα οὐδὲν θαυμαστόν, ἐπειδή γε καὶ δυνατώτερος ἦν· τὸ δὲ τῇ ἐπιμελείᾳ περιεῖναι τῶν φίλων καὶ τῷ προθυμεῖσθαι χαρίζεσθαι, ταῦτα ἔμοιγε μᾶλλον δοκεῖ ἀγαστὰ εἶναι Κῦρος γὰρ ἔπεμπε βίκους οἴνου ἡμιδεεῖς πολλάκις, ὁπότε πάνυ ἡδὺν λάβοι λέγων ὅτι οὔπω δὴ πολλοῦ χρόνου τούτου ἡδίονι οἴνῳ ἐπιτύχοι· τοῦτον οὖν σοι ἔπεμψε καὶ δεῖταί σου τήμερον τοῦτον ἐκπιεῖν σὺν οἷς μάλιστα φιλεῖς. πολλάκις δὲ χῆνας ἡμιβρώτους ἔπεμπε καὶ ἄρτων ἡμίσεα καὶ ἄλλα τοιαῦτα, ἐπιλέγειν κελεύων τὸν φέροντα· τούτοις ἤσθη Κῦρος· βούλεται οὖν καὶ σὲ τούτων γεύσασθαι.

2. In the passage in question 1, (*a*) account for the mood of *πέμποι, δύναιτο, νομίζοι, λάβοι*.(5)

(*b*) Explain the grammatical construction of *νικᾶν, ἐπιμελείᾳ, προθυμεῖσθαι, οἴνῳ, σου, τούτοις, τούτων*. (15)

(*c*) Illustrate from the passage the difference in meaning between the imperfect and the aorist. (5)

3. Translate into Greek: (15)

(*a*) He wishes to be wise. It is now in your power to show yourself a man. I went to one of those who seemed (participle) to be wise.

(*b*) I will seize the heights with the men whom I have. He showed this by what he did.

(*c*) It happened during (*i.e.*, within) the night. They were marching during the whole night.

(*d*) They asked whether they would give the pledges.

(*e*) If they had been good men, as you say, they would never have suffered these things.

4. Translate into English; (25)

CIRCE TELLS ULYSSES OF THE SIRENS.

Καὶ· τότε δή μ' ἐπέεσσι προσηύδα πότνια Κίρκη· | ταῦτα μὲν οὕτω πάντα πεπείρανται· σὺ δ' ἄκουσον | ὡς τοι ἐγὼν ἐρέω, μνήσω. δέ σε καὶ θεὸς αὐτός. |

Σειρῆνας μέν πρῶτον ἀφίξεαι, αἵ ῥά τε πάντας | ἀνθρώπους θέλγουσιν ὅ τέ σφεας εἰσαφίκηται. | ὅς τις ἀιδρείῃ πελάσῃ καὶ φθόγγον ἀκούσῃ | Σειρήνων, τῷ δ' οὔ τι γυνὴ καὶ νήπια τέκνα | οἶκαδε νοστήσαντι παρίσταται οὐδὲ γάνυνται, | ἀλλά τε Σειρῆνες λιγυρῇ θέλγουσ(ν)' ἀοιδῇ | ἥμεναι ἐν λειμῶνι, πολὺς δ' ἀμφ' ὀστεόφιν θὶς | ἀνδρῶν πυθομένων, περὶ δὲ ῥινοὶ μινύθουσιν | ἀλλὰ παρεξελάαν, ἐπὶ δ' οὔατ' ἀλεῖψαι ἑταίρων, | κηρὸν δεψήσας μελιηδέα, μή τις ἀκούσῃ | τῶν ἄλλων· ἀτὰρ αὐτὸς ἀκουέμεν, αἴ κ' ἐθέλῃσθα· δησάντων σ' ἐν νηῒ θοῇ | Χεῖράς τε πόδας τε | ὀρθὸν ἐν ἱστοπέδῃ, ἐκ δ' αὐτοῦ πείρατ' ἀνήφθω, | ὄφρα κε τερπόμενος ὄπ' ἀκούσῃς Σειρήνοιιν. | εἰ δέ κε λίσσηαι ἑταίρους λῦσαί τε κελεύῃς, | οἱ δέ σ' ἔτι πλεόνεσσι τόθ' ἁρμοῖσι διδέντων.

NOTES.—*αἰδρείη*, ignorance; *γάνυμαι*, rejoice; *ἀνήφθω* from *ἀνάπτω*; *μινύθω*, decay; *δέψω*, knead.

Write as poetry. The vertical lines indicate verse endings.

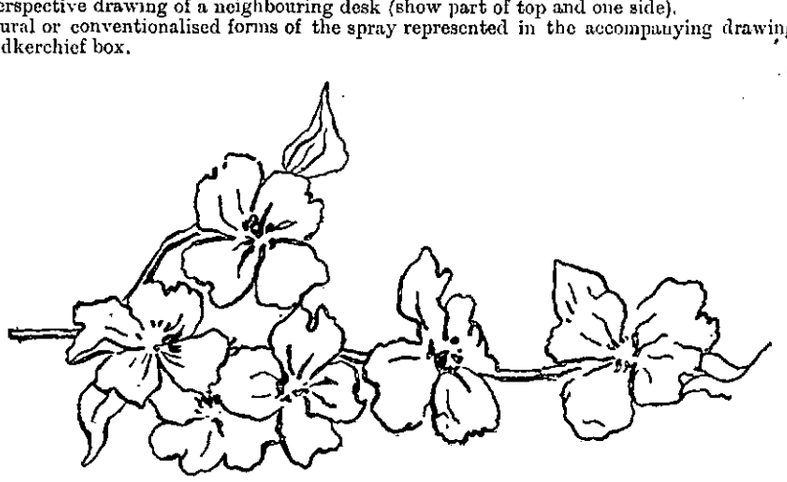
DRAWING.

Time—One and one-half hours. Candidate's Number

1. Make a working drawing of a handkerchief box, 8 in. x 4 in. x 6 in., including cover and one interior partition.

2. Make a perspective drawing of a neighbouring desk (show part of top and one side).

3. Using natural or conventionalised forms of the spray represented in the accompanying drawing, make a design for the top of a handkerchief box.



French.

Time—Three Hours. Candidate's Number

1. Translate into idiomatic English:—

"Allons, pensa Blanche, il faut que M. Paul Astier disparaisse."

C'était, en petit, le raisonnement des voleurs qui tuent pour plus de sûreté les témoins de leur crime; mais on n'escamote (make disappear) pas un grand gaillard de lieutenant comme une simple muscade (juggler's ball). Blanchette tint conseil avec elle-même, et discuta cinq ou six combinaisons insensées avant de s'arrêter à la bonne.

Elle s'était procuré, non sans peine, un dessin du lieutenant. C'était une caricature assez plaisante de M. Moinot, commandant du 2e bataillon. Paul avait dessiné un moineau becquetant une cerise, et le tout, vu à quelque distance, représentait admirablement le chef de bataillon et son nez. Ce pauvre commandant, vieux et excellent soldat, s'était fait

un

un nez flamboyant par sa faute. A part ce ridicule et ce défaut, il était très considéré et dans les meilleurs termes avec tout le monde. Il prisait fort Astier, qui le lui rendait bien, et qui pour rien au monde n' eût voulu lui causer de l'ennui ; mais on est jeune, on aime à rire, on se laisse aller aux entraînements de la malice, et, lorsqu 'on croit tenir une bonne plaisanterie, on n'a pas la sagesse de la garder pour soi. Ce dessin, fut porté à la pension des lieutenants un soir qu'on recevait des officers de passage. Tout le monde s'en amusa ; quelques jeunes gens en gaieté y mirent un mot de commentaire. Après ces jeux innocents, on parla d'autre chose, puis on alla au café, et la charge (cartoon) du commandant Moinot, un peu froissée, un peu tachée, resta sur un coin de la table. Un camarade de Paul Astier, le lieutenant Foucault, plia la feuille en quatre et la porta, sans penser à mal, à Mlle. Vautrin. Huit jours après, la jeune fille dit fièrement a son ennemi. "J'ai un dessin de vous, malgré vous" ; mais elle ne dit pas lequel. A ses yeux, le choix de sujet n'avait alors aucune importance.

Aujourd'hui c'est un autre affaire. Elle retourne à sa chambre ouvre un carton, prend la caricature, la signe du nom de Paul Astier en majuscules, la met sous enveloppe, écrit l'adresse du commandant, toujours en majuscules, et appelle le planton :

"Mon vieux Schumacker, lui dit-elle, va jeter cette lettre à la poste, et ne laisse voir l'adresse à personne. Quant à toi, je sais que tu ne la liras point, ton éducation s'y oppose."

Tout compte fait, pensa-t-elle, maître Astier en sera quitte pour quelques jours d'arrêts forcés, huit au moins, quinze au plus ; cela n'est pas la mort d'un homme. Dans huit jours, la veuve Humblot et sa fille seront lasses d'user leurs bottines sur le pavé pointu de Nancy. On leur prouvera qu'elles ont rêvé, et elles retourneront à leurs récoltes.

L'Album de Régiment, par E. About.

2. Translate into idiomatic English :—

LE CID.

Act V. Scene V.

D. Sanche, Chimène, Elvire.

D. Sanche.

1. Obligé d'apporter à vos pieds cette épee.

Chimène.

2. Quoi ! du sang de Rodrigue encor toute trempée !
3. Perfide, oses-tu bien te montrer à mes yeux,
4. Après m'avoir ôté ce que j'aimais le mieux ?

5. Éclate, mon amour, tu n'as plus rien à craindre ;
6. Mon père est satisfait, cesse de te contraindre ;
7. Un même coup a mis ma gloire en sûreté,
8. Mon âme au désespoir, ma flamme en liberté.

D. Sanche.

9. D'un esprit plus rassis .....

Chimène..

10. Tu me parles encore,
11. Exécrable assassin d'un héros que j'adore !
12. Va, tu l'as pris en traître ; un guerrier si vaillant
13. N'eût jamais succombé sous un tel assaillant.
14. N'espère rien de moi, tu ne m'as point servie !
15. Et, croyant me venger, tu m'as ôté la vie.

D. Sanche.

16. Étrange impression qui, loin de m'écouter .....

Chimène.

17. Veux-tu que de sa mort je t'écoute vanter.
18. Que j'entende à loisir avec quelle insolence
19. Tu peindras son malheur, mon crime, et ta vaillance ?

3. Explain, by citing the rule or principle, the following usages occurring in the above selection :—

(*a*) The tense of *aimais* (line 4) ; of *pris* (line 12), mood and tense of *eût succombé* (line 13) ; *écoute* (line 17).
(*b*) Why *trempée* is used, and not *trempé* (line 2).
(*c*) Why *servie* is used, and not *servi* (line 14).
(*d*) Why *que* is used, and not *qui* (line 11).
(*e*) Why the expression *tu m'as ôté la vie* is used, and not *tu as ôté ma vie* (line 15).

4. Arrange in tabular order the present and past participles, and the present and preterit indicative (third singular) of the following verbs :—*vivre, croire, falloir, courir, aller.*

5. Translate into French :—

All my life I shall recall that silent street, strewn with sleeping men, some lying at full length, others doubled up, their heads on their knapsacks. I still see those muddy shoes, those worn soles, those patched clothes, those youthful faces of brownish shade, those old set cheeks, those closed eyelids ; those great hats, those faded shoulder-straps, those pompons, those red-bordered woollen blankets full of holes, those grey cloaks, that straw scattered in the mud. And the great silence of sleep after the forced march, the absolute death-like repose ; and the bluish morning-twilight enveloping everything with its uncertain light, the pale sun rising in the haze, the little houses with the large roofs of thatch (chaume) ; and in the distance on two sides of the village, on the Altenberg and the Réepockel above the orchards and the hemp-fields (chènevières), the bayonets of the sentinels glistened among the last stars ; no, I shall never forget this strange spectacle ; I was quite young then, but such memories are everlasting.

6. Name five notable writers of French fiction, and five of French drama. State, approximately, the time in which each lived, and mention at least one of his chief works.

English.

Time—Three hours. Candidate's Number .

1. *Analysis* is not the business of the poet. His office is to *portray*, not to *dissect* . . . . If Shakespeare had written a book on the *motives* of human action, it is by no means certain that it would have been a good one. It is extremely improbable that it would have contained half so much able reasoning on the subject as is to be found in the "Fable of the Bees." But could Mandeville have *created an Iago ?* Well as he knew how to *resolve* characters into their elements, would he have been able to combine those elements in such a manner as to make up a man—a real, living, individual man ?—MACAULAY.

Make a topical outline of this paragraph.
Why are the last two sentences of the paragraph interrogative ?
Explain the meanings of the italicised words.

2. " *Thee, Shepherd,* thee the woods, and desert *caves*
With wild thyme and the gadding vine *o'ergrown,*
And all their *echoes,* mourn."

Give the syntax of the italicised words.
Rewrite the lines in natural prose order.

3. Combine the following sentences into (*a*) one simple sentence; (*b*) a complex sentence; (*c*) a compound sentence; (*d*) Which of your three sentences is the best? Why?

Milton's fiends are wonderful creations. They are not metaphysical abstractions. They are not wicked men. They are not ugly beasts. They have just enough in common with human nature to be intelligible to human beings.

4. *Lady Macbeth.*—Yet do I fear thy nature;
It is too full o' the milk of human kindness
To catch the nearest way. Thou wouldst be great,
Art not without ambition; but without
The illness should attend it: what thou wouldst highly,
That wouldst thou holily; wouldst not play false,
And yet wouldst wrongly win.

Give in simple prose the above analysis of Macbeth's character.
Show by references to incidents in the play whether or not this analysis was accurate.

5. Compare L'Allegro and Il Penseroso as to four of the following points: (*a*) The companions preferred by each; (*b*) the music suited to each; (*c*) the diverse daybreakings preferred; (*d*) the diverse kinds of literature preferred; (*e*) the diverse ways in which literature is to be communicated; (*f*) tastes as to natural scenery.

6. Quote five consecutive lines from *one* of the following, and mark the accented syllables of the quoted lines: "The Merchant of Venice," "The Rime of the Ancient Mariner," "The Vision of Sir Launfal."

7. Select *three* from the works named below, and tell, with reasons, what is the central thought of each of the three:—

(*a*) "Silas Marner."
(*b*) "The Princess."
(*c*) "Comus."
(*d*) "The Rime of the Ancient Mariner."
(*e*) "The Vision of Sir Launfal."

8. Write in a single paragraph a description of one of the following:—

(*a*) The Castle of Coningsburgh (in "Ivanhoe").
(*b*) Sir Launfal's castle.
(*c*) Portia's three caskets.
(*d*) The appearance of the court of justice while Portia is pleading with Shylock.
(*e*) The portrait of the Primrose family (from "The Vicar of Wakefield").

9. Outline an argument to prove or to disprove one of the following propositions:—

(*a*) If Addison had written a novel, on an extensive plan, it would have been superior to any we possess.
(*b*) As civilisation advances poetry necessarily declines.
(*c*) The education of the American colonists contributed no mean part toward the growth and effect of their untractable spirit.

Geography.

Time, Two and one-half hours. Candidate's Number

1. Compare the Appalachian and the Rocky Mountain system as to (*a*) extent; (*b*) contour; (*c*) climatic conditions.
2. Name three distinguishing characteristics of "glacial drift."
3. State the physiographic reasons for the growth of the following cities:—(*a*) Buffalo; (*b*) Portland, Oregon; (*c*) Buenos Ayres; (*d*) Batavia, Java.
4. Describe the forming of (*a*) deltas, (*b*) coral reefs.
5. (*a*) In January, the regions of lowest temperature are North-eastern Asia and Greenland. Give reasons. (*b*) Where, at the same time, are the regions of highest temperature? Give reasons.
6. Name one rainy and one rainless region, stating in each case the causes of these climatic conditions.
7. Under what conditions of temperature and moisture do the following plants thrive: Rice, wheat, cotton, palm-tree, pine-tree, and apple-tree?

Mathematics.

Time—Three hours. Candidate's Number

The necessary calculations should appear in all cases on the answer papers.

1. Find the exact answer:
   (*a*) $3{\cdot}6\frac{2}{7} \div {\cdot}003\frac{1}{3}$.
   (*b*) 4 lb. 8 oz. (avoir.) to decimal of a ton.
   (*c*) $16\frac{1}{8} - 4\frac{1}{12}$
   (*d*) $(\frac{7}{12} + \frac{5}{18}) \times 5\frac{1}{31}$

2. (*a*) Find the prime factors of 6006. (*b*) Find the least common multiple of 209,221,323. (*c*) Find the square root of ·07225.

3. (*a*) Find the circumference of a circle whose area is 78·54 sq. in. (*b*) If 3 men can do a work in 6 days, how many days will 2 men require? *Solve by proportion and by analysis.*

4. (*a*) What will $300 amount to in 2 years 5 months and 15 days, when placed at simple interest at 4½% per annum? (*b*) At what price must 4½% stock be bought to give the same rate on the investment as 6% stock bought at 60, no account being taken of brokerage?

5. (*a*) Reduce to lowest terms: $\dfrac{2a^2-5a+3}{a^2+a-2}$
   (*b*) Unite: $\dfrac{a}{a+b} - \dfrac{a}{a-b} + \dfrac{3a^2}{a^2-b^2}$
   (*c*) Find x: $4x^2 - x = 3$

6. (*a*) Rationalise the denominator of $\dfrac{2+\sqrt{3}}{2-\sqrt{3}}$
   (*b*) Find the quotient of $6\sqrt{27} \div 2\sqrt{3}$

7. (*a*) Find the two numbers whose ratio is 3 to 5, and whose sum is 128.
   (*b*) Solve for x and y:

$$\begin{cases} x^2+xy=12 \\ y^2+xy=24 \end{cases}$$

8. The diagonals of a parallelogram bisect each other. Prove.
9. Geometry.—Construction found in all Geometries. Construct a square equivalent to a given rectangle. State the principle on which the construction is based.
10. Prove: An angle formed by a tangent and a secant is measured by half the difference of the intercepted arcs.

CHAPTER XXXIV.

CHAPTER XXXIV.

The Training Schools of Canada.

[J. W. TURNER.]

Introduction.—Candidates for admission into Normal Schools in Canada must not be less than 17 years of age. The courses are professional and of short duration. The Province of Ontario has a class of training schools, in which candidates are prepared for lower grade certificates.

The Training School of Montreal.—The McGill Normal School, Montreal, is an institution for training teachers for the Protestant population of the Province of Quebec. The government of the school is in the hands of a standing committee, called the Normal School Committee, which, at the present time, is composed of five members of the McGill University, the Principal of the University being chairman. Candidates are not admitted to the elementary class until they have entered upon their 17th year of age, and in the case of the model class, not until they have attained their 18th year of age. The school has a fourfold course—(*a*) a Kindergarten Class; (*b*) Elementary-school Class; (*c*) Model school class; (*d*) class in Pedagogy. To enter on the course, candidates must either hold, or pass examinations for, the elementary school diploma, or have taken the entrance University certificate. Admission to the Kindergarten class is only granted to those persons who hold elementary diplomas, and show a special fitness for Kindergarten work. The course in the elementary class lasts about four months; in the other classes, nine months. Teachers in training, residing at home with parents or guardians, pay the sum of four dollars monthly for their training. The school is non-residential, but students in attendance, and away from their homes, are permitted to reside in specially approved boarding-houses. These boarding-houses are visited monthly by a committee of the staff, and special visits are made in case of sickness. Teachers in training are required to state to what denomination they belong, and arrangements are made with the ministers of Montreal to visit weekly the members of their churches, among the students, or to otherwise provide for their religious instruction. Punctual attendance at this weekly service is insisted upon, and, in addition, each student is required to attend public worship, at his own church, at least once every Sunday. The Principal of the Normal School holds a semi-sessional examination at Christmas for all but elementary grades. A certain standard is fixed, and all students reaching it are allowed to continue in their classes to the end of the course. A model school, consisting of a boys' school, a girls' school, a primary-school, and a Kindergarten, with experienced teachers in charge of each, is attached to the Normal School. The essential work of the School is *training to teach.* Lectures are given on the usual branches of school-management by the Principal, assisted by his staff and other teachers; model lessons are taken by the professors and teachers of the School, and by other experts, and criticism lessons by the students, in the presence of their class-masters, are conducted by the professors. The practice in teaching is obtained in the model school, where several hours a week are spent by each of the students. This has accommodation for 460 pupils, and has a staff of fifteen teachers. Pupils are received from 4 years of age and upwards, and special attention is given to manual-training, including cutting out and making up garments, and cooking in the girls' school; and Sloyd and wood-carving in the boys' school. Fees are charged in the model school at the following rates: Boys' and girls' model schools, $1.00 to $1.75 per month; primary schools and kindergarten, 75 cents to $1.00, payable monthly in advance. Certificates are issued for each of the courses.

Academy diplomas are granted by the Committee to graduates in Arts of Canadian or other British Universities who have qualified in Mathematics, Latin, Greek, and French, and who have passed satisfactory examinations in education and practical teaching at the Universities, or the McGill Normal School. The McGill Normal School provides a course of lectures on Pedagogy as a part of its regular work, and grants facilities for practice in teaching in the model school for a session of fifty half-days. The lectures are open to graduates in Arts, with the above-mentioned restriction; to undergraduates of the third year; and, with the permission of the Faculty, and the concurrence of the Principal of the Normal School, to those of the fourth year. The staff of the McGill Normal School is as follows:—Principal and Lecturer on Art of Teaching; Professor of English Language and Literature; Professor of French; Professor of Drawing; Assistant to the Principal, and Instructor in Mathematics and in Classics; Instructor in Vocal Music; Instructor in Elocution; Lecturer on Chemistry; Instructor in Penmanship and Book-keeping; Instructor in Kindergarten Methods; Lecturer in the Theory of Kindergarten and Transition Work; Instructor in Kindergarten History and Principles; Instructor in Calisthenics; Lecturer on Physiology and Hygiene; Lecturer on Physics; Director of Manual-training, Macdonald endowment; Teacher of Manual-training; Instructor in Cooking; Instructor in Sewing; Principal Secretary and Librarian.

Training Schools, Province of Ontario, Canada.—There are four kinds of training institutions in operation in the Province of Ontario:—

(*a*) County and City Model Schools.
(*b*) District Model Schools.
(*c*) Provincial Normal and Model Schools.
(*d*) Ontario Normal College.

The County and City Model Schools.—The Board of Examiners for every county, or the Trustees of any city, with the approval of the Minister of Education, have the power to establish a Model School for the professional training of third-class teachers. The Principal of the Public School, to which the Model School is attached, has charge of all Training School arrangements. Principals of County and City Model Schools must hold a first-class certificate from the Education Department, and must have had at least three years' experience as Public School teachers. Assistants, of whom there must be at least three in each County and City Model School, must be the holders of first or second class certificates. The period of training covers the last four months of the year, and during this time the Principal is relieved from all Public School duties, excepting the general management and supervision. In carrying out the Training School duties, he may employ the assistants of the Public School.

Candidates

Candidates for the Training Schools must produce certificates that they have been educated to the High School standard, and must not be less than 17½ years of age.

The course of study in the Model Schools consists of instruction in School Management; instruction in the Science of Education; instruction in the best methods of teaching all the subjects in the Public School Course of Study; instructions in the School Law and Regulations so far as they relate to the duties of teachers and pupils; instruction in Reading, School Hygiene, Music, and Physical Culture; and such practice in teaching as will cultivate correct methods of presenting subjects to a class and develop the art of school government.

During the last week of the session the Boards of Examiners conduct examinations for the purpose of determining the candidates' practical skill as teachers. The final examination of the Education Department is limited to School Management, the Science of Education, Methods, School Hygiene, and the School Laws and Regulations.

The District Model Schools.—The District Model Schools, established by the Minister of Education in different parts of Ontario, train candidates for District Certificates. No school can rank as a District Model School unless the teaching staff consists of at least three teachers, viz., a Principal holding a first-class certificate, and at least one of his assistants holding a second-class certificate. Teachers in training at District Model Schools take the course of study and the final examinations prescribed for Public School Leaving Examinations. The subjects prescribed for the course are Reading, Drawing, Geography, Botany (or Agriculture), Writing with Book-keeping and Commercial transactions, English Grammar, English Literature, Arithmetic and Mensuration, English Composition, and History.

Candidates for District Certificates must be at least 18 years of age. Their course of professional training is similar to that prescribed for County Model Schools.

Provincial Normal and Model Schools.—There are three Normal Schools in the Province of Ontario, situated in London, Ottawa, and Toronto.

Two sessions are held each year—the first from January to June, the second from August to December.

Any Teacher who holds at least the Junior Leaving standing (High School standard), and who has taught a Public School successfully for one year, or who, after passing the County Model School Examination, has taught under the supervision of the Inspector of a city having a City Model School six months thereafter, may be admitted as a Normal School student.

The course of study is Psychology and Science of Education; History of Education and School Management; Methods of Teaching; Practice Teaching in the Model School.

Written examinations, and examinations in practical teaching, are held at the end of each session by the Education Department.

Ontario Normal College.—The Normal College is open each year from October to May. Any person who has Senior Leaving standing (advanced High School standard), or who is a graduate in Arts of any University in the British Dominions, and who will be 18 years of age before the close of the College year, may be admitted as a teacher in training.

The course of study consists of lectures in Psychology, the History of Educational Systems, the Science of Education, the best methods of teaching each subject in the High School course of study, School Management; instruction in Reading, School Hygiene, Writing, Drawing, Stenography, Physical Culture; practice teaching.

Each Lecturer explains and illustrates the best method of dealing with each branch of his department as it should be taught in the different classes of a High or Public School, and, as far as possible, explains and justifies his methods on scientific principles, giving model lessons for classes in different stages of advancement.

Written and oral examinations for testing knowledge of methods and teaching ability are held during the session by the staff of the College. At the end of the session the teachers in training undergo an examination conducted by the Education Department.

Teachers' Certificates.—The Minister of Education, on the report of the Education Department, may issue the following certificates:—

(*a*) District Certificates limited to localities where there is a scarcity of teachers.
(*b*) Permanent Third-class Public School Certificates to teachers of ten years' successful experience.
(*c*) Second-class Public School Certificates to persons who attend a Normal School one term, and who pass the prescribed examinations.
(*d*) Normal College Interim Certificate to persons who have passed the final examinations of the Normal College. The Normal College Interim Certificate entitles the holder, if under 21 years of age, to teach in a Public School only, and if over 21 years to teach in a Public or High School.
(*e*) First-class Public School Certificate.—After two years' successful experience as teacher, the holder of a Normal College Interim Certificate is entitled to a permanent certificate as a First-class Public School teacher, or as a High School assistant.
(*f*) Certificate of Principal of a High School or Collegiate Institute.—Any graduate in Arts in any University in the British Dominions, who holds a High School Assistant's Certificate, and who has taught successfully three years (two of which at least were spent in a High School) is entitled to a certificate as Principal of a High School or Collegiate Institute

NOTE.—Teachers of ten years' successful experience, who hold Normal School Certificates, and who have the necessary academic standing, may sit at the final examination of the Normal College without attendance at lectures.

Persons graduating with Honors from any University in the British Dominions, who have spent two years as registered students in post graduate work in any British, European, or other University approved by the Minister of Education, may sit at the final examination of the Normal College without attendance at lectures on furnishing satisfactory evidence of having taken such post graduate course.

CHAPTER XXXV

CHAPTER XXXV.

French Primary Normal Schools: Plan of Studies and Teaching Programmes.

[G. H. KNIBBS.]

1. *Introductory.*—As far back as 1887 the French system of educating primary teachers for their profession was well advanced, and their *plan of studies and teaching programmes* shew that they aimed at highly educating them.

A comparison of the following outline with our own programmes will shew how much better the provision for the training of the French teacher is than that afforded by the Training Colleges of our State.

It is this fact that enables the teacher in other lands to advance his pupils to a much higher plane in the primary school than is possible with us, for he is *thoroughly* prepared for his work; how thoroughly, the sketch hereunder is intended to illustrate.

As in other countries, the instructor of the aspirant to the teaching profession is a specialist in his subject or group of subjects.

2. *General.*—In terms of the decree of 18th January, 1887, Art. 82, the teaching in the primary normal schools of France, either for male or female teachers, comprises:—

(1.) Moral and civic instruction.
(2.) Reading.
(3.) Writing.
(4.) French language and elements of French literature.
(5.) History, specially that of France up to the present time.
(6.) Geography, particularly that of France.
(7.) Calculation, the metric system, elementary arithmetic with applications to practical operations. The conceptions of algebraic calculation and of book-keeping.
(8.) Elementary geometry.
(9.) Surveying and levelling, for masters only.
(10.) The elements of physical and natural science, with their principal applications.
(11.) Agriculture, for male teachers; horticulture.
(12.) Domestic economy for female teachers.
(13.) Drawing.
(14.) Music and singing.
(15.) Gymnastics; and for male teachers, also military exercises.
(16.) Manual work for male teachers; needlework for female teachers.
(17.) Pædagogy.
(18.) The study of one foreign language.

This instruction is given in the normal schools for teachers conformably to the programme hereinafter. The division of the subjects is so made that the hours of study in class in each year shall not exceed in the mean a total of twenty-five hours per week in these normal schools for teachers. Out of this, fifteen hours per week in the first year, thirteen in the second, and twelve in the third, are given to literature, the balance of the time being occupied by scientific teaching and drawing, etc.

The division of the subject is governed by the year and by the course, conformably to the following table:—

Subjects of Instruction.	Hours—Total as per week each year.		
	I.	II.	III.
Literary subjects—			
Psychology, ethics, pædagogy	2	2	2
French language and literature	5	4	4
History and civic instruction	3	3	3
Geography	1	1	1
Writing	2	1	.....
Modern languages (with conversation)	2	2	2
Total number of hours in literary subjects	15	13	12
Scientific subjects—			
Mathematics	3	4	4
Physics and chemistry	2	2	3
Natural science and hygiene	1	1	1
Drawing and modelling	4	4	4
Theoretical agriculture	.....	1	1
Total number of hours in scientific subjects	10	12	13
Other subjects—			
Manual agricultural work	5	5	5
Gymnastic and military exercises	3	3	3
Singing and music	2	2	2

At least five hours each day must be devoted to personal work at lectures and at preparations, etc. There are, however, no courses on Sunday nor on Thursday afternoons.

Students of the second and third years are often exercised, either in class or in conferences, in the oral teaching of each one of the above subjects. Under the direction of the Professor they make a *précis* of the lesson or lecture, explain a French text, correct an exercise, exhibit a question in the course, or give the results of personal work.

The pupils of the third year give, morever, lessons of about half-an-hour or more before the professors and fellow-students, upon a subject of teaching, or of a method, selected by the student and accepted by the Director. These lessons are criticised by the other pupils, the criticisms being completed or corrected by the professors and Director.

The Director sees that no part of the teaching of the normal school misses the end to which it ought to be directed, and that the different professors endeavour to make the students acquire the intellectual and moral qualities indispensable to the teacher.

He recommends them to avoid investigation of mere subtle and curious details, which would cause the teaching of the normal schools to fail in respect of its proper practical and professional character.

He satisfies himself that the written tasks of the students are carefully corrected and annotated by the professors, and that sufficient time is given throughout the courses to interrogation and recapitulation.

He proscribes the use of manuals, etc., and in general everything else which might tend to encourage mere mechanical work and the substitution of efforts of memory for efforts at reflection.[1] He takes care in all courses of the normal school, and practice in the adjunct school or practising school, to make considerable study of the methods and processes proper for primary teaching.

3. *Psychology, Ethics, and Pædagogy.*—To these subjects two hours per week are devoted during each of the three years. The thoroughness with which they are treated is indicated by the following syllabus, translated literally from the official programme:—

First Year.

Elementary Conceptions of Psychology.

Object of Psychology.—Its relation with pædagogy and ethics. General description of the human faculties. *Physical activity:* movement, instinct, and bodily habit. Sensibility: pleasure and pain. Physical sensibility: wants and appetites. (Shew that intemperance is an appetite whose violence is increased through satisfaction.) Moral sensibility. Family sentiment. The social and patriotic sentiments. Sentiment of the true, beautiful, and good. Religious sentiment. Passion. *Intellect.*—Conscience. The senses. Natural and acquired perceptions. Memory and imagination. Attention, abstraction, and generalisation. Judgment and reasoning. The principles of proof. (Insist upon the temporary or permanent injury which is done to the intellectual faculties by alcoholic drinks.) *Will:* liberty and habit. (Shew that the will is able to prevent intemperance and even to vanquish it, and that the abuse of alcoholic drinks inevitably enfeebles the will.)

Conclusions from Psychology.—Duality of human nature. Mind and body. The animal, intellectual, and moral life.

Applications of the conceptions of Psychology to education. Physical education. General hygiene. Essential nature of temperance. Games and exercises of children. Gymnastics. *Intellectual education.* Development of the intellectual faculties at different ages. Application to various orders of knowledge. Education of the senses. Little exercises of observation. The part played by memory and imagination, and by judgment and reasoning, and their culture. Method: its various processes. Induction and deduction. Method of teaching. Special study of processes applicable to each part of the programme. *Moral education.* Natural diversities of instincts and characters. The modification of character and formation of habits. Cultivation of sensibility in children. Education of the Will. Discipline: its recompenses and penalties. Emulation.

Second Year.

Theoretical Ethics.—Principles.

Introduction.—Object of ethics. *Moral conscience.*—Instinctive discrimination between good and evil: how it is developed by education. *Liberty and responsibility.* The conditions, degrees, and limits of responsibility. This essential human attribute destroyed by intemperance. Obligation and duty. Characters of the moral law. Insufficiency of personal interest, as a moral basis. Insufficiency of sentiment as a single principle of ethics. Dignity of the human being. (Shew that it is compromised and may even be annulled by inebriety.) *Moral sanctions.*—Relation between virtue and happiness. The individual sanction. (Moral satisfaction and remorse.) Social sanctions. Higher sanctions; the future life and God.

Practical Ethics.—Applications.

Individual duties.—Their foundations. Principal forms of self-respect. Individual virtues: temperance; prudence; courage; respect for the truth, for one's word, etc. *Duties to one's family.*—The family: its moral and social importance; domestic duties. *General social duties.*—The law. Mutual relation of individuals. Division of the social duties: those of justice and those of charity. *Legal duties.*—Personal respect in regard to life, liberty, honor, reputation, opinions and beliefs; in regard to property, the sacred character of promises, and of contracts. *Civic duties.*—The State; the foundation of public authority. National sovereignty: its legitimacy; its limits; liberty of conscience; individual liberty; property. Exercise of liberty. Universal suffrage. Its agents. The legislative, executive and judiciary powers. The duties of citizens. Patriotism. Obedience to the law. Taxation. Military service. The vote. School obligation. (Shew that alcoholism leads to the forgetting and the violation of duty towards the family and towards social life.)

Third Year.

The first trimester (quarter) is devoted to a recapitulation of the courses of the first and second years.

Practical Pædagogy and School Administration.

Pædagogic Organisation.—Classification of pupils. Programmes. Distribution of time. Preparation. School-books, etc. *Discipline.*—Control of class. Rewards and punishments. The several authorities charged with the oversight and direction of public-schools. The relations of the teacher to each of them. Departmental regulations concerning public-schools. Laws, decrees, circulars, regulations, etc. Special lecture and commentary of the organic law of 30th October, 1886, and of the decree of 18th January, 1887. The principal pædagogues and their doctrines. Analyses of their most important works.

Conceptions of Political Economy.

The production of wealth. The agents of production. Material, labour, economy, capital, property. Circulation and distribution of wealth. Exchange, money, credit, wages, interest. Consumption of wealth, productive and unproductive. Alcoholism: its influence in impoverishing and reducing to misery the individual and his family. Its effect on public wealth; the cost of alcoholism to France. Other effects, criminality, suicide, accidents at work. The question of luxury. Expenses of the State. Taxation. The Budget.

4.

[1] *Real knowledge* is what is aimed at—not merely memory knowledge; that is to say, the material has to be mentally *digested*, and become organically assimilated. This explains why science is learnt *practically*, and not in a purely literary way, and why the *rationale* of everything has to be understood.

4. *The French Language.*—To this subject five hours a week are given in the first year, and four hours in both the second and third years, the teaching comprising:—

The reading aloud of classic selections, the most important passages being learned by heart. Written and oral analysis of the readings. The rational study of the French Grammar. Dictations, oral exercises in respect of orthography, and of grammatical and logical analysis. Exercises in composition are also undertaken, and the general conceptions of the history of literature are treated in the third year, one hour a week being given thereto.

5. *History.*—To this subject three hours a week are devoted in both the first and second year. The work done in the three trimesters is as follows:—

First Trimester.—Aperçu of ancient history. World known to the ancients. Egyptians, Assyrians, Babylonians, Israelites, Phœnicians, Carthaginians, Persians. Monuments which remain to us of these peoples. Greece. The heroic age. Sparta and Athens. The Median Wars. Age of Pericles, Socrates, Epaminondas, Philip of Macedonia. The conquests of Alexander. The reduction of Greece to a Roman province.

Second Trimester.—Roman history. Rome. The Roman kings. The Roman Republic. The tribunes. Struggle between the Plebeians and the Patricians. Conquests of the Romans. Civil Wars. Cæsar. Augustus and his successors. The Antonines. Diocletian. Constantine and the Christian Church. Julian Theodosius.

Third Trimester.—The Middle Ages. The Gauls before the Roman Conquest and under the Roman Empire. Introduction of Christianity. Principal invasions of the Germans in the 5th and 6th centuries. The Franks. Mahomet. Conquests of the Arabs. Charlemagne; his wars and administration. Treaty of Verdun. Incursion of the Normans. The feudal régime in France and Europe. The Empire and the Papacy. Quarrels as to the Investitures. The Crusades. Conquest of the English by the Normans. The Plantagenets. The Magna Charta. Progress of urban and rural populations. The communes and the royal power in France. Louis VI, Philip Augustus, Saint Louis, Philip the Fair.

It should be explained that in dealing with historical conceptions regarding the East, and Greece and Rome, less attention is paid to the matter of wars, dynasties, the foundation or dismemberment of empires, etc., than to the manners, beliefs, monuments, and great works of the peoples of antiquity, and the part they have played in the development of civilisation. Legends, anecdotes, the biographies of celebrated men, descriptions, and literary history, hold a considerable place in the elaboration of the programmes above indicated. In each lesson a certain time is devoted to the reading of selections from the works of the great writers, historians, and travellers of antiquity.

Second Year.

First Trimester.—The Hundred Years' War. The States General. Charles V and Duguesclin. Joan of Arc. Reconstitution of the territorial union of France. Progress of the royal authority in France with Charles VII and Louis XI, in Spain with Ferdinand and Isabella, in England with the Tudors. Germany and Italy at the end of the Medieval period. The Turks in Europe. Modern period. The great inventions from the 14th to the 16th century. Maritime discoveries. Colonial Empire of the Portuguese and the Spaniards. The French navigators. The Renaissance in Italy and France. The wars of Italy. Rivalry of Francis I and Charles V.

Second Trimester.—The Reformation. Religious wars in France. Pacification of France under Henri IV. Prosperity of England under Elizabeth. Power and decadence of Spain under Philip II. The Thirty Years' War. Gustavus Adolphus. Treaties of Westphalia. Richelieu. Mazarin. La Fronde. Louis XIV; his government and wars. Intellectual domination of France in the 17th century.

Third Trimester.—Revolution of 1688. Charles XII and Peter the Great. Austria and Prussia in the 18th century. The Parliamentary Government in England. The progress of English power in India and America. American War of Independence. The United States. The dismemberment of Poland. France under Louis XV and Louis XVI. The philosophers and economists. Turgot. The States General. The scientific and geographical discoveries in the 18th century.

6. *History and Civic Instruction.*—During the third year, three hours a week are given to history during two trimesters, and, in one trimester, two hours a week, the balance of one hour being devoted to civic instruction. History is first dealt with, the courses being as follow:—

Third Year.

First Trimester.—Political and social state of France in 1789. The French revolution; principles, institutions. Coalitions against the French Republic. The treatise of Basle, of Campo-Formio, of Luneville, and of Amiens. The eighteenth Brumaire. The Consulat. Development of the administrative organisation.

Second Trimester.—The Empire. Struggle against Europe. The treaties of 1815. The Holy Alliance. The restoration. The charter. The war of Hellenic independence. Emancipation of the Spanish colonies.

Third Trimester.—The revolution of 1830. Foundation of the kingdom of Belgium. Insurrection of Poland. Establishment of constitutional government in Spain and Portugal. Great political and economical reforms in England. The Progress of England and Russia in Asia. Conquest and colonisation of Algeria. Revolution of 1848. Second Republic. Universal suffrage. The 2nd December, 1851. Second Empire. The Eastern question, and the Crimean war. Foundation of the Kingdom of Italy. The growing influence of Prussia in Germany. Dissolution of the Germanic Confederation. The United States. War of secession. Abolition of slavery. War of Mexico. The Suez canal. War of 1870. The German Empire. Treaty of Frankfort. Republican Constitution of 1875.

Civic Instruction.

The State. The Constitution. The President of the Republic. Ministers, Senate, and Chamber of Deputies. Mode of nomination; privileges. The laws. Ministerial decrees and orders. The Council of State. *Justice.* The Court of Cassation. The civil and criminal tribunals. The dministrative, military, commercial, and university tribunals. *Public force.* Obligatory military service. *Scholastic obligation. Taxation.* Various forms of taxation. Establishment and recovery. The Budget. Public debt. The annual income. *The Department.* Prefect. The Council of Prefecture. The General Council. Mode of election; privileges. The departmental budget. Departmental buildings, roads, ways, canals, etc.; primary instruction. The departmental council. Cantonal delegations. *The Arrondissement.* The Deputy-Prefect; the Council of the Arrondissement. *The Canton. The Commune.* The Municipal Council; mode of election; privileges. The Mayor; the Deputies. The communal budget. Primary instruction; communal buildings, vicinal and rural roads. The subvention of the department and of the State.

7. *Geography.*—One hour a week is devoted to geography. The following sketch will give a sufficient indication of the scheme of teaching:—

First Year.

Elementary notions of cosmography. General study of the earth. Explanation of geographical terms. Reading of globes and charts. General study of continents and oceans. The form of the continents The great orographical and hydrographical systems. Atmospheric and marine currents. The races of mankind. Equatorial, tropical, and polar regions.

An extensive sketch is given of political geography, for the entire world, and some outlines of the principal geographical explorations.

In the second year a general study is made of Europe, covering its physical description, with a special study of each of its States, its physical, administrative, agricultural, and commercial geography. Its various governments and religions are also treated of. The

The third year is specially devoted to the geography of France. It covers its physical geography, its shores and frontiers, its orography and hydrography. Its historical and administrative geography, its old and new divisions, its central, departmental, and communal governmental administrations are treated from the geographical point of view. Agricultural, industrial and commercial geography, its great roads of communication, and its railroads, canals, and maritime service are treated. Similarly in regard to Algeria and the French colonies, the products of the soil, the importations and exportations being further referred to.

8. *Arithmetic, the elements of Algebra and Book-keeping.*—To these subjects two hours per week are devoted throughout the three years.

Arithmetic (First Year).—The treatment of Arithmetic calls for no special comment; it may simply be mentioned that the characters of divisibility by such numbers as 2, 5, 4, 25, 3, 9, and 11 are considered, and abbreviations in mental and written calculation.

Higher Arithmetic (Second Year).—The properties of products and quotients, of prime numbers and their relations, of irreducible fractions, of the least common denominator of several fractions, of periodic fractions, of the generating fraction, are treated.

Algebra.—The rules of algebraical calculation, numerical equations of the first degree and problems concerning the same are considered.

Algebra (Third Year).—The resolution of the equations of the second degree with one unknown, the applications of Algebra to questions of arithmetic and geometry, arithmetical and geometrical progressions, the use of logarithmic tables, and the methods of applying logarithms to compound interest and annuities, constitute the scheme of treatment of this subject.

Book-keeping.—The mode of keeping books in single and double entry, the principal provisions of the commercial code in regard to commercial accountancy, are the subjects treated under this heading.

9. *Geometry.*—To this subject one hour per week during the first year, and two hours per week in each of the second and third years are given. It should be mentioned that continental conceptions of geometry are very different from the conceptions of those who imagine that the subject is to be learned by reading several books of Euclid.

First and Second Years.

Plane Geometry.—Two first books of Legendre, proportional lines, similitude. The length of a circumference, measurement of areas.

Solid Geometry.—Straight line and the plane. Dihedral angles. Polyhedra. The measurement of volumes. The cylinder, cone, and sphere.

Third Year.

Trigonometry.—Brief summary of trigonometry, exclusively from the point of view of the solution of triangles.

Surveying, Plan Drawing, etc.—Topographical polygons. Survey of details. Drawing of the plan upon paper. Scale, conventional signs. The plane-table and surveying-compass.

Field-surveying.—Operations on the ground and measurement of areas. Surveying problems. Cadastral plans. Levelling, level, etc. Register of levels. Contours. Sketch plans. Scale of slope. Plans and topographical charts. The reading of topographical charts. Chart of the French Etat-major. Exercises in the field. Topographical journeys.

10. *Physics and Chemistry.*—Two hours a week are devoted to Physics and Chemistry during the first two years, and three hours per week during the third year. The professors are required to make their instruction essentially practical and experimental in character, and to give it a somewhat agricultural turn. Great importance is attached to the more interesting applications in hygiene, domestic economy, industry, agriculture, and particularly Meteorology.[1]

Physics.

First Year.

Gravity and Hydrostatics.—Direction of gravity. Centre of gravity. Weight. Balance. Specific weight. Determination by the flask method. The free surface of liquids in equilibrium. Pressure within and upon the walls of vessels. Communicating vessels. Applications. The hydraulic press. The principle of Archimedes. Ordinary areometers of constant weight. General properties of gases. Atmospheric pressure. Barometers. Mariotte's Law. Manometers. Pneumatic apparatus. Pumps, syphon. Aerostats.

Acoustics.—Production of sound. Propagation of sound; the measure of its velocity, in air, liquids, and solids; its reflexion; echo; timbre; musical intervals.

Second Year.

Heat.—Dilatation of bodies through heat. Mercury and alcoholic thermometers. Thermometric scales. Definition of coefficients of dilatation. Ordinary application. Thermal conductivity of various bodies. Clothing. Metallic fabrics. Flow of heat in liquids and gases. Marine currents. Wind. Ventilation. Draught of chimneys. Change of state in matter. Fusion, solidification, solution, crystallisation. Evaporation of air and in a vacuum. Saturated and non-saturated vapours. Maximum tension. Definition of the hygrometric state. The condensation hygrometer. Clouds and fogs, rain, snow, hoar-frost, glazed-frost, dew, white-frost. Evaporation. Ebullition. Distillation. Experimental ideas of calorimetry. Refrigerant mixtures. Production of cold by evaporation. Manufacture of ice. Principal modes of heating in domestic economy and in industries. The idea of steam-engines. Installation of and observation with thermometers. Maximum and minimum temperatures. Atmospheric pressure. Diurnal and annual variation thereof. Wind. Squalls and their progress. Rotation of wind. Charts of the weather and of storms. Weather prediction. Cyclones and waterspouts.

Third Year.

Electricity and Magnetism.—The production of electricity by friction and by influence. Electric apparatus. Leyden jar. Atmospheric electricity. Principle of the cell. Electric current. Electric lighting. Electro-typing. Magnets. Poles. Declination and inclination of the magnetic needle. Compasses. Galvanometer. Magnetisation by electric current. Electro-magnet. General idea of the electric telegraph. Induction. Telephone.

Optics.—Propagation of light. Umbra and penumbra. Properties of plane and spherical mirrors, experimentally established. Refraction, prisms, total reflection, mirage. Experimental demonstration of the properties of lenses. Magnifying glass, microscope, astronomical telescope. Decomposition and recomposition of light. Spectrum from various luminous sources. Rainbow. Radiant heat.

Conceptions of Physical Mechanics.—Motion. Inertia. Force. Enunciation of the laws of falling bodies. Atwood's machine. Definition of mass; measure of a force by the motion it produces. Simple machines. Lever, pully, work done in motion, and in resistance. The kilogrammeter. Horse-power. Conception of the equivalence of mechanical work and heat.

Chemistry.

[1] The advantage of public-school teachers having a proper knowledge of meteorology, and of their being in charge of meteorological observing stations throughout New South Wales, will at once suggest itself. Not only would their observations be of value in the study of the drought conditions of this territory, but their little equipments would serve to arouse an intelligent interest in the matter on the part of their pupils. It is much to be deplored that this and other similar opportunities have not been taken to increase our knowledge of this State and its general conditions.

CHEMISTRY.

First Year.

Water, its Analysis and Synthesis.—Hydrogen, oxygen, air, its analysis. Nitrogen. Combustion. General conception of chemical combination. Disengaged heat. Change of properties. Principles of chemical nomenclature and notation. Acids and bases. The oxides of nitrogen. Nitric acid. Ammonia. Laws of chemical combination as regards weight and volume. Chlorine, hydrochloric acid. Iodine. Sulphur. Sulphurous, sulphuric and sulphydric acids. Phosphorus, phosphoric acid, phosphoretted hydrogen. Carbon, carbon monoxide, and dioxide, Silicic acid.

Second Year.

Metals, their general properties, alloys. Salts, their general properties, laws of their composition. Berthollet's laws. Chemical Equivalents.—Potassium and sodium, potash and soda. Marine salt. Artificial soda. Nitrate of potassium. Powder. Calcium and magnesium. Lime, calcium, carbonate, sulphate, and phosphate. Aluminium, alumina, alum. Silicates, clays, etc. Potteries. Glass, lime, mortar, cement. Iron, zinc, oxides, sulphides, sulphates, carbonates. Conceptions in regard to the metallurgy of iron, cast-iron, wrought-iron, steel; tin, copper, lead; oxides, sulphates, carbonates. Mercury, silver, gold, platinum.

Third Year.

Summary of ideas regarding the composition, analysis and synthesis, of organic substances, and the classification of these according to their chemical function. Carbides of hydrogen. Gaseous carbides, acetylene, olefiant gas, marsh gas. Liquid and solid carbides, benzene, naphthalene, anthracene. Turpentine, petroleum. Alcohols, ordinary alcohol and fermentation (wine, beer, cider). Testing of the alcohols. Ethers, ordinary ether. Glycerine, neutral fatty bodies, soaps, stearine candles. Glucose, cane-sugar, milk-sugar. Dextrine. Starches and farina. Gums. Cellulose, ligneous, application to the manufacture of paper. Phenol. Acids, acetic, oxalic, lactic. Fatty acids. Alkalies, artificial alkalies (aniline). Ideas concerning colouring matters. Dyeing and printing with materials. Vegetable alkaloids (morphine, quinine, strychnine). Amides, Urea, indigo. Albumin and its congeners (casein, fibrin, gluten). Gelatin. Eggs. Milk. Blood. Animal flesh. Preservation of wood, of hides (tanning), of foods.

In dealing with chemistry, the professor selects as a basis for his demonstration such experiences as turn up in ordinary life, and refers to the applications of chemistry to local industries and to agriculture, etc. In order that the students may follow in the second year lessons in agrology, references are made to the constituent substances in vegetation, and particularly to substances employed as manures.

11. *Natural Science and Hygiene.*—To these subjects one hour per week is given in each of the three years.

BOTANY.

First Year.

Description and Structure of the Organs of Plants.—Cellules, fibres, vessels, laticiferous vessels. Roots, ordinary and adventitious roots. Stem, its character in the dicotyledons, monocotyledons, and acotyledons. Rhizomes, bulbs, tubers. Leaves, their structure and form. Floating and submerged leaves. Transformation of leaves. Arrangement upon the stems, stipules. Buds. Generalities concerning propagation by layering, budding, and grafting. Flowers. Perianth, calyx, corolla, stamens, pollen, pistils, ovum, nectary, nectar. Unisexual flowers, monœcious and diœcious plants. Various modes of inflorescence. Bracts, involucres, buds, prefloration. *Functions.* Nutrition, function of chlorophyll, fixation of the carbon, absorption, transpiration, exhalation. *Fecundation.* Crossed fecundation, hybrid. Germination. *Classification.* Division into three classes, dicotyledons, monocotyledons, and acotyledons. Distinctive characters of the principal families of each. Indication of the most remarkable (the most useful and most dangerous varieties are to be specially referred to).

ZOOLOGY.

Second Year.

Human Anatomy and Physiology.—Conceptions concerning the principal anatomical elements. Digestion. Teeth, alimentary canal, its functions. Respiration, organs of, mechanical and chemical phænomena connected therewith. The larynx and voice. Circulation, blood, lymph, chyle, the heart, the arteries and veins, capillary vessels, lymphatic glands. Absorption. General conception of the phenomena of assimilation. Secretion and execretion. Skin and kidneys. Innervation, nerve cellules and fibres. Cephalo-vertebral centre. Nerve, sensory and motor. The senses, touch, taste, smell, hearing, sight. Locomotion, skeleton and its articulations, muscles, walking leaping, running, swimming.

Classification of animals.—The vertebrates. General characters (rapid examination of the principal anatomical apparatus and its function). Division into classes. Anellides. General characteristics and divisions. Similarly for molluscs. Radiolaria, protozoa. Succinct conceptions regarding the infusoria.

GEOLOGY.

Third year.

Generalities concerning the principal geological phænomena of the present time. The utilisation of these for the explanation of ancient geological phænomena. Origin of the igneous and stratified or sedimentary rocks. Metamorphic rocks. Mountains and their relative ages. The principal igneous rocks. Veins and loads. Stratified or sedimentary rocks. Fossils and their utility in determining different strata. Division of the sedimentary strata into primary or transition, secondary, tertiary, and quaternary series. Their distinctive characters, and characteristic fossils. (The geological constitution of the locality is to be taken by way of illustration.)

HYGIENE.

Twenty lessons of an hour each.

Water.—Various kinds of potable water. Spring water, river water, and well water. Spring water is the only pure water, the others may be contaminated; mode of contamination. Means of purifying potable water; filtering and boiling. *Air.* The quantity of air necessary in houses, etc. Dangers of confined air, renewing of the air, ventilation, the neighbourhood of marshes.

Foods.—Principal adulteration of the principal solid and liquid foods. Alcoholic drinks. Fermented drinks (cider, beer, wine); action of these and the injury to health through their abuse. Alcoholic drinks with essential oils (absinthe and other pretended aperient and digestive liqueurs); serious dangers of their use. Intoxication and alcoholism, the influence of alcoholism of parents upon the health of children. Dangerous foods; parasites and infectious germs (trichinosis, leprosy, anthrax, tuberculosis). Putrified foods; poisoning by pork, sausages, etc.

Contagious diseases.—What is a contagious disease? Example, a typical disease and simple demonstration. Anthrax, experiments of Pasteur. Rapid sketch of the principal contagious diseases peculiar to man. Prophylactic measures. Disinfection.

Fœcal matters.—Means of evacuation, mode of preventing spreading, preservation of streams from pollution. The diseases transmitted by fœcal matters; typhoid, cholera, etc.

The healthy home.—A healthy school-house (application of precepts derived from the preceding). Air, water, latrines, etc.

Diseases contracted at school.—Ringworm, itch, several examples of contagious diseases. Eruptive fevers (small-pox, measles, scarlatina).

Vaccination and re-vaccination. Mortality through small-pox.

Hygiene of infancy.—The newborn and his feeding. Popular prejudices. Milk. The dangers that arise from a tuberculous cow.

Some diseases of animals.—Hydrophobia, glanders, bovine pest, anthrax. Slaughtering of animals. Burial.

12. *Modern Languages.*—Two hours a week for the whole three years are devoted to the study of modern languages, and a third hour is deducted from other studies, and devoted specially to conversation. The professor of languages is instructed never to lose sight of the fact that the languages have to be taught, and they, above all, must be spoken. Some features worthy of special mention are:—The special care taken in regard to pronunciation, the actual practice in the language in every task, the essentially practical character of the grammatical teaching. The accustoming of the students to make redactions on simple subjects, to write letters in familiar style, etc. They receive lessons in calculation, in the foreign tongue, and engage in conversations upon geography, travel, subjects borrowed from common life, housekeeping, manual work, life of plants and animals. In each of the three years songs in the foreign language are also learnt, and extracts from foreign pædagogical journals are read.

13. *Agriculture.*—An hour a week in the second and third years is devoted to teaching in agriculture, the complete course being about forty lessons, viz., about twenty lessons of an hour and a half for each of the two divisions.

AGRICULTURE, ZOOTECHNICS, AND RURAL ECONOMY.

Second Year.

Agriculture.—Study of the soil and of the means of modifying its chemical composition and physical properties (manuric and amelioration, irrigation, drainage, working of the soil). Special crops (cereals, leguminous plants, forage plants, industrial plants). Rotation of crops.

Zootechnics.—Feeding. Different breeds of horses, cattle, sheep, pigs. Rural economy. Constitution of landed property. Method and capital of exploitation. Conceptions of agricultural book-keeping.

HORTICULTURE.

Third Year.

General conceptions, site, preparation of the soil, planting. Special tree culture. Vine, peach, apricot, cherry, plum apple, pear, rose, etc. Concerning grafting. The kitchen garden.

14. *Drawing.*—Four hours a week in each of the three years are given to drawing.

First Year.

mitative drawing.—Principles of ornamental drawing; straight lines, circles, regular polygons, rose-stars, geometrical curves of various forms, ellipses, spirals, etc.; curves borrowed from the vegetable kingdom; stems, leaves, flowers. Copy of mouldings representing ornaments in a slight relief. Drawing from impressions and reliefs. (*a*) Purely geometrical ornaments, mouldings, ovolos, ogees, beads, dentils, etc. (*b*) Ornaments borrowed from the vegetable kingdom, leaves, flowers, fruits, palms, boughs, etc. Succinct notions in regard to the various orders of architecture. Elementary drawing of the human head, its parts and proportions.

Geometrical Drawing.—Drawing upon paper with instruments. Geometrical figures consisting of straight lines and circles. Application to decorative designs. Parquetry, tiles, windows, panels, ceilings. Conceptions of geometral drawing. Relief of geometrical solids and simple objects. Groups of carpentry and joinery work, arches, furniture, etc. Principles of washing in smooth tints.

Second Year.

Recapitulation of the first year's work.

Imitative Drawing.—The elements of perspective. Perspective representation in outline, and then with shadows, of geometrical solids and in common objects. Drawing from fragments of architecture. Pedestals, bases and capital of columns, pilasters, cornices. Drawing from copies the various parts of the human body, head, arm, legs, feet, hands, etc. Conceptions in regard to the general structure and proportion of the parts of the human body in relation to the whole.

Geometrical Drawing.—Conceptions in regard to the straight line and plane in space, and in regard to their projections. Projection of geometrical solids of simple objects. Copy and reduction of plans of buildings and machines; parts of a building; elements of machines. Practical ideas in regard to tinting; conventional tints.

Third Year.

Recapitulation of the studies of the year just ended.

Imitative Drawing.—Shadow-drawing from fragments of architecture, pedestals, bases and capitals of columns, consoles, vases, etc. Friezes; the *ensemble* and details of the Doric, Ionic, and Corinthian forms of architecture. Drawing of ornamental plants, animals, and figures from sketches and reliefs. Drawing of the human figure from sketches and reliefs, the detail and the whole figure.

Geometrical Drawing.—Drawing of buildings and of machines. Relief of an edifice and the principal details of its construction. Sketches and fair copy to a definite scale, also of specially selected machinery, having several parts. Copying and reducing plans of topographical charts, and exercising in the tinting of plans and charts.

15. *Vocal and Instrumental Music.*—Two hours per week in each of the three years is devoted to music, vocal music taking half an hour twice a week, and instrumental music the same. The instruments learnt are the organ and piano.

First Year.

Elementary principles of music. Pronunciation and delivery. Vocal emission. Respiration. Classification of the voice. Intoning exercises on the major and minor scales in the simple measures. (Keys of C, G, F, major and the relative minor). Easy reading. Execution of simple pieces. Elementary exercises on the organ or piano.

The studies of the second year are simply a development of the preceding, and include part-singing.

In the third year chorals are sung, and an elementary study of accompaniment, and of simple harmony applied to school-songs is made. The piano or organ exercises are continued, and a sketch is given of the history of music and of the principal works of composers.

16. *Gymnastic and Military Exercises.*—Three hours a week are devoted in each year to gymnastics, excluding the time given to military exercises. It is unnecessary to sketch these in detail, but it may be pointed out that in order to prepare male teachers for an examination for the certificate of competency to teach gymnastics, with an intelligent understanding of the sciences bearing upon the subject, courses are frequently given of eight or ten lessons by professors of natural science and the school-doctors. The examination is oral, and covers the following ground:—

(i) Summary of the mechanical conceptions applicable to the mechanism of animals. Conception of inertia and of force. Weight, centre of gravity, conditions of equilibrium of a body which rests upon a plane.

(ii) Organs of motion in man. (*a*) Passive organs, the bones, their form, structure, and composition. Articulation, and synovial membranes. (*b*) Active organs, the muscles, their form, structure, and properties; tendons.

(iii) Special hygiene. The functions of the body in their relations to gymnastics. Digestion, circulation, respiration, functions of the skin. *Influence of gymnastics upon physical and moral health.* Necessity of regulating gymnastic exercises. Hours and places suitable for the lesson, according to the season and state of the atmosphere. Suitable clothing for gymnastic exercises. First aid to be given during gymnastic exercises, and before the arrival of the doctor.

17. *Manual Work.*—Three hours a week are given in each of the three years to this subject.

First Year.

Work with paper and cardboard.—Weaving, folding, cutting out, and pasteboard cutting, in connection with the teaching of drawing of geometrical forms, etc. Stitching and binding a book.

Wood-work.—simple exercises with the following tools:—(*a*) Ordinary saw, spoke-shave, rasp, file, and plane; (*b*) various saws and shears, and ordinary tools. Application to the manufacture of ordinary objects.

Iron-work.—Curves of iron-wire bent to geometrical forms. Applications, ornaments, common objects. First exercises with the file.

Modelling.—Modelling in slight relief from sketches and from nature (leaves).

Second Year.

Wood-work—Recapitulation of first year's work. Sawing, planing, applications, mitreing (angles of 90, 45, and 60 degrees), notching, tenon, and mortise. Application to the manufacture of useful objects. First exercises in wood-turning.

Iron-work.—Filing, chiselling, drilling; such applications as the folding-rule, square, etc. Forge-work. Drawing out, pointing, flattening.

Modelling.—Series of geometrical ornaments from sketches, such as would be useful in a primary school. Moulding of the better modellings. Principal architectural mouldings. Several exercises from models of the official collection; such as Greek fillets, dentils, beadings, palm-leaves, etc., etc. Plaster cuttings. Principal geometrical solids.

Third Year.

Wood-work.—Planing, various exercises in joinery, carving, etc. Application to making useful objects and tools. Wood-turning; principal forms, application to a common object.

Iron-work.—Continuation and useful application of the lessons of the second year. Forge; continuation of elementary exercises, curving on the flat, and generally, soldering and brazing. Beating out and tempering of chisels, etc.

Modelling.—New series of simple ornaments borrowed from the vegetable kingdom and suitable for the primary school, the moulding of the best examples. Several exercises from the models of the official collection, star forms, friezes, branches, roses, acanthus leaves, ogees, etc. Plaster-cutting. Simple illustrations of elementary stereotomy. Simple sculpture on plaster or wood.

18. *Course for Women Teachers.*—The courses for women teachers are practically the same, excepting the substitutions previously indicated. The only subject to which special attention need be drawn is domestic economy, to which one hour a week is given in the third year. This practically concerns housekeeping, as the following will shew:—

Housekeeping.—Organisation and care of a dwelling-house. Care of furniture, of material generally, and linen; washing and ironing; food, nutritive value of various foods, and hygienic composition of a meal; housekeeping accounts.

It may also be mentioned that in connection with needlework certain pædagogic directions are given in which it is indicated that this work aims at completing personal education of the schoolmistress, from the point of view of manual skill and general development of taste. The gymnastics are, of course somewhat modified.

19. *General Remarks.*—The preceding outline of the course of study undergone by the primary French schoolmaster or schoolmistress is a sufficient indication of the breadth and excellence of their culture. It will at once be recognised that the educational provisions made in their training colleges is calculated to send them forth better equipped than with us, a comparison with the subjects of examination for the highest grade in the service leads to the same opinion. It ought further to be borne in mind that during these studies in the normal school the contact is with specialists and enthusiasts in each department of knowledge, who have had a still better education.

During the Commissioners' stay in Paris, ladies were seen teaching and giving demonstrations in science subjects, such as chemistry, etc. Both men and women have a grace of manner—personal address—that was all that could be desired, and their enthusiasm in their work seems remarkable. One naturally asks, is not this the natural result of the higher class of teaching they receive, and the development of a recognition of the true importance of their professional work?

A staff so educated is qualified to teach in a higher sense than is possible for mere children, half-educated and immature, however well disposed. And the only way to achieve equally good results is by a similar education of our teachers.

CHAPTER XXXVI.

CHAPTER XXXVI.

The Training School System of France.

[J. W. TURNER.]

Introduction.—In 1900, there were in France eighty-seven normal schools for males, and eighty-five for females, attended by 7,736 students, the sexes being about equal in point of numbers. The schools are free and residential. The non-residential training college system has been tried, and, in the opinion of the French educational authorities, has proved a failure.

Supply of Candidates.—Candidates for positions in the training schools of France must hold the brevet élémentaire. This certificate is only a record of elementary work, and the examination for it embraces the subjects of the upper primary school. It is from these schools that many of the public school teachers come; and the more advanced scholars, who remain on in their fifteenth and sixteenth years, with a view of becoming teachers, receive from their masters some preparation for a further qualifying examination.

Entrance Examination.—Candidates must be 16 years of age on the 1st of October of the year in which they present themselves. The entrance examination is competitive, and is conducted by an examining board appointed by the Rector. The examination is divided into two parts:—

(*a*) A test in dictation, writing, arithmetic, composition, drawing, to prove eligibility. Candidates, who pass this test successfully, attend a training school for a week at their own expense. While in the training school, they are under the strictest observation of their future masters, who acquaint themselves with the moral and intellectual qualities of the candidates, not only in regard to what they know, but what they are capable of learning, and ascertain, as far as possible, the good and bad points of their character. Great stress is laid upon morals, character, physical fitness, personal appearance, deportment, and in the general summing-up of a candidate's qualifications, these points have much to do with his position on the list of those recommended for admission.

(*b*) (1) Oral examination in French, arithmetic, history and geography of France, general geography, elementary, physical, and natural science.

(2) Outlines of two lessons, literary and scientific, heard in the practising classes of the training school, and prepared half-an-hour after the lesson has been given.

(3) Music—primary school work; sight test in reading easy piece; words and sol-fa. Ability to play an instrument considered in the results.

(4) Physical exercises; the test is the work done in the highest form of the primary school.

Candidates are not required to teach before an Inspector.

Admission to Training Schools.—A list of successful candidates is drawn up according to examination results, and appointments made as far as vacancies will allow. The Rector of the academy is in charge of all appointments. When admitted to the training colleges, the candidates are known as pupil-teachers, a name which indicates that they must learn the art of teaching at the same time that they are increasing their knowledge and preparing themselves for their future duties.

Examination in training.—The course of training is three years, and the pupil-teachers are known as belonging to the first, second, or third year. Examinations are held annually, and those who fail to pass, forfeit their rights to remain in the training schools. These may join the ranks of the *Stagiaires*, and, if they have attained the age of 18 years, may be employed as teachers in the smaller schools. At the end of the three years' course an examination is held for the brevet supérieur, which is a literary certificate. It is not necessary to pass this examination to be employed as a teacher, but the certificate is required for higher positions in the school service.

Difficulties in getting best candidates.—The difficulty of getting the best youths in the training schools is just as great in France as in England and New South Wales. The causes militating against a good supply are:—

(a) The one-year term of military service demanded.

(b) More remunerative openings, consequent upon the development of schools of commerce and industry.

(c) The slowness of advancement in the teaching service.

Intelligent,

Intelligent, well-educated, healthy lads turn aside from the training colleges, and the supply is practically drawn from the poorest districts of the State. The Government of France is beginning to recognise that it is not getting the best material for the training schools, and already an upward movement has set in. Additional grants for education have been made, with a view to improve this weak spot in the service.

Lesson for New South Wales.—There is a very important lesson here for the public of New South Wales to learn. The best youths of this State turn aside from the teaching profession, because of greater attractions in other careers, and the slowness of advancement. Those who join the Public Service prefer to enter, not as pupil-teachers, but as cadets or junior clerks, because, in the latter positions, they receive higher emoluments. Again, in the Public Service outside the Department of Public Instruction, promotion among the juniors is more rapid than junior teachers ever experience. The following is not an isolated example:—Three years ago, two boys entered the Public Service of New South Wales, one as a pupil-teacher, the other as a cadet in a Construction Department. Both received professional instruction, and both advanced satisfactorily. The pupil-teacher, to-day, is paid £57 per annum: the cadet, £150 per annum. The cadet is worth every penny of his salary; but what is to be said for the pupil-teacher? Is the work of qualifying for a teacher worth so much less than that of one who is qualifying for engineering, or any other form of construction work? Again, the teacher who prepared the cadet for his examination, who has spent nine years in some of the largest city schools, who is capable of managing large classes of boys, even of taking charge of a school with hundreds of pupils, who is a trained teacher and a graduate of the Sydney University, is paid £120 per annum. It is a well-known fact, too, that several of our young trained teachers, dissatisfied with their rate of advancement and prospects, have left the Department of Public Instruction for more remunerative employment and better positions in other branches of the Public Service. Our young teachers—those serving their apprenticeship, and those who are working as ex-students doing assistants' duties—are paid much below their actual teaching value.

The Practising School, Douai.—To each training college in France there is attached a practising school under the direction of a master or mistress, who is responsible to the Director of the training school. The Douai training school is for females, and its practising school provides for four classes under a mistress and an assistant—a maternal or infant class, elementary, middle, and superior. Six students visit the practising school one week at a time twice in the year. First-year students are not in the school during the first quarter; in the second quarter they are engaged in clerical work, correcting exercises, keeping school registers; and in the third quarter they are allowed to take a class under supervision. During two days part of the students' time is spent in listening to lessons, and watching the management by the mistress and her assistant; on the other three days the students take charge of the classes, and become responsible for the discipline and teaching. In the second and third years, under the direction of the mistress of the practising school, students are made more familiar with the art of teaching and class management. Criticism lessons of the students' work are held daily. While in the practising school, the students' ordinary training school studies are suspended, in order that they may devote their whole time and attention to the education of the classes during their period of practical work.

Training College, Auteuil.—The training school at Auteuil is for male students. In this institution the practical teaching is obtained during half-day attendances at the practising school. The object of the short attendances is to prevent too great interference with the continuity of the regular training school course. A student gives only one lesson daily in the week in which he is in the practising school, the remaining lessons are given by the regular teachers whose methods and management the student is called upon to watch. Each student returns to the practising school about every six weeks over a period of two years, and makes in all about sixty half-day attendances.

Child Study.—A practice in Auteuil deserving of special mention is the study by the students of a single individual character. On the first day of the student's attendance in the practising school, one pupil is assigned to him for purposes of observation intellectually and morally. The student's estimate of his pupil's character forms a report of several pages, which is handed to the Director of the training school at the end of the week.

Criticism and other lessons.—Between 4 and 5 o'clock every day the Director and his staff criticise the lessons that have been given, and lay out work for the following day. The lessons to be given are carefully outlined and co-ordinated with previous instruction. By these means, pupils in the practising school suffer but slightly from the frequent change of instructors. Model lessons are given twice a week by students of the third year. The staff consists of two literary and two science masters, and special teachers are employed for certain subjects. There is a master or teacher for every twelve students in attendance.

Director's Qualifications.—Directors of training colleges are appointed from the ranks of Primary Inspectors, and must hold the Certificate of Aptitude. Candidates for directorships must be at least 30 years of age.

Superior Training Schools.—France has two superior training schools in which candidates qualify for positions as teachers in upper primary schools and normal institutions. Candidates between the ages of 19 and 25 are admitted on a competitive examination. Each candidate must hold the brevet supérieur or the diploma of bachelor from a secondary school. The entrance examination, as in the elementary training schools, is divided into two parts—oral and written—but the standard set is much higher. The curriculum provides for literary and scientific training. The course in Fontenoy-aux-Roses extends over three years; in St. Cloud, over two years. Both are residential and free. Candidates admitted enter into an engagement

engagement to serve the State as teachers for a term of eleven years, dating from their admission into the training colleges. Practical training is obtained in the schools of Paris. During their second year students visit the public schools—maternal and primary—and obtain ideas in the art of teaching and class management. While thus engaged they are visited by the Primary Inspectors and by the masters of the training schools, who report on their skill, ability, and character, to the Minister of Public Instruction through the Director of Primary Education.

The curriculum of the ordinary training schools in France is appended.

Curriculum of Training Schools, France.—The curriculum of the training schools consists of two parts, viz., literary and scientific.

The literary part comprises—Psychology and ethics, the theory of pedagogy, the French language, history, geography, and a foreign language.

The scientific part comprises—Arithmetic, geometry, algebra, physics, chemistry, natural history, manual work, and drawing.

In addition to these subjects of fundamental importance, agriculture, singing, and gymnastics are taught.

Psychology, Ethics, Pedagogy.—Two hours a week, during each of the three years, are devoted to this instruction, which, because of its importance, is entrusted to the director or directress of the school. The first year's programme embraces elementary ideas of psychology, together with their application to pedagogy. The teacher first of all discusses physical activity, then feeling, intelligence and will, and considers the duality of man's nature, his animal and spiritual existence. He then passes, connectedly, to an investigation of the rules suitable to man's physical education, as well as to that of his intellect and free will.

The Second-year Course.—The Second-year Course is designed to give the theory of morality, its principles and sanctions, and practical morality in its applications to the individual, family, society, State.

The Third-year Course is devoted to a revision of the courses in psychology and ethics. In addition, there is a course of practical pedagogy and school administration, a history of pedagogy, confined to the chief pedagogues, with an analysis of their chief works, and several lessons in political economy on the production, circulation, distribution, and consumption of wealth.

French Language.—Instruction in French includes — (1) Explanation of passages read, and recitation; (2) a course of grammar, with practical exercises, such as dictation, analysis, derivation, composition of words; (3) exercises in composition, and ideas of composition and of style; (4) some ideas of the history of literature—third year only. Five hours a week in the first year, and four hours in the second and third years are devoted to this instruction. The passages explained or learnt by heart are taken from the best works of the great classical writers. The students must, in addition, do certain reading, on their own account, of passages indicated by the teacher or selected by themselves under his direction, and give an analysis of them, either *viva voce* or in writing.

History.—The programme covers Universal History, from the most remote antiquity to our own days. Three hours a week are given to it. The historical ideas of antiquity (in first year, first and second quarters) have less to do with the facts, dynasties, foundation or dismemberment of the Empires, than with the character, the beliefs, the monuments, the great works of the nations of antiquity, and the part those nations have played in the progress of civilisation.

In each lesson a certain time is set aside for the reading of passages, chosen from the works of the greatest of the ancient writers, from those of modern historians and accounts of travel.

The Middle Ages and Modern Times are then studied in the same spirit, greater emphasis, however, being placed upon the chief events as approach is made to the present day. (Third quarter of the first year and the whole of the second year.)

The third year is devoted to contemporary history from 1789 to the present day. With this part of the work is associated the civic instruction.

Geography.—The course in geography (one hour a week in each of the three years) aims at giving during the first year, elementary ideas of cosmography, the reading of the globe and of maps, the general study of the continents and oceans, the human races, and the different parts of the world, except Europe, with the special study of the principal States of Asia, Africa, America, Oceana, and the chief geographical explorations. In the second year attention is given to Europe, France omitted.

In the third year, France and its colonies.

The blackboard map is the basis of the instruction. The students are practised in copying the drawing of the sketch, and in carefully drawing a map which reproduces as closely as possible the teacher's lesson.

Mathematics.—The arithmetic course takes two hours a week in the first year, and one hour in the second year. It embraces work in whole numbers, fractions, and decimals, ideas on products and quotients, on the prime numbers, on ratio and proportion, on repeating decimals, square root, &c.

In the second year the elements of algebra are taken up:—The rules of algebraical computation, the solution of quadratic equations of one unknown, with their application to questions in arithmetic and geometry, the progressions, the use of the tables of logarithms, compound interest, and annuities.

The students receive also ideas of book-keeping (one hour a week in the third year), single and double entry. They are likewise made acquainted with the chief provisions of the commercial code bearing on commercial accounts.

Finally, they study the elements of plane and solid geometry (first and second years), and those of trigonometry for the solution of triangles (third year). They are practised in the drawing up of plans, in surveying, and in the reading of topographical plans and maps.

Physical and Natural Science—Hygiene—Agriculture.—The physical and natural sciences are studied in themselves, and in their connection with hygiene and agriculture. The instruction in these subjects is so arranged as to make of it all one connected whole, the hygiene and agriculture particularly representing the practical part. The desire has been to thus enable the future teachers (1) to apply intelligently at the day school the instructions of the 4th January, 1897, relative to the notions of agriculture to be given in the country schools; (2) to actively assist, in the evening school, by their influence on the adults, the work of the Departmental teacher.

The teaching of the physical and natural sciences, essentially concrete, makes ceaseless appeal to the fruitful resources of the visual memory. Be it a question of some physical phenomenon, the experiment which makes it clear is, as much as possible, carried out in front of the pupils by the aid of simple apparatus. In Chemistry, certain carefully chosen reactions show clearly the fundamental property of the substances studied; in the natural sciences, the object is always presented and placed in the hands of the students. The wall plates, and especially the sketches drawn by the teacher on the blackboard, complete the demonstrations. The students take notes and reproduce the sketches; they complete in private study their class books with what they remember and by the aid of certain books. Moreover, they are practised at observing and describing correctly, and by the frequent repetition of short oral expositions they acquire the faculty (so important for future teachers) of clearly expressing their thoughts.

Three hours a week in the first and second year, and four in the third year, are given to the teaching of the physical and natural sciences; twenty lessons of one hour each are devoted to hygiene. A circular of the 20th March, 1897, requests the teacher responsible for the course in hygiene to emphasise the dangers that spring from the abuse of fermented alcoholic drinks, and from the habitual use of distilled drinks, with or without any essence; likewise to emphasise the hereditary influence of the alcoholism of parents.

The instruction in agriculture at the training schools is given by the Departmental teacher of agriculture. The course extended over forty lessons (second and third years) embraces the study of vegetable and animal production, of practical ideas of fruit and kitchen gardening, ideas of zootechnology peculiar to the animals of the district, of agriculture, of sericulture, the hygiene of the animals of the farm, the elements of rural economy. Much importance is rightly given to the agricultural excursions and to the demonstrations in the gardens and the farms.

Every school is, of course, provided with a physics room, and a chemistry laboratory with a manipulating room. It possesses, in addition, collections in natural history, a botanical garden, and a second garden intended for experiments, and for the work in fruit and kitchen gardening, in which the students themselves carry out the principal operations of ploughing, hoeing, spreading of manures, sowing, weeding beds, grafting, training, pruning, trimming, &c., of fruit trees and the vine.

Modern Languages.—Two hours a week are given to these classes during the three years. A third hour, taken from the other studies, is devoted to conversation. The teacher never forgets that the living languages must be taught for the purpose, above all, of being spoken. Accordingly he imparts to his teaching a character essentially practical, and watches with particular care the pronunciation, which is practised in connection with every lesson and every exercise. Reading, recitation of chosen passages, conversations on simple subjects and such as have to do with ordinary life, housework, manual work, travels, &c., short compositions, private letters, songs, practical study of the grammar and vocabulary —such are the chief exercises by which the student is familiarised with a living language—German, English, Spanish, Italian, or even Arabian.

Manual work.—The students are practised three hours a week during the three years. (1) In paper and cardboard work: Weaving, folding, cutting, boarding, which is closely associated with the instruction in drawing. (2) In woodwork: Sawing, planing, joining, making of certain tools and common objects, turning. (3) In ironwork: Bending of iron wire in geometrical forms; exercises with file, graving-tool, chisel, drill, elementary smithwork, soldering, brazing, beating and tempering. (4) In modelling: Simple relief work at first, then applied to geometrical ornaments, architectural mouldings, simple ornaments drawn from the vegetable kingdom. Simple diagrams in elementary stereotomy, and elementary exercises in sculpture upon plaster of Paris and wood, complete this instruction.

Drawing.—The teaching of drawing embraces model and geometrical drawing, the latter being generally entrusted to one of the teachers of the school, the former to a special teacher. The programme is comprehensive and includes: (1) Model drawing: Study of the principles, copies of plaster of Paris models, drawing of geometrical ornaments, and of ornaments taken from the vegetable kingdom, of specimens of architecture, of ornamental plants and of animals, of the different parts of the human body and face from engravings and from models of relief, &c.; concise ideas on the orders of architecture, on the general structure of the different parts of the human body and the proportion of these parts to the whole. (2) Geometrical drawing: Drawings in connection with the straight line and the circle; of geometrical solids and simple objects to a fixed scale; ideas concerning the straight line and the plan and projection of solids; the copying and reduction of plans of buildings and machines, of topographical plans and maps; exercises in colour washes.

Additional Instruction (Singing, Gymnastics).—The time given to the additional instruction is partly taken from the period for recreation.

The instruction in singing is given to each division separately (2 hours a week), but the students of the three divisions are frequently combined for chorus work. The students must be able, upon leaving the training schools, to teach the school songs. They receive, moreover, some ideas on the history of music and the principal works of the masters.

The work in gymnastics (3 hours a week) includes games, walks, drill, evolutions, short-distance running, combined movements, lessons in boxing, single-stick, and bâton; exercises with apparatus, emphasising the practical application of the work, and particularly the life-saving exercises; the systematic preparation for the teaching of gymnastics in the primary schools. For this last purpose, the students of the third year are practised, under the control of the teachers, in giving the instruction to the pupils of the practising school and to their fellow students of the first and second years. The majority of the students undergo with success, at the end of their training school work, the examination for the *Certificat d'Etudes* for the teaching of gymnastics.

The

The following table shows the subjects and the time devoted to each per week:—

Subjects of Instruction.	Total Number of Hours per Week.		
	1st Year.	2nd Year.	3rd Year.
Literary Instruction—			
Psychology, Ethics, Pedagogy	2	2	2
French Language and Literature	5	4	4
History and Civic Instruction	3	3	3
Geography	1	1	1
Writing	2	1	...
Modern Languages	2	2	2[a]
Total	15	13	12
Scientific Instruction—			
Mathematcis	3	4	4
Physics and Chemistry	2	2	3
Natural Sciences and Hygiene	1	1	1[b]
Drawing and Modelling	4	4	4
Theory of Agriculture	...	1[c]	1[c]
Total	10	12	13
Manual and Agricultural Work	5	5	5
Gymnastic and Military Exercises	3	3	3
Singing and Music	2	2	2

a In addition to these two hours, an hour must be taken from the other studies or from the students' own tim for conversation.

b Hygiene and geology in third year only take one hour—hygiene, twenty lessons.

c The two lessons each week by the teacher from the Department of Agriculture are given the same day. There are thus twenty lessons of an hour and a half for each year.

Training Schools for Females.—The programmes are the same as for the training schools for males, so far as the literary part is concerned; they are lessened on the scientific side.

The students receive ideas of domestic economy. Their manual work consists of sewing, cutting, and joining; the teaching of drawing embraces, in their case, applications to subjects of decoration, embroidery, lace, tapestry.

In garden work, they confine themselves to the chief operations in connection with kitchen gardening, to those performed in an ordinary well-kept garden, in which is found an abundance of different vegetables, fruit, and flowers. Finally, they are initiated in the first cares to be given in the case of accident.

In a word, the object has been "to make of the female students young ladies instructed, so far as is necessary, in the sciences and in letters, but instructed at the same time in the things of life, in the management of a home, a garden, a poultry-yard; in the keeping of the domestic accounts; the preparation of foods, of everything that contributes to the order and beautifying, to the economy and well-being, of a home."

CHAPTER XXXVII.

CHAPTER XXXVII.

The Education and Training of Primary Teachers in Europe. (Switzerland and Hungary.)

[G. H. KNIBBS.]

1. *Introductory.*—In Europe proper, the education and *training* of teachers is,[1] after the initial steps of their general education have been taken, by means either of special courses in pædagogy given in colleges and universities, or by courses in normal-schools; practice in the art of teaching being almost invariably part of the curriculum. The practice is in some places given in a special practising-school connected with a seminarium, and sometimes in ordinary schools, visited professionally under a proper disciplinary scheme.

The most striking difference between the entire Continental and the average English conception of what should constitute a proper preliminary qualification for teaching, is that on the Continent it seems to have been long held, certainly for many years past, that persons undertaking teaching should not only have first learned the subjects which they intend to teach, but should also, in addition to acquiring the *right point of view*, be thoroughly educated in the *methodology* of teaching them. England has, on the contrary, been satisfied to employ pupil-teachers, that is untrained persons. Comparing the recent history of the methods of training teachers in the United Kingdom and in Europe, one may say that *practically all recent change has been in the direction of the European methods.*

2. *Pædagogic Psychology and Methodology.*—Pædagogic psychology and methodology have for a long time past been very real elements in the European curriculum for the training of teachers, but English pædagogic training has not until recently taken such subjects into account. It may be pointed out here that these subjects are absolutely ignored in the New South Wales system of teacher-training. Although instruction is given in what is called "teaching-method" in this State, *no instruction is given on the lines of psychological methodology.* This statement, until recently, was practically true also for the United Kingdom.

The contributions which systematic *psychology* and *philosophy* are able to afford *pædagogy* have always been vividly realised in Europe, and the whole theory of teaching has in consequence been raised on to a far higher platform. Professors of education in all parts of the world fully appreciate this; and so also do those who have received any higher form of teaching education. And it is obvious that the more a teacher knows of such subjects, the more, that is, that he has made himself acquainted with the systematic study of mental operations, and with the physical conditions associated with their best development, the more able and suggestive will he be as a teacher.

Methodology in teaching has been the outcome of the attempt to apply psychology to the mode of effectually communicating knowledge so that it shall be properly received, and to the cultivation of the *will*, on which so much ultimately depends. The means of transforming *perception into apperception;* the best scheme of establishing rational and empirical associations among ideas, with a view to reinforcing the powers of memory; the way in which teaching can be changed from a merely didactic process into one full of suggestiveness, arousing the interest of the pupil, touching every element of his existing stock of knowledge, the awakening and direction of his emotion and will; all these things involve some of the higher resourcefulness, which such a subject as *pædagogic psychology* is capable of developing.

Teachers who are unacquainted with such subjects may, of course, be (empirically) correct in their teaching method; but for the true appreciation of the theory, even of such a matter as kindergarten, its psychology must be understood. A criticism of its results can be undertaken only on psychological lines. The deeper questions of higher methodology, *i.e.*, the reasons why certain definite schemes should be followed in teaching certain subjects, demand a thorough grasp of mental science.

The point of view of the teacher in Europe has always been to some extent on this higher plane, owing to the aperçu he has been given of the history and theory of pædagogy, and of what the Germans call its "Zielpunkt" (its aim). The outline which, in his special course, every teacher has of its general theory, of its specialisation with regard to the scheme of teaching each subject; the exhaustive criticism of this latter; the fact that the intellectual atmosphere of Europe is practically charged with pædagogical elements, all combine to assist him in attaining the higher conception of his professional functions.

3. *Influence of the Thorough Education of the Secondary Teacher on the Primary School Teacher.*—It is not possible to properly estimate the position of the primary teacher of any country without recognising the influence of the education of those under whose hands he passes in qualifying himself for his primary-school work, because their view in some measure communicates itself to the primary teacher during his education; and by mental attrition he is polished, and by mental suggestion quickened into a deeper view. This will be seen by considering the influence, for example, of the higher class of teachers who train the folk-school teachers of Germany. It is practically impossible in that country for a secondary-school teacher to equip himself before the age of 30 years. By that time he is a well-equipped man of matured views, and is most highly educated. His *ideals* of education are consequently correspondingly well-developed, and the men who are taught by him are in a good way, as compared with those who are taught by relatively ignorant men. This is one of the great factors in the excellence of German education which, although for certain reasons, it cannot be blindly followed by us, is so incomparably superior to what now exists here. It

[1] In France there is a class of probationers (stagiaires) in the elementary schools, to which fuller reference elsewhere made. They number about 20 per cent.

It may be asked, "why is England and its dependencies not in an equally good way?" for there are men of the highest calibre in the United Kingdom. That is true, but it is nevertheless equally true that, speaking generally, the secondary-school teacher of Germany is a far better educated man than his colleague across the English Channel. Moreover, throughout Europe there is a unity in the educational spirit, such that any significant movement reacts upon each country therein; but, until recently, this has not extended in a general way to the United Kingdom, notwithstanding that at all times there have been able and patriotic men who at once reacted to, and took cognisance of it. It is this "Erziehungsgeist" that has so profoundly affected the primary-school teacher of European countries in his work, even when, personally, he has been an inferior man. He, at least, knew of, and admired, the right kind of development.

It may be said that in the *higher planes* of education the whole world is absolutely in touch; the *men in the highest branches of education in every country are profoundly conscious of their mutual indebteaness, and of their substantial unity of aim.* No one is more fully conscious that this spirit of mutual recognition has not as yet gone sufficiently downward to make the thoroughness of *popular education* what it ought to be, as the best educational leaders in England, Scotland, and Ireland. It should be remembered, however, that in developing the popular educational systems, and the scheme of teacher-training in connection therewith, the Continental "Geist" has practically played but a small part in England, and far less here than it has in England as a whole. Now, however, it is *commencing to transform English education*, and numbers of the teaching profession in England now visit Europe, all seeming to be strongly impressed with the Continental methods.[1] This is shewn in their observations upon European ideals. Comment on the very different state of things obtaining in Europe is almost invariable. For example, Mr. T. R. Dawes, M.A., London, Headmaster of the Pembroke Dock Country School, who, as a "Gilchrist Travelling Student," presented to the Court of the University of Wales a report on the "Bilingual teaching in Belgian schools," says, in referring to normal-schools for the training of elementary and secondary teachers, "There are no pupil-teachers in Belgium. *In the employment of children to teach children England enjoys a 'splendid isolation.'* I found that teachers and inspectors were greatly surprised that in England young pupils should be employed in teaching."

This influence of higher teaching goes right through the Continental educational methods, and awakens enthusiasm in those who are sufficiently educated to understand it. What, for instance, could be more enthusiastic than the testimony of Dr. Henry E. Armstrong, F.R.S., Professor of Chemistry at the Central Technical College, London, speaking of another feature of Continental education, viz., the methods of science-teaching. He said, "When I passed from the mainly didactic surroundings of an English laboratory, into the heuristic atmosphere of a German University, I seemed to escape into an Elysium."

4. *Effect of Educational Spirit of Europe on Education of Teachers.*—The spirit in Europe which inhibits all attempt to employ mere boys as teachers, is, without doubt, due to the high education of the secondary teachers, and one cannot meet a secondary-school teacher in Europe without realising that his intellectual attainments are of that thorough character which is calculated to give his teaching moral as well as intellectual force.

All persons with whom the Commissioners came in contact, who had a sufficient acquaintance with Continental languages to spend their time in Europe with a maximum of profit, were profoundly impressed with the educational spirit of every European country. And very often those who did not understand these languages saw sufficient to command great respect for the merits of Continental methods, and the Continental view of education.

There is another reason why Continental traditions as to education should be influential, viz., the reaction between different European countries, to which reference has already been made. This reaction appears in an instant recognition of the educational significance of any advance in other countries, and is illustrated, for example, by the fact that when the late Emperor of Russia (Alexander II) authorised the Finnish Senate to present a scheme for the elementary education of the people of that country, the Rev. Uno Cygnaeus, "father of the Finnish peoples' school," who was chosen as adviser, travelled through Denmark, Germany, and Switzerland, studying their educational systems, including Kindergarten.[2]

It is unnecessary to remark that the better educated man reacts more quickly than the man of ordinary education. Thus it is easy to see why all secondary-school teachers, and, *through them*, primary-school teachers, are in some measure infected with modern Continental ideals. The splendid work of Mr. Michael E. Sadler, late Director of the Special Inquiries and Reports of the Education Department of England, is really a masterly attempt at focussing the educational knowledge of other countries for the benefit of the English people, an endeavour to raise English ideals of education to the Continental plane. It was very gratifying to observe that these reports are well known on the Continent of Europe, and referred to with enthusiasm.

The still larger work of Dr. W. T. Harris, the Commissioner of Education at Washington, is a similar attempt on a much larger scale to make America fully acquainted with European methods, and to systematically keep under review her own educational progress. These also are Continentally appreciated. Primary education, primary-school teachers, the curriculum of the former, and the educational and professional training of the latter, are profoundly influenced in both America and the United Kingdom by these two sets of reports. Enough has been said, perhaps, to shew the reality of the influence of the educational atmosphere of Europe, not only upon people educated therein, but also on the world outside; and it is now proposed to pass more into the detail of the subject, remarking finally that, wherever teachers are well educated men, popular opinion will readily recognise the value of their services, and will consent to be guided by the example of better educated countries, at their solicitation.

5. *The Training of Teachers in Switzerland. General.*—Primary-school teachers are prepared in Switzerland, either in colleges giving pædagogical instruction as one of their special courses, or in normal schools or training seminaries. Most of the latter were opened between 1830 and 1840, but in the Canton of Lucerne

[1] The uniform practice is to learn to speak the language of the country to be visited and then study the system.

[2] It is worthy of note that Cygnaeus held that there should be but one class of primary schools in the lower standards, in which *all children*, irrespective of social position, should receive their education. This, however, was deemed to be impossible of realisation by the committee to whom his scheme had to be submitted.

Lucerne the Abbot Benedict, of St. Urbain, founded an "école normale" for teachers as early as 1768. The first *State* normal-school, was, however, not founded till 1822, in the Canton Aargau. From that time on, the Swiss "Society of Public Usefulness" has made the most strenuous efforts to develope popular education. Rector Hanhart and Father Grégoire Girard, in 1826, reported on the formation of a teaching body, and it is due largely to their efforts that Swiss normal schools have been developed into their present condition.

Most of the Swiss Cantons have now one or more normal schools, and all of them have at least an equivalent. Besides the official establishments, maintained and directed by the State, there are also non-official normal schools of a denominational character and also inter-cantonal normal schools. In 1894 the whole territory had no less than 37 normal schools, with 319 professors, and 64 work mistresses, who are also overseers of studies. In attendance there were 1,358 male, with 938 female, aspirants for the teaching profession; and in the same year 345 school-masters and 284 schoolmistresses obtained their diplomas.

Those who wish to become teachers are required to be of robust health, and to possess the necessary intellectual and moral aptitude. Speaking of qualification, and in referring to the Swiss ideals, Professor Dr. Guex of Lausanne states that aspirants, when they present themselves, should remember that they must have "the necessary moral qualities, the solid virtues, without which the work of the master would be useless; they should have the *vocation*, that is to say, *that internal voice which calls them to the profession*, and which makes easy the apprenticeship thereto, giving not only the zest but also that real pleasure that always exists where one loves his calling;" and it is very strongly held that "'badly equipped masters,' and mere 'vulgar teaching-tradesmen' compromise the dearest interests of the family and the State," and should be conspicuous by their absence in the teaching-body. Switzerland highly respects its teaching staff.

Except in the Canton of Zurich, the normal schools for mistresses are separated from those for schoolmasters. At Küsnacht, since 1873, school-mistresses and schoolmasters have made exactly the same studies; they obtain the same diploma, and are put upon the same footing with regard to emoluments.

By far the greater number of training-schools make 15 the minimum age of entrance; others, however, fix 16 as the minimum age. In regard to the entrance age, it should be remembered that the Swiss children are much more advanced on the whole than children of the corresponding age in our State, as will be seen by reference to the primary school programme of studies in an earlier chapter. The duration of study varies from one to four years; ten establishments have a course of four years, two a course of three and half, eighteen a course of three, five a course of two years, and, finally, two a course of only one year. The scholastic year commences in spring in twenty normal schools, and at seventeen it commences in autumn; the vacations are from nine to twelve weeks a year. In Geneva and Neuchâtel, *religion* is not taught in the pædagogical sections; but from two to four hours a week are given in the other normal schools. In all the State normal schools it is optional, and is distinct from other branches of the programme. In the normal school of Zurich the course in religion is restricted to Church history. In the private normal schools, however, greater importance is attached to the subject, and a correspondingly larger number of hours are devoted to it.

The mother-tongue occupies from five to ten hours per week. With three exceptions, either one or two foreign languages are studied, and also Latin in Küsnacht and Zurich. To mathematics is assigned from twenty-two hours per week, in Küsnacht, to as low as three hours (for mistresses only) at Neuchâtel. Natural science is completely omitted in one normal school for women, while from seventeen to twenty hours per week are given in other schools. Hygiene is treated as a special branch of instruction in Locarno, Hauterive, Lausanne and Geneva, while in other schools it forms part of the instruction in natural science. Theoretical instruction is given in agriculture in almost all the normal schools, and practical instruction is given at Hofwyl, Porrentrury, Muristalden, Rickenbach, Zoug (Zug), Hauterive, Rorschach, Coire, Wettingen, Kreuzlingen, and Sion. History occupies two or three hours per week, and geography two hours. In normal schools where French is the mother-tongue, civic instruction is also a special subject. In the German-speaking schools it is a part of "Vaterlandskunde" (knowledge of one's own country), and is considered a natural and essential supplement to the teaching of history and geography. Singing is everywhere taught, as much as five hours per week being sometimes devoted to it; while instrumental music is given in nine normal schools to young women. The instruments are the organ, piano, harmonium, and zither. For young men the violin and organ are preferred. Drawing, which is considered in some respect comparable to mathematics in practical importance, is given two hours a week. Zurich, Locarno, and Geneva consider that one hour is sufficient for caligraphy; while Lausanne gives six hours, and Rickenbach and Menzingen no less than seven hours. Gymnastic occupies about two hours per week. Manual work takes various forms, for instance practical exercises in agriculture, or it may be pasteboard work, modelling, or woodwork. In Zurich the programme of mathematics includes algebra, geometry, and trigonometry.

The number of hour-lessons per week is very variable, ranging from a minimum of twenty-five at Geneva to forty-six at Sion and Brigue, the mean for all the Swiss normal schools being thirty-eight. The opinion of experts is that although the normal school is a serious apprenticeship to a profession requiring patience, assiduity, and a good deal of information, the courses are altogether too long; and that however much these may be lightened by a wise arrangement of detail, or however much some of the courses may be made practically recreational, the hours are still excessive. The majority of the schools are residential.

The great majority of teachers in the normal schools possess at least the diploma of a secondary-school teacher, and some are professors from the universities. It is universally recognised in Europe, that *a person, whose education is limited to the primary school, is not qualified to train primary-school teachers.* Teachers and professors employed in training are specialists, and teach but one or two subjects, except in the smaller normal schools, where, owing to the limitation of their number, that would be impracticable. In by far the greater number of the normal schools the course is gratuitous. School fees are being exacted only in the case of foreigners, or persons attending unofficially. Poor pupils receive bursaries, or variable subsidies depending upon the financial state of their parents, and upon their assiduity and general good conduct. In 1891 Zurich gave to 153 pupils the sum of 35,000 francs (£1,400); Lausanne gives bursaries of from 50 to 400 francs per annum (£2 to £16). In 1894 it gave to 217 pupils 44,500

francs

francs (£1,780). Zurich exacts the complete repayment of subsidies by pupils who, on leaving the normal school, do not undertake teaching, or who abandon it within two years after obtaining the diploma. Vaud exacts three years, and Valais as much as eight.

Several of the normal schools, among them that at Lausanne, have special courses for subjects outside the ordinary teaching; the work of such was seen in Lausanne by the Commissioners at the "école normale" of the city.

In Zurich, at the end of three years' studies, there is a sort of propædeutic examination as regards general culture. It is some relief for the pupils of the normal school, who, during the last year of their study, are able to put their efforts into several theoretical courses, and above all into a practical preparation in a "school of application." This professional preparation is more fully completed by a subsequent two years' provisional service in the school, at the end of which time the candidate receives his definitive diploma, if all has been satisfactory.

Berne has an organisation analogous to that of Zurich, viz., an examination for general culture after 5 semesters (half-years), and finally an examination on theoretical and practical pædagogy, French,[1] gymnastics, etc. There are a number of variations in the different Cantons, but they are not of much importance, and will not be here further referred to.

In the drift of the education, by means of which teachers are prepared for their calling, two features have become conspicuous; one of these is a clearer recognition of the distinction between general and purely professional education. More and more a higher stage of general culture is being demanded; this tendency, however, exists not only in Switzerland, but *throughout Europe*. Professor Rein, of Jena, in Germany, and Dr. O. Hunziker, in Switzerland, have expressed themselves upon the point; thus the former:—"Sollen aber die Fundamente, auf denen sich unsere Lehrerbildung aufbaut, gesunde sein, so ist vor Allem die Wahrheit zu fixieren, dass streng unterschieden werden muss zwischen der allgemeinen Bildung und der Berufsbildung." (If the foundation, upon which our teacher's education is built, be sound, then before all things we must establish the truth, that there must be a rigorous distinction between general education and education for an avocation).

The Swiss method of teacher-training is sometimes not so comprehensive as the German; and to some extent there is a little confusion of general with professional education, in the purely pædagogic course.[2]

The other tendency is to more widely adopt the provisional diploma, so as to exercise some control on the career of a young teacher after he has left the normal school. It is held that in this way young teachers are made more vividly conscious of the fact that their education in the art of teaching has only *commenced* in the normal school. At the end of from one to three years' practical work, the candidate presents himself afresh before the examining body. Theoretical and practical pædagogy now constitute the subject-matter of his examination. This is designed to ascertain whether the teacher has really continued his studies; whether he has a real knowledge of childhood, and an appreciation of its needs, and whether he possesses that spirit of willing sacrifice which is essential for the fulfilment of his career against its many discouragements. It is undeniable, it is said, that the Cantons who adopt this subsequent examination are in the van of Swiss education.

In order to make good the inevitable defects in the training of teachers, improvement courses (cours de perfectionnement) of various kinds have been organised, so as to offer to teachers who are isolated in the country the means of retaining what they have already learned, of refreshing their memories, and of acquiring some knowledge of new material; and also of keeping *au courant* in regard to questions of the day and questions of modern methods. Switzerland spent for this purpose, in 1893, 52,019 francs; and in 1894, 51,856 francs (£2,081 and £2,474 respectively).

6. *Professional Associations of Teachers and Conferences.*—In the Canton of Vaud, school masters and mistresses meet once a year in the district conference. These reunions are convened by the Department of Public Instruction, and are obligatory upon all masters and mistresses in the district. Those who do not attend are fined. Every fourth year a president, vice-president and secretary to the conference are elected. Besides this, there is a free Pædagogical Society in Vaud, that meets every second year. These scholastic synods, that is to say, an assembly of delegates from the teaching-staffs, charged legally with the official study of the solution of education and teaching questions, are important factors in the development of the Swiss teacher.

The teachers' professional societies are also important educational factors; and, if properly constituted, keep alive their higher effort. The two largest societies of Switzerland are the inter-Cantonal associations for German and French speaking teachers, viz.:—

Der schweizerische Lehrerverein.

La Société pédagogique de la Suisse romande.

These socities meet alternately in French and German, Switzerland. Besides these, which were founded in 1849 and 1864, respectively, there are also the following societies, viz.:—

"Societa degli amici dell' educazione," for the Italian-Swiss.

Société pédagogique catholique (1875).

Société des instituteurs de l'école chrétienne (protestant), (1863).

Société pour l'éducation des enfants pauvres (1848).

Société des maîtres de gymnastique (1858).

Société pour l'avancement de l'enseignement du dessin (1874).

Société pour les écoles de jeunes filles (1878).

Société des maîtres dans les écoles complémentaires professionelles (1885).

Société suisse pour l'avancement de l'enseignement des travaux manuels (1886).

Société suisse des jardins d'enfants (1881).

Société romande des maîtres de dessin et d'enseignement professionnel (1896); and some smaller societies.

These various societies repeatedly pass in review various questions of teaching and other scholastic questions of the day, and so cause the pædagogical life of Switzerland to be one of great interest. Most of the Cantons have fine libraries, containing scholastic works and journals at the disposition of their teachers. According

[1] German is, of course, the mother-tongue of the Bernese. [2] Such a course as is given at Küsnacht leaves practically nothing to be desired.

According to Dr. Albert Huber, editor of the Swiss "School Statistics," the vast majority of the primary-school teaching staff in Switzerland have received their education in seminaries only, a vanishingly small fraction have come from other schools, and a still less have participated in the education of the superior schools (universities).[1] This unity of method in training has no doubt done much to intensify the professional spirit among the Swiss teachers, and to bring about their association.

7. *Pædagogic Section of the College of Geneva.*—The scheme of training teachers in the College of Geneva affords an instructive example of what is possible in the way of pædagogical training, *in a general college* with sectional equipments. The programme will be given *in extenso* for many subjects, for two reasons: one in order to shew *what is possible without a special training college;* the other, to shew the fairly high character of the teaching. It may serve also to bring into relief the fact that *more depends upon the culture of those who do the pædagogical teaching than upon the mere existence of a training college.*

The time-table is as follows:—

Obligatory Subjects.	Class.				
	IV.	III.	II.	I.	Total.
French	8	7	4	5	24
German	7	6	5	4	22
General History	2	2	2	2	8
Geography	3	3	2	...	8
Natural History and Geography	...	...	...	2	2
Mathematics	4	4	4	6	18
Commercial Arithmetic and Book-keeping	...	...	2	...	2
Cosmography	...	...	...	1	1
Natural Science	4	3	2	...	9
Physics	...	...	3	2	5
Chemistry	...	...	...	2	2
Physical and Chemical Laboratory	...	...	...	2	2
General Pædagogy	...	...	2	...	2
History of Pædagogy	...	...	...	2	2
Common and Civic Law	...	...	2	...	2
Hygiene	...	...	...	1	1
Elocution	1	1	1	1	4
Drawing	2	2	2	2	8
Caligraphy	...	...	...	1	1
Music	...	3	3	1	7
Gymnastics	2	2	1	...	5
Practising School	...	...	...	1	1
Total	33	33	35	35	136
Optional Subjects—					
English	2	2	2	2	8
Italian	...	...	3	3	6
Stenography	2	...	...	...	2
Music (Chorus)	1	1	1	1	4
Gymnastics	...	...	...	1	1
	5	3	6	7	29

In taking these subjects in detail, the order of the time-table will be abandoned. General pædagogy is taken in the second class when the pupils are 17 years of age, and occupies two hours a week. It is developed according to the official programme, here translated, as follows:—

General Pædagogy. Instruction.—The child and his development. Sensation, imitation, observation. Initial experience, comparison, relation. Introduction of symbols; drawing, reading and writing, numeration. The association of ideas, reflection, generalisation, combination and invention.

Collective Instruction.—The school; its advantages and inconveniences. Discipline; the rôle of persuasion and constraint. Scholastic organisation; primary, secondary, and higher education. Educational systems and methods.

The history of education is taken in the first class when the pupils are 18 years of age, and occupies two hours a week. It is developed in a manner calculated to make each pupil appreciate in the fullest manner the splendid history of education. The programme is developed pretty much as follows:—

History of Pædagogy. Greece.—The system of education in Sparta and Athens. Greek educational theory. Plato. Aristotle.

Rome.—The system of education under the Republic and under the Empire. Roman educational theory. Quintilian.

The Middle Ages.—The monasteries and the cathedral schools. The communes and the city schools. The universities.

The Renaissance.—Humanism: Erasmus. The Reformation: Luther, Melanchthon, Calvin, Sturm, Rabelais, Montaigne.

The Congregationists.—Jesuits, Oratorians, Port Royal, Brothers of the Christian Schools.

Seventeenth Century.—Descartes, Bacon, Ratichius (Ratke), Bossuet, Fénelon, Madame de Maintenon, Comenius (Komensky), Rollin, Daniel de Foe.

Eighteenth Century.—Locke, Rousseau. (Reading of the first three books of the Emile.)

The Pietists and Philanthropists.—Francke, Basedow.

The French Revolution and the Empire.—Theory and design of laws, the University of France.

Modern Pædagogy.—Pestalozzi, Père Girard, Madame Necker de Saussure, Froebel, Fellenberg, Herbart and his school, Herbert Spencer, Actual Scholastic Institutions in Switzerland, France, and Germany.

One has merely to read any of the monographs on pædagogy by Swiss writers to realise how much living interest and stimulus there is in the course above outlined.

Mathematics

[1] Schweizerische Schulstatistik 1894-5, Bd. VIII, pp. 441-2.

Mathematics.—The detailed programme of Mathematics will also be given.

Algebra.—4th Class, age 15, four hours per week. Introduction: Addition, subtraction, multiplication, and division of algebraic expressions. Particular cases of multiplication and division. Decomposition of an algebraic polynomial into factors, in the simplest cases. Elementary calculation of fractional algebraic expressions. Equations: principal definitions and introduction to the solution of equations Equation of the first degree of one unknown; its application to the solution of equations, numerical or literal. Discussion of several results; impossibility, indetermination. Two unknowns. Elimination by substitution, by reduction, and by comparison. Numerous problems.

Geometry.—The plane and the different lines that may be traced thereupon. Angles, perpendiculars and parallels. Triangle; isosceles, right-angled. Equality of triangles. Sum of the angles of a triangle and of a convex polygon. Quadrilaterals. The parallelogram. The circle. Properties of chords and tangents. Angle at centre, and inscribed angle. Inscribed and circumscribed polygons. Regular polygons and their properties. Proportional lines and similar figures. Principal cases of similarity between two triangles and two polygons. Metrical relations. Calculation of π. The area of plain figures, viz., of the rectangle, parallelogram, triangle, trapezium, polygon, and circle. Comparison of areas. Numerous exercises on all parts of the programme.

Mathematics (continued).—Third class, age 16, four hours per week.

Algebra.—Question of the first degree of several unknowns. Elimination by substitution and reduction. Literal equations of the first degree. Square and square root of numerical and algebraical quantities. Roots of the second degree. Equations of the second degree of one unknown. Formulæ. Bi-quadratic equations. The simplest cases of equations of the second degree of several unknowns. Development of equations and problems.

Geometry.—The plane. The perpendicular and oblique to a plane; parallel planes, perpendicular planes, dihedral angles. Equality of two tribedrons which have their three faces respectively equal. The polyhedrons: Prism, parallelepiped, pyramid, truncated pyramid, surface and volume of these figures. Spherical bodies: Cylinder, cone, truncated cone and sphere, their surfaces and volumes. Numerous exercises upon all parts of the programme.

Mathematics (continued).—Second class, age 17, four hours per week.

Algebra.—Algebraic quantity; the various developments of the notion of number. Powers and roots; integral exponent, positive or negative. Roots of integral index, application to calculation. Fractional and irrational exponents. The exponential function. Logarithms; application to the calculation of numerical expressions. Simple exponential equations. Arithmetical and geometrical progressions. Compound interest. Annuities. Permutations, arrangements, and combinations of distinct elements. The binomial theory of Newton with positive integral exponent.

Trigonometry.—Trigonometrical ratios of an acute angle. Solution of right angle triangle; applications. Study of the trigonometrical functions of any angle whatsoever. Problems of inverse functions. Relations subsisting among trigonometrical functions of supplementary and complementary arcs, etc. The theorem of projections. Addition and subtraction of arcs. Multiplication and division of arcs. Transformation of products of the sum of two sines or two cosines. Simple trigonometrical equations of one unknown. Relations subsisting between the angles and sides of any triangle whatsoever. Solutions of any triangles. (The results should as often as possible be verefied by means of drawing). Various applications. The elements of spherical trigonometry. Fundamental relation. The solutions of triangles.

Mathematics (continued).—1st class, age 18, six hours per week.

Analytical Geometry (2 hours). Introduction. The graphical representation of a phænomenon or a law. The notion of co-ordinates. Problems concerning the point; harmonic division. Area of the triangle and polygon. Transformation of co-ordinates. The straight line—equation of a line, its various forms, intersection of two lines, angle of two lines, distance to a point from a straight line.

The Circle.—Equation of the circumference of a circle, circumference passing through three given points, tangents. Power of a point in relation to a circumference. Intersection of two circumferences. Geometrical positions.

Conic Sections.—Synthetic studies; demonstration of fundamental properties by means of a cone of revolution, construction of conics by points, property of tangents. The ellipse and equation of a curve related to its axis of symmetry, equation of the tangent, the ellipse considered as the orthogonal projection of the circumference of a circle, congugate diameters, area of the ellipse.

Hyperbola.—Equation of the curve related to its axis of symmetry, discussion of the equation, the equation of the tangent, conjugate diameters.

Parabola.—Equation of the curve related to its axis of symmetry and the tangent at its summit; the equation of the tangent, sub-tangent, and sub-normal, conjugate diameters. The equation common to the ellipse, hyperbola, and parabola in rectangular and polar co-ordinates.

Exercises (2 hours).—Exercises upon the whole of the mathematical programme in the preceding classes and upon the programme in analytical geometry.

Complementary arithmetic. (One hour).—Arithmetical operation with whole numbers. Divisibility. Proofs by nine. Greatest common divisor. Least common multiple. Prime numbers. Operations with fractions. Decimal fractions. Complex numbers. Continued fractions. Theory of numerical approximation.

Pædagogical directions for teaching elementary mathematics. (One hour).—The function of mathematics in intellectual education. Special conditions which the study of that science presents. Methods. Logical order and pædagogical order. What must be attributed to experience, and what to induction Special and definitive study of teaching calculation and the first notions of geometry.

Preparations of some lessons upon arithmetical, algebraical, and geometrical subjects.

Physics. Class II, age 17. (Three hours per week).—Mechanics. Uniform motion. Uniformly varied motion. Galileo's principle. The parallelogram of forces. The composition of parallel forces. Equilibrium of forces. Mass. The proportionality of constant forces to the accelerations which they impress on the same moving body. The conception of work, and of the conservation of energy. Equality in simple machines of the work done in motion and resistance.

Force of gravity.—Direction of gravity. Centre of gravity. Weight. The law of falling bodies. Atwood's machine. Inclined plane. Intensity of gravity. The balance.

General properties.—Units of measurement. Instruments of measurement. Principle of equality of pressure in fluids. Free surface of liquids in equilibrium. Pressure upon the bottom and sides of vessels. Hydraulic pressure. Communicating vessels. Principles of Archimedes, density, areometers. Weight of the air. Barometer. Mariotte's law. Manometers. Air-pumps, pumps, syphons, aerostats.

Heat.—Dilatation of bodies by heat. Construction and use of thermometers. Coefficients of dilatation, of solids, liquids and gases; their applications. Specific heat. Calorie. Conceptions of equivalents of mechanical work. Determination of the specific heats of solids by the method of mixtures. Fusion in solidification. Latent heat. Refrigerant mixtures. Formation of saturated and non-saturated vapour. Maximum tension. Evaporation. Ebullition. Density of vapours. Freezing-machines. Steam-engines, etc.

Physics (continued). First class, age 18. (Two hours per week).—Electricity and magnetism. Electrification by friction. Law of attraction and repulsion. Distribution of electricity on the surface of conductors. Power of points. Elementary conceptions in regard to electric potential and capacity. Electrification by influence electroscopes. Electric-machines. Leyden jar. Lightning and lightning-conductors. Fundamental laws of electric currents. Resistance. Calorific and chemical effects of currents. Natural and artificial magnets. Poles. Definition of declination and inclination. Compasses. Oersted's experiment. Galvanometers. Action of currents upon currents, and upon magnets. Solenoids. Magnetisation by currents. Electric induction; fundamental experiments. Piles. Thermo-electric couples. Principle of dynamos; their reversibility. The telegraph and telephone.

The above is from a programme for the year 1900. The Commissioners are aware that some indication is given of the principle of recent developments in telegraphy, such as wireless telegraphy, etc.

Acoustics.—Production and propagation of sound ; its reflection, intensity, pitch, musical intervals, sonorous tubes, timbre.

Optics.—Rectilinear propagation and velocity of light. The photometer. The laws of reflection. Plane and spherical mirrors. Laws of refraction, the prism. Lenses. The astronomical telescope. The composition of white light. Dispersion. Spectra. General conceptions in regard to the phænomena of the emission, reflection, transmission, absorption. Fundamental conceptions of crystallography.

In the course in Physics, it is insisted that special attention be paid to such phænomena as may be readily observed ; and that also regard be had to their practical application. During the course, the pupils develope on the blackboard the conceptions previously taught. The various measurements, the use of the principal instruments described in the course, and the solution of physical problems, are learnt and undertaken in the physical and chemical laboratory.

Chemistry. Class I, age 18. (Two hours per week, together with two hours' laboratory practice per week).—Chemistry. Generalities. Simple and compound bodies. Physical mixture and chemical combination. Metalloids and metals. Acids, bases, salts, and neutral bodies. Principal laws, the atomic theory. Chemical notation and nomenclature. Hydrogen, chlorine, bromine, iodine, fluorine, oxygen. Combustion ; water. Sulphur. Sulphurous and sulphuric acid. Sulphuretted hydrogen. Nitrogen, atmospheric air, oxides of nitrogen, nitric acid, ammonia. Phosphorus, phosphoretted hydrogen. Phosphoric acids. Arsenic and antimony. Carbon. Carbon monoxide, carbonic anhydride. Disulphide of carbon. Carbides of hydrogen ; coal-gas. Flame. Silicon and boron. Metals. Generalities. Metallic oxides. Principal salts. Alloys. Classification. Study of ordinary metals, and of their most important salts.

Laboratory practice includes the ordinary chemical manipulation.

Cosmography. Class I, age 18. (One hour per week).—The earth ; its form, magnitude, atmosphere, heating by the sun. Universal attraction. The fixed stars. Distinctive characters. Principal constellations. The diurnal movement. Its characteristics. Proofs of the earth's rotation. Astronomical instruments. Determination of longitude and latitude. The annual motion of the earth. Its characteristics. Proof of the motion of translation of the earth. Form and magnitude of the terrestrial orbit. Law of sectorial areas. Precession of the equinoxes. Measurement of time. The Roman calendar. The Gregorian reform. The sun : Form, magnitude, physical constitution and motions. The moon : Form, magnitude, physical constitution, movements and phases.

Eclipses of the sun and moon. The planets. Generalities concerning them. Kepler's laws.

Details concerning the principal planets. Comets. Shooting stars. Star-clusters. Nebulæ.

Geography.—Class IV, age 15. (Three hours per week).—Construction of globes and maps. Scale. Planimetry. Form of surface. Reading the military maps.

General geography of Europe.—Limits, dimensions, configuration. Place of Europe in the old continent and in the world. The seas of Europe. Development of its coast-line. Surface formation of Europe. General features of its relief. Division in natural regions. Centres of distribution and general directions of its streams. Principal groups of lakes. Climates. Distribution of its flora and fauna, etc. Zonal distribution. European races and families. Religions, languages, density of population.

Special geography of the countries of Europe.—Situation, form, surface formation, orography, hydrography, for each of them. Analytic distribution of towns and cities. Climates. The relations between vegetation and climate. Economic conditions. Agricultural and mineral resources, industries, roads of communication, external commerce. Population, languages, religions. Government. Material and moral state.

Comparison of the productive energy of different European States. Principal industrial regions. International railroads.

Geography continued.—Class III, age 16. (Three hours per week).—General geography of Asia, Africa, America, and Oceania. General view of each part of the world. Situation, form, seas and sea-shores. Characteristic features of geological constitution and physical geography. Climates. Distribution of plants and animals. Populations. Aboriginal races. Immigration. Languages, religions, density of population.

Description of countries and colonies.—Situation, general configuration, relief of the surface, and streams for each one of them. Historical regions. Principal cities. Economic conditions. Principal agricultural, mineral, and industrial productions. Lines of communication. Relations with Europe. Populations, languages, religions, governments. Material and moral state.

General considerations.—History of great discoveries. Résumé of the productive energy of the globe. Principal markets. Great international lines of communication by land and sea. Expansion of European colonisation.

Geography. Class II, 17 years. (Two hours per week.) Physical Geography.—The earth : its general aspect and structure. The atmosphere. Distribution of heat upon the surface of the earth. Isothermal lines. Barometric pressure and isobars. Movements of the atmosphere. Atmospheric precipitation. Classification of climate. Oceans, depth, saltness, temperature. Waves. Tides. Ocean-currents. The land. Plains, plateaux, mountains. Volcanoes and their geographical distribution. Earth tremors. Continental waters. Glaciers. Streams and rivers, lakes, régime of streams. Plant and animal zones.

National history and geography. Class I, 18 years. (Two hours per week).—Review of the history and geography of Switzerland. Object of historical and geographical teaching. Its educational bearing. Method to be followed. Examination and mode of using manuals. Practical exercises with classes.

Common Law and Civic Instruction. Class II, age 17. (Two hours per week).—Common law.—General conceptions concerning individuals and the family. Laws. Etat civil. Guardianships. Marriage and its civil consequences, etc. Study of the principal laws of the federal code which have regard to individual obligations to the State. Obligation and contracts. Effects. Execution. Extinction. Evidence. Sale and exchange. Rent. Warrant. Attorneys. Contracts of transport, particularly as regards railroads. (Special federal law.) Loans, security, mortgage, etc. Bills of Exchange, Cheques. Letters of credit. Ordinary associations. Associations under collective name. Joint stock companies. "Sociétés anonymes." Rights of commerce. Commercial register. Account-book. Insurance. Patents. Trade marks. Industrial and artistic property. (Special federal law.) Inheritances and wills.

Civic instruction.—The man and the citizen. The rights and duties, individual and social. Constitutional conceptions. National sovereignty. Government and its different forms. The Constitution. Separation of the powers of State : legislative, executive, judiciary. The commune and its diplomatic relationships. Study of the Federal and of the Genevese constitutions.

Hygiene.—Class I, age 18 (One hour per week).—The air and ground from the point of view of their general influence upon health. Dwelling-houses. The conditions of health in regard to the dwelling ; position, construction, dimension, management. Ventilation, heating, and lighting.

Clothing.—Property of the different materials for clothing. Form of clothing. Hygienic use of clothing.

Foods.—Their end. Nutritive power and digestibility. Principal foods and the commonest adulterations. Condiments. Kitchen and table utensils. Drinking fluids. Potable water, its qualities, and various sources. Danger of impure waters. Purification of water. Acid and acidulated drinks. Aromatic drinks. Alcoholic drinks (fermented, distilled). Their use and abuse. Alcoholism. Proper alimentary regime. Care of the body. Ablution, bathing, douches. Care of the hair, of the teeth, etc. Exercise. In general. Various special exercises. Conceptions in regard to the transmission of contagious maladies. General prophylaxis. The elements of school-hygiene.

Elocution, etc. (One hour a week for the four years).—Theory and practice of the art of reading and speaking. Pronunciation, articulation, accent. Seeking out the emphatic words, principal and incidental phrases. Correction of defects of pronunciation. Recitation of select pieces. The processes of pronunciation. Vowels and consonants. Reading of authors of the 18th and 19th centuries by the master and by the pupils. Improvisation exercises (extempore speaking, etc.) Prose and poetry, recitations. Recitation and reading. The nuances of pronunciation. Correction of defects of articulation (enunciation). Tone modulation. Reading by articulation alone, without the use of the voice organs (silent reading).

Drawing.—Two hours a week during each of the four years.

Egyptian,

Egyptian, Assyrian, and Greek Art.—Demonstrations by means of drawings, photographs, and models representing the most characteristic monuments. Freehand-drawing and sketching of constructive, decorative and furniture elements. Flowers and plants from nature and their decorative applications. Drawing from memory and picture-drawing.

Perspective.—The various methods of normal perspective. Picture plane, point of view, distance point, line of the horizon. Pavement with application of shading.

Roman and Medieval Art.—Demonstration from drawings and photographs representing the most characteristic monuments of Roman and Medieval art. Sketching. Freehand-drawing and sketching from constructive and decorative elements, and also furniture. Of flowers and plants from nature. Decorative applications. Drawing from memory. Picture drawing.

Perspective.—Scale of heights. Perspective of elevations. Very simple objects from nature to scale and in perspective.

Freehand drawing of simple types borrowed from the art of the Oriental epoch. Furniture dwellings, religious edifices and their decoration. Flowers and plants from nature, conventional developments from them, and their application to decoration. Drawing from memory. Composition. Normal perspective of natural objects.

School of application. Class I., 18 years. (One hour a week).—Lessons are given by the pupils in the various classes of primary-schools during this last year, under direction and criticism. (The whole pædagogic experience is under the hands of highly educated teachers, who have passed through the same education as has been here outlined. The instructors in the pædagogical section have passed also a still higher course.)

The other subjects mentioned in the time-table are taught equally well, and the subjects are treated in the same methodical and exhaustive manner.

The above programme may be taken as sufficiently indicating the conceptions of the French-Swiss in regard to what constitutes a reasonable course, in pædagogical training. In order to fully grasp the significance of the course, however, it is necessary to bear in mind the illustrious history and traditions of Switzerland in regard to education, and to recollect at the same time that the higher Swiss pædagogue has the most lively appreciation of the great work of such men as Rousseau, Pestalozzi, Fellenberg, and Père Girard.

8. *The admission to the Normal School in the Canton of Vaud.*—The programme of the entrance examination to the Normal Schools of the Canton of Vaud is as follows:—

(1.) Reading.—Prose and poetry with summary, analytical reading, with rational discussion.
(2.) Grammar.—Grammatical and logical analysis, various forms of proposition.
(3.) Composition.
(4.) Dictation.
(5.) Arithmetic.—(*a*) *Oral* examination; oral solution and the reasoning of a problem upon whole and decimal numbers; ordinary fractions; the Metric System; Proportion and Interest, specially from the point of view of mental calculation. (*b*) *Written* examination; written solution of a number of arithmetical problems, of various degrees of difficulty, with whole or decimal numbers, or ordinary fractions; the Metric System.
(7.) Geography and History.—(*a*) Geography; knowledge of geographical terms; geography of Switzerland and Europe, and particularly of the countries adjoining Switzerland. General notions in regard to the other continents. (*b*) Principal facts of Swiss history to the end of the 18th century. Those who have not studied Swiss history must pass in the principal facts of general history up to the same epoch.
(8.) Singing.—The examination aims at ascertaining the correctness of the ear and the quality of the voice of the candidate.

The training course for men is four years, and for women three. The subjects are as hereunder and are indicated as for men, special attention being drawn where the course is different for women:—

(1.) Pædagogy.
(2.) French language and literature.
(3.) Arithmetic, commercial and agricultural book-keeping.
(4.) The elements of Algebra, of Geometry. Practical exercises in Surveying. (Women take only the elements of Geometry.)
(5.) Geography and Cosmography.
(6.) History.
(7.) Civic instruction.
(8.) German. (Optional for women).
(9.) General Physics.
(10.) The elements of Chemistry and of the Natural Sciences.
(11.) Hygiene.
(12.) Caligraphy.
(13.) Vocal and Instrumental Music.
(14.) Drawing.
(15.) Manual work. (Women take needlework instead.)
(16.) Elementary notions of Agriculture. (Women take instead domestic economy.)
(17.) Gymnastics.

Candidates for the final examination must be at least 19 years of age. The written examination precedes the oral, and the marks range from one to ten.

9. *Details of the Zurich System.*—The following subjects are those of the Zurich course:—

(1.) Pædagogy and Methodology.—(*a*) History of Pædagogy. (*b*) General Pædagogy. (*c*) Methodology. (*d*) Test lessons in the school.
(2.) German.—(*a*) Grammar, poetry, and literary style. (*b*) Reading and explanation. (*c*) Literature. (*d*) Composition.
(3.) French.—(*a*) Grammar, reading, translation, conversation. (*b*) Knowledge of literature. (*c*) Composition.
(4.) History.—(*a*) General History. (*b*) Swiss history.
(5.) The history of religion (optional, no examination).
(6.) Mathematics.—(*a*) Algebra. (*b*) Geometry. (*c*) Numerical calculation. (*d*) Practical Mathematics (field surveying, etc.).

The

The examination in Mathematics is divided into two stages. In the second part, combinations and the binomial theorem, complex numbers, the principal properties of higher equations and of algebraical functions, and also spherical trigonometry, are taken.

(7.) Natural Science Subjects.—(*a*) Botany and Zoology. (*b*) Chemistry. (*c*) Mineralogy, and Geology. (*d*) Physics and Physiology.
(8.) Geography.—(*a*) Special Geography. (*b*) Mathematical and Physical Geography.
(9.) Music.—(*a*) Theory and principles of musical composition. (*b*) Singing. (*c*) Violin playing. (*d*) Pianoforte (optional).
(10.) Drawing.—(*a*) Freehand drawing from Nature. (*b*) Linear drawing. Previous work must be shewn.
(11.) Caligraphy.—(*a*) Writing on the board, and exhibition of writing.
(12.) Gymnastics.—(*a*) Methodical knowledge. (*b*) Practical skill.

The marks range from 1 to 5. 1 and 2 denote "weak" and "insufficient," 3 is "sufficient" to pass, and 4 and 5 are "good" and "very good." In reckoning the average of the marks, general history is given double value. The mean is then taken by dividing the total number of marks by the number of examination subjects, and every candidate whose mean-result is $2\frac{1}{2}$ or less is deemed to have failed. Those whose mean marking lies between $2\frac{1}{2}$ and 3 have not wholly failed, and are allowed a further examination the following year. Those whose markings lies between 3 and $3\frac{1}{2}$ are subject to direction by the committee as to what subjects they must offer at a subsequent examination, which they must pass satisfactorily.

10. *Scheme of Instruction at the Küsnacht Training College*—The Küsnacht Training College is one of the largest and best in Switzerland, and there is a special professor of "Pædagogy and Method," who is at the same time head-master of the practising school, where, moreover, he has a certificated assistant. The following programmes of obligatory and optional subjects for the four years of the course will give some indication of the range of work done therein.

Normal Plan of Instruction.

Subject.	Hours per Week (S., summer; W., winter).				
	I.	II.	III.	IV.	Total.
Pædagogy and Methodology	...	1	4	5	10
German	6	5	5	4	20
French	4	4	3	3	14
History	3	2	3	3	11
History of Religion	...	1	2	1	4
Geography	2	2	1	1	6
Mathematics	5	5	S. 4, W. 5	5	$19\frac{1}{2}$
Natural Science	4	5	S. 5, W. 4	5	$18\frac{1}{2}$
Singing	3	3	3	3	12
Violin or Piano	2	2	1	1	6
Drawing	3	3	3	3	12
Writing	2	1	...	...	3
Gymnastic	2	2	2	2	8
	36	36	36	36	144
Optional—					
English or Italian	S. —, W. 2	2	2	S. 2, W. —	6
Piano or Violin	1	1	1	1	4

Once the optional subject is selected, its study must be carried on.

The pædagogy includes the history of education, and the methodology is taught by each lecturer for his own subject. The whole of the students in the last year listen to model-lessons given by the professor, and are subsequently discussed. In rotation, students go three or four times during the year, for three days each time, to study the organisation of the practising-school, and to give lessons under guidance; they correct errors in written exercises, and so on. Each student must make a written report of his visit, and has, moreover, to teach certain subjects to a class continuously for two or three weeks. At the end of the last year he is allowed to undertake the whole management of the practising-school with its four classes of about sixty pupils, of ages ranging from 6 to 10.

11. *Training Schools in Hungary.*—One of the most splendid schools seen by the Commissioners was the Superior Normal School, "Queen Elizabeth," at Budapest. The building and its equipment were a revelation of how incomparably different is the Hungarian people's estimate of what is desirable in the way of a training college, for the education of teachers, from our own estimate.

The first normal schools of Hungary date from 1840. At the beginning they had two courses, and were without a practising school, and were, without exception, denominational. The primary education law of 1868 submitted the entire system to a radical change, and distinguished clearly between the education for primary elementary-school teachers and primary and superior education.

According to Hungarian law, a normal school must have its special building; its teaching personnel independent of all other institutions; an elementary primary practising school of six classes; and also a garden for the purpose of demonstration in agriculture and horticulture, etc.

The course is three years; and at the end of each year the students, on passing an examination, are admitted to the next higher class. After finishing the three-years' course, and passing an examination as to their aptitude, they receive a diploma as primary-school teacher, provided that they have had two years' practice or more. In this examination the interrogatory covers the whole of the subjects declared obligatory by the law.

Admission

Admission connot be before 15 in the case of youths, nor before 14 in the case of girls. Candidates of both sections must be of blameless life, good constitution, and in sound health. The male are non-resident and female resident in the "écoles normales." The subjects of instruction:—

(1) Religion and morals.
(2) Pædagogy.
(3) Teaching Method.
(4) Geography.
(5) History.
(6) Mother Tongue.
(7) Hungarian Language.
(8) German Language.
(9) Mathematics.
(10) Physical and Natural Science.
(11) Rural Economy, with practical agricultural and horticultural demonstrations.
(12) Hungarian Constitution.
(13) Singing and Music.
(14) Drawing and Caligraphy.
(15) Physical Exercises.
(16) Practice in Teaching in a School of Application.

The above is the programme for male teachers; for females the same subjects must be taken, excepting music and physical exercises. A course of housekeeping replaces agricultural economy.

In order to realise how these subjects are taught, it is necessary to remember that Herbart's influence is very strong in Hungary. Professor Rein, of Jena, Dr. Kármán, of Budapest, and Dr. Vérédy, Chief Inspector of Budapest, were all comrades of the Leipzig Seminarium, and are all zealous Herbartians. The general scheme of instruction, with its unity of plan, the teaching methods, the utilisation of the pupils' environments, and the school journeys, etc., books, language-teaching, and training college are all impregnated with the Herbartian ideas. Reference has been previously made to the influence of the secondary-school teacher upon the primary-school teacher. In this connection, it may be mentioned that the students at the Budapest Pædagogical Seminary are men who have spent eight years in a secondary school, four years in a University, and have also passed a general and special examination.

The Hungarian Government, with a view of keeping its educational system well advanced, send out from time to time qualified teachers to report on the education of other countries, and to broaden their own views.

CHAPTER XXXVIII.

Training of Teachers in Germany.

[G. H. KNIBBS.]

1. *German View of Education.*—Professor Dr. W. Rein, of Jena, contributed in 1898 a paper on "The Drift in German Education"[1] to the Special Reports Department of the Board of Education, London,[2] the divisions of his paper being:—

A. On the education of teachers—1. Participation of the Universities in the matter of education; 2. Education of teachers for higher schools; 3. *Education of teachers for folk schools.*

B. On school organisation—1. The State, Church, community, family; 2. Common folk school; 3. Continuation and professional schools; 4. Higher schools.

He opens with the following weighty sentences:—"*The future of a people depends upon a right development and strengthening of its working power. That is the capital upon which the economic and political independence of a people rests. Therefore, the problem for all who have the well-being and progress of the nation at heart must be directed to strengthening and increasing this national capital.* Now there are two elements embraced, *viz.*, the *ideal* and the *material*, in so far as the working power of a people is concerned; on the one hand the raising and reinforcing the spiritual endowments, science and art, morality and religion; the other, the multiplication and extension of the material goods, whether belonging to original production, industry, or commerce. The latter is cared for by the State through its economic policy, the former by the superintendence of the school and educational organisations."[3]

This shews the German point of view as to the real function of education; and this, after all, is the view of all educationists who have any outlook.

After combatting the materialistic position of Marx, in affirming that all development, whether moral or intellectual, is merely the outcome of the economic position of the moment, he points out that external hindrances and obstacles can be overpowered; but that, as testified in the history of Rome, riches may increase, but decline of religious and moral energies nevertheless shatter a nation as it does an individual. In his view, it is the *ideal and not economic might* which should play the leading rôle. When the spiritual element vanishes, then the worth of the individual sinks, and the community perishes. And thus, he continues: "Before this background, the work of the school and of education discloses its reality," *no unimportant matter for a statecraft that would influence the future of a people* so that it shall walk in the right way. And

[1] Strömungen auf dem Gebiet des Schul und Bildungswesen in Deutschland. [2] Vol. 3, pp. 415-460.
[3] Vol. 3, p. 416. Translation is as nearly as possible literal.

And further: "At the side of statecraft stands pædagogy—the science of education,—pointing out the certain way for the unfolding of the health, power, and activity of the rising generation, so that it may become strong."[1]

Such is the outlook of a German educationist on the problem of the *education of the people*, and that is the view that must take possession of us also if our people are to progress and be worthy of their heritage.

2. *Insufficiency of German Universities as regards the Science of Education.*—Dr. Rein points out that while political economy has been well represented in the University education by such men as Schmoller, Wagner, Brentano and others, the science of education has lagged behind; and while men like Eucken in Jena, Baumann at Gottingen, Jurgen Bona Meyer at Bonn, L. Meyer at Tübingen, Paulsen at Berlin, Schiller at Giessen, Uhlig at Heidelberg, Vogt at Vienna, Willman at Prague[2], and Ziegler at Strasburg have all worked devotedly in the field of pædagogy, the University provision is inadequate.

He points out the seriousness of this; that it is a matter for profound regret that the centres of scientific research (the Universities) should fail to maintain close sympathy with the predominant tendencies of the people. This *remark is worth our taking seriously to heart* in the State of New South Wales. The need of greater touch between the University and those who, by teaching our children, are to develope the tendencies of our people is obvious to every thoughtful mind.

Dr. Rein refers to the appointment by the Education Department in Berlin of chairs of education in Berlin and Halle. It may be remarked that in the half decade since this was written much has been done to intensify the study of education as a science, not only in Germany, but all over the world.

3. *The importance of the training of Teachers for Primary Schools.*—Some idea of the magnitude of the work of teacher preparation in that country alone can be had by remembering that in it there are over 100,000 persons engaged in elementary school teaching. And it is worthy of note that the educationists of Germany do not view with complacency the attitude that it is sufficient to equip the children of the masses with reading, writing, arithmetic, and religion—in other words, to resign them to the portion of the poor and lowly, with which perforce they must be contented.

No American could more strongly put the case for popular education than does Dr. Rein. He says: "Christianity has set on high the value of the individual human soul—an immense step forward. In former times, man, like anything else, was a chattel; to-day he is a free personality, whose independent education in the social organism is assured. No despot's command, be it never so powerful, can annul the idea of the freedom of a Christian man. On this human institutions are shattered. To freedom belongs, before all, the inner equipment of the personality. A wise statesmanship, therefore, in dealing with this popular need for education, craving satisfaction with an equal urgency as does the need for food, will try to put it on the right road, and safeguard its progress on the ascending path."

This development of the people may be achieved through education. Speaking of the need for the teaching staff to keep abreast of modern progress, Dr. Rein says: "*With the forward movement of the people, the teachers' education must keep pace, not hanging behind popular education, but rather preceding it*"; not, however, so much as to lose sympathy and touch with the people, for then its lead might fail. He points out that if it be demanded that *every* primary teacher's education should be completed in the University, the strain is over tense, and unnecessary.

4. *German "Preparing Schools" for Primary Teachers.*—In considering the German system of training primary teachers, it has to be borne in mind that the aim of the primary school (folk school) is not so high in Germany as it is in any democratic country—for example, America, Switzerland, etc. Each year, however, is making a difference, and the spirit of progress is rapidly changing the popular idea. The belief in the *education of the people* as a whole will soon revolutionise the German folk school for the better.

Boys who desire to become teachers, after receiving their primary-school education, generally enter a higher school, the special work of which is to prepare them for the training college. These are known as Präparanden Anstalten (preparing schools). These are generally affiliated with the training colleges, and may be in private hands, belong to the municipalities or to the Government.

The work in the preparing schools amounts to 30–35 hours in class per week, beside eighteen hours preparation out of school and practice of musical instruments, etc.

Admission to the preparing school takes place either at 15 years of age, as at Wandersleben, etc., where the course is two years, or at 14 years of age, when the course is three years, as at Oranienburg, etc.; so that in any case the lad is 17 years of age before he enters the training college. The recent tendency has been to convert all the preparing schools into three-year schools.

Admission is determined through examination by the Principal and Staff, and *continuation in the course* by tests of progress during its currency, scholars whose progress is indifferent being sent away.

The following time-table will give some idea of the work done:—

PREPARING SCHOOL, WANDERSLEBEN.

Hour.	*Year.*	*Monday.*	*Tuesday.*	*Wednesday.*	*Thursday.*	*Friday.*	*Saturday.*
7–8	I	Arithmetic	Bible History	Arithmetic	Catechism	Natural History	Church Music
	II	Bible History	Arithmetic	Catechism	Geography	Catechism	Physics
8–9	I	Catechism	Grammar	Oral Discussion	Geometry	Bible History	Oral Discussion
	II	Geometry	Oral Discussion	Arithmetic	Bible History	Arithmetic	"
9–10	I	Geography	French	Natural History	Grammar	Physics	Essay
	II	Church Music	Piano	French	Natural History	French	Geography
10–11	I	History	Physics	Harmony	Geography	"	Arithmetic
	II	Natural History	Writing	Grammar	Geometry	Piano	Harmony
11–12	I	Piano	Drawing	Organ	Piano	Drawing	Piano
	II	Essay	"	History	Writing	Grammar	History
12–2	I	Recreation	.....	.....	.....	.....	.....
2–3	I	Violin	Geometry	.....	Violin	History	.....
	II	"	.....	.....	"	.....	.....
3–4	I	"	History	.....	"	Writing	.....
	II	"	.....	.....	"	.....	.....
4–5	I	Singing	.....	.....	Singing	.....	.....
	II	"	.....	.....	"	.....	.....

5.

[1] Vol. 3, p. 417.

[2] It is but proper to acknowledge here the very great kindness shewn to the Commissioners by Dr. Willmann at Prague,

5. *Prussian Training Colleges for Primary Teachers.*—On leaving the preparing school at 17 the candidate for a primary teachership enters a training college for three years, where he is usually employed as follows:—

First year.—Studies "History and Theory of Pædagogy."

Second year.—Teaches a very little, after very thorough preparation (at Oranienburg, one hour a month for about nine months; in last three months somewhat more, standing by and observing teaching a good deal).

Third year.—Teaches 6–8 hours a week, taking a subject continuously for ten weeks, then passes on to another.

At the end, a 2–3 days' written examination has to be passed, and also a short oral examination in all subjects. There are few failures, because all indifferent students have been weeded out, either in the preparing school or the training college. On passing, the candidate receives a sort of *provisional certificate.*

Each student on reception into the college engages under a bond not to leave of his free-will before the end of course, and not to refuse any post offered him for five years after passing.

In from two to five years after receipt of the provisional certificate, a *second examination* has to be passed. Its object is to ascertain whether or not the provisional teacher has acquired practical skill, a deeper knowledge of educational principles, and extended his general culture; but it does not test mere details of knowledge. It is possible also, if the candidate so desires, for him to be tested in any subjects in which he was weak at the previous examination. In this way he can improve his position. The examination covers the following programme:—

(*a*) Written. Essay—(I) A subject of school management; (II) A religious or ethical subject; (III) A secular subject of instruction.

(*b*) Practical teaching. Lesson on a subject selected on the previous day.

(*c*) Oral examination in Historical, Theoretical, and Practical Pædagogy.

Special success in both examinations qualifies for lower classes in Mittelschulen (middle schools) and for höhere Töchterschulen (higher girls' schools).

To qualify for higher classes, a *third examination* has to be passed, viz., the "Mittelschulprüfung" (middle school examination), and if the position of rector or head-master of a full school (six or more classes) is coveted, or tutorship in a training college, a *fourth examination* must be passed, viz., the "Rektoratsprüfung" (rectorate examination).

The staff of a training college is usually the following:—

Office.	Qualification.
Direktor (Director)	Almost invariably men of University education.
Oberlehrer (Professor or Head-teacher)	
Lehrer (Tutors or Teachers)	Must possess rector's certificates.

The numbers of students who are residential and non-residential are about the same. The extra cost of residence, etc., to the student is about £10 a year; the total cost to the non-resident is about £30 a year.

The above represents the education in teaching for men. For women it is given in a secondary school; and it may be mentioned that the social status of women teachers is usually much higher than it is for men.

6. *Training of Teachers in Saxony.*—In Saxony the system is different, the candidates being admitted at 13 after successfully passing an entrance examination, and the course is six years; so that in the Saxon system the preparing-school and the training college are united. The following is the programme of work:—

Subject.	Years.					
Religion	4	4	4	4	4	3
German	3-4	3-4	3-4	3-4	4	3
Latin	7-6	7-6	5-4	4-3	2	2
History	2	2	2	2	2	2
Geography	2	2	2	2	2	2
Natural Science	2	2	3	3	2	2
Arithmetic. Geometry	4	4	5	4	4	3
Theory of Pædagogy	.....	.....	.....	4	5	5
Teaching Practice	.....	.....	.....	.....	4	4
Music	6	4-6	4-7	3-6	3-5	3-5
Stenography (optional)	.....	2	2	1	.....	.....
Gymnastics	3	3	3	3	2	2
Drawing. Freehand	2	2	2	2	Private. Examined quarterly.	
Geometrical	.....	.....	.....	.....	1	1

The teaching practice in years five and six consists mainly of watching teaching, and very little actual teaching is done. The students of the last two years are divided into groups of about six, and hear lessons given illustrating matter previously treated theoretically, one series of subjects being adhered to till completed. At the close of the course, examinations are held, under the oversight of a Commissioner appointed by the Government (*Ministerium*). These examinations, Abgangsprüfung oder Schulamtskandidatenprüfung (departure examination, or examination of candidates for school offices), embrace:—

(*a*) *Theses* (written in ten days, not under supervision). (i) Essay on educational subject. (ii) Full notes of lesson on a religious subject.

(*b*) Written examination (four days, under surveillance). Mathematics, "Realien," Music, Latin translation.

(*c*) Practical examination. (i) Delivery of above lesson on religious subject. (ii) Twenty minutes' lesson, after one day's preparation. (iii) Drawing, writing, music, gymnastics.

(*d*) Oral examination. All subjects; about four hours for six students. Students who fail may have a second, but not a third examination; but failure is very rare.

On

On passing, a teacher is qualified as assistant; and to qualify for the independent charge of a school he must pass a second or *eligibility examination* (Zweite Prüfung oder Wahlfähigkeitsprüfung), not before three nor more than five years after the former. This embraces:—

(*a*) *Theses.* (fourteen days allowed; no supervision). (i) Essay on educational subject. (ii) Sketch of lesson. (iii) Questions of method, etc. (under supervision).
(*b*) Practical examination. Half-hour lesson, after half-day's preparation.
(*c*) Oral examination. Religion, German, psychology, pædagogy.

The examining Commission classify on the basis of both examinations. Those who receive first-class go to the University of Leipzig for two years, taking up pædagogy as their special subject. Those who get second-class passes may also go on to the University, but only with the consent of the Ministerium.

This feature is very much appreciated, and the progress of teachers to distinguished positions is thus made possible in Saxony.

The admission for women is at 14, with a five-year course, or 15, with a four-year course.

The subjects are as follows:—

Subjects.	Years.				
	(1)	(2)	(3)	(4)	(5)
Religion	3	3	3	2	2
German	4	4	3	3	3
French	4	4	4	4	4
English (optional)	3	3	3	3	3
History	2	2	2	2	2
Geography	2	2	2	1	1
Natural Science	3	3	3	2	2
Arithmetic and Geometry	3	3	3	2	2
Pædagogy, Theory	.....	.....	4	5	5
,, Practice	.....	.....	.....	3	3
Music	4	4	4	4	4
Caligraphy	1	1	1	.....	.....
Stenograpy (optional)	2	2	.....	.....	.....
Gymnastics	2	2	2	2	2
Drawing	2	2	2	2	2
Needlework	2	2	2	2	2

7. *The Jena Seminarium.*—The details of teacher-training at Jena are given in the next chapter, and may be regarded as supplementary information, shewing how thoroughly the professional training of teachers is carried out in Germany.

CHAPTER XXXIX.

CHAPTER XXXIX.

The Jena Practising School.

[G. H. KNIBBS.]

1. *The Jena Seminarium.*—In order to give a more exact conception of the definiteness of the professional training of teachers in Germany, the following translation of the "Ordnung des pädagogischen Universitäts-Seminars zu Jena und seiner Uebungs-schule" has been made, the original pamphlet having been very kindly forwarded to the Commissioners by Professor Dr. W. Rein, the Director of the Seminarium. The details given will serve to shew that teachers are really thoroughly prepared, trained and practised in the art of teaching before professionally engaging in it.

2. *Some English References to Jena.*—The reputation of the Jena Seminarium and of Dr. Rein are so widely known that it is almost an impertinence to make any comment in regard thereto. The following remarks, however, from the very able paper of Mr. J. J. Findlay, Headmaster of the Cardiff Intermediate School for Boys, and formerly Principal of the College of Preceptors' Training Department for Teachers in Secondary Schools, on "The Study of Education,"[1] are of interest. Speaking of training colleges and their small attached demonstration schools, he says:—"There is the famous little school at Jena, conducted by Professor Rein," and he goes on to point out how excellent these adjunct schools are. His words are:—

> A Demonstration School is bound to be kept up to the mark, or else it would bring the whole institution into disrepute. It stands before the public gaze in a way that other schools do not. Its staff are not only teachers of the children, but demonstrators to the students; they cannot assume such a position unless they are efficient. Further, an amount of attention is bestowed on every part of the organisation, the curriculum, and upon each individual pupil, which is neither possible nor necessary in the ordinary school. Against these advantages there is, undoubtedly, the necessary evil that the pupils are taught by a greater variety of teachers than is usual elsewhere, and many of these are beginners. Nevertheless, the beginners are obliged to make careful preparation for every lesson, and thus the evil is greatly diminished.
>
> So far as the boys are concerned, the work of education goes on in a demonstration school such as that at Jena exactly as it does in other schools. True, there are generally several adults in the room as well as the boys, and when a student is teaching the class the form master is also present. The boys, of course, know why he is there, and know that the student is a student; but it is the custom of the place, and the process of teaching is not disturbed. The whole institution is organised so that training may proceed without disturbance, and boys become quickly habituated to the system.
>
> This is an additional reason for having a school wholly devoted to the purposes of training; there is less disturbance and irregularity in such an arrangement than in plans which require students and demonstrators to go to other schools as visitors. In the latter case special arrangements are always necessary, and the disturbance of order is an evil which pupils feel as much as their teachers. The teachers are always willing to take the necessary trouble, but the pupils can hardly get over the feeling that the instruction by their visitors is of an amateur type.
>
> It will be evident to the reader that the staff of teachers in a School for Demonstration and Practice, if they also act as guides to students, must increase beyond the provision necessary for the school classes; but this is a question of finance, and is not fundamental to the problem before us. There is no doubt that training for any profession is a costly process, and the work will be badly done if it is not adequately supported. But the lack of means, while it may lead us to hesitate to embark on schemes of training, ought not to serve as a plea for countenancing schemes which tend to injure, rather than improve, the teachers' power. If it is expedient to train teachers at all, it is surely expedient to conduct that training on principles which the experience both of our own and of other professions have approved.[2]

3. *A University Seminarium.*—The attachment of the training college or seminarium, as at Jena, to a University, has many obvious advantages. The university influences and traditions, the wider and more liberal culture, of which universities are the repository, tend to develope liberality of view, and large outlook, and to oppose the contrary tendencies of mere professionalism. The daily intercourse with all classes of university students will tend also to intensify sympathy between the students of different professions. Through daily conversation, a fuller knowledge of each other's work is obtained, and a better appreciation of the various forms of professional aspiration. Not only will the teacher in daily touch with university life reach a better understanding of the trend of human achievement in literature, art and science, and a deeper knowledge of the aims and requirements of other professions, he will also be the means of imparting to others something of his own appreciation of the significance of education, and of the aspirations of the school teacher. It is hardly possible in any other way to bring about a liberal and cultured outlook upon those higher requirements and needs of the human race to which university life is, more than any other, open, and in regard to which the primary-school teacher, whose duty it is to lead us in our first steps in the path of education, stands in so much need.

Daily contact with the ignorance and immaturity of childhood may, and often does, lead to fatal blindness of one's standing in the intellectual world; but, if the teacher commence his professional career with a broad education and a large outlook, not only is he forced to keep in touch with general progress, but even the child life with which he is in daily contact offers material for study of the profoundest interest and difficulty. Thus the teacher is saved from becoming a pedant, and becomes a pædagogue, not in the narrow, but in the noble sense. It would be hard to over-estimate the value of university influence from this point of view.

It need hardly be mentioned that the teaching equipment of the university also offers unique advantages. 4.

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[1] Special Reports on Educational Subjects, London. Vol. 2, pp. 337–377.
[2] *Ibid*, pp. 366–367.

4. *The Regulations of the Seminarium at Jena.*—The following will give an idea of the *régime* of the Jena practising school:—

Prefatory Remarks.—The following regulations are for the purpose of rapidly acquainting incoming members of the Seminarium and its practising school with its general scheme. More accurate information may be had from the third "Seminarheft," in which the detailed Seminarium regulations are given, (see pp. 24–51.) These are actually an extract therefrom, with but slight changes, viz., as regards the order of the paragraphs.

While informing members of the Seminarium in regard to the duties to be fulfilled by them, these regulations will, at the same time, serve to give an insight into the spirit of the Institution, and the mission it has assigned itself. It will, on the one hand, contribute to the development of pædagogic science, and on the other hand to the scientific and practical training of earnest teachers. The whole organisation is designed to the attainment of this end.

ORGANISATION OF THE JENA PÆDAGOGIC UNIVERSITY SEMINARIUM AND ITS PRACTISING SCHOOL.

GENERAL REGULATIONS IN FORCE AT THE SEMINARIUM.

(I.) *Members and their duties.*

(*a*) Acquisition of Membership.—(1). Every regular or occasional student of the Jena University may at any time be admitted as member of the Seminarium, upon personal application to the Director. New members must be enrolled in the "Seminaralbum," with their name and calling.

(*b*) Classification of Members.—(2). Besides professors (Oberlehrer), there are ordinary members (Praktikanten)[1], extraordinary members, and auditors (Hospitanten.)[2] All members that have taken up studies at the Seminarschule, are classed as students (Praktikanten.) All members are required to attend the weekly meetings of the Seminarium.

(*c*) Professors (Oberlehrer). (3). Under supervision of the Director, the professors conduct all the practical school-work as class teachers. The Practising-school contains three classes, and consequently three professors.

(4) The professors instruct the ordinary students (Praktikanten) as to the preparation of lessons; receive written preparations, and submit them from time to time to the Director. They superintend the lessons given by "Praktikanten," and have the right to intervene in the teaching itself. Conversation with the students during the lesson is forbidden, only short instructions and hints being allowed. Critical observations on the lesson shall be given, if possible, by the professor to the student immediately upon its close. Only in exceptional cases are "Praktikanten" allowed to give independent lessons. From time to time each professor shall discuss with all his students the question of the concentration tables for the coming week, as well as in reference to uniform measures of government and discipline.

(*d*) The students. (Praktikanten.)—(5) The student must arrange with the proper professor and the class teacher concerned, in regard to the assumption of some subjects of instruction. Students must first attend lessons (hospitieren) in the subjects which they select for a considerable time as auditors before being allowed to do any practical teaching. It is desirable for them to furnish a written description of the instruction in which they have taken part.

(6) Every subject of instruction must be taken up for a "semester" (half-year.) *All teaching must be based on a written preparation, which so far as the matter will allow must have methodical unity of form.* The matter of instruction must be exactly and clearly articulated, the individual parts being indicated by marginal headings. Above all, the concentration questions (Konzentrationsfragen)[3] and the desired results of the synthesis and system are to be exactly defined, while the details of the instruction may be more freely shaped. Since the teaching in the practising school is based upon concentration, every student must familiarise himself with the concentration development of other subjects. He must further attend for some considerable time lessons in the subjects of instruction which are closely related to the one he has selected. Further, he is to study the intuitive means of instruction, especially pictures, etc., contained in the school museum.

(7) The first preparation is always to be handed to the senior professor, the following ones to the class teacher of the class in which the instruction is to be given. In teaching, the remarks of the professor and of the director thereon are to be regarded. The student must consider, also, the disciplinary regulations in force in the practising school.

(8) All questions and explanations of the teacher's are to be directed to the whole class. The children who desire to reply to the questions, indicate that desire by holding up the right hand, and by that sign only. A particular child is pointed to for the answer. Every scholar who desires information, must hold up his hand, and wait until the teacher inquires the cause. Restlessness in one's place, and reply without permission are to be regarded as disturbances of the lesson.

(*e*) Regarding members principally. (9) It is expected that the members of this Seminarium will, from public spirit, take part in as large a number as possible of the school festivities, May excursions, and the travelling excursions of the practising school.

(10) A special book has been devoted to information concerning Seminarium Festivities (Emperor's and Grand Dukes' birthdays, Christmas festivities, etc.). A member receives the news.

(11) The hospices of members attending instruction, and all interchange of thought concerning the same, and concerning the reports in the hospice-book, are peculiarly suited to further the maintenance and cultivation of a competitive *esprit*. Reciprocal hospices are specially recommended. Extraordinary members, too, should, as often as possible take the opportunity of attending lessons and using the hospice-book. Anyone criticised in the hospice-book has a right to enter a rejoinder,—the professor associated may make his own comments thereupon. No polemics are to be continued on to the next conference.

(12) In connection with the Christmas festivities for the pupils of the Seminarium's school, a banquet for the members of the Seminarium takes place in remembrance of the day of its foundation (9th December, 1843). This banquet also gives former members of the Seminarium opportunity of shewing their continued attachment.

(13) The Seminarium publishes from time to time serial parts (Seminarhefte). Communications for publication, especially about literary activity of late members, are much desired. So far nine parts (Hefte) have appeared. These may be had in the Seminarium from the professor at a price of 1, 1·50, 2, and 3 marks.

(*f*) *Departure from Seminarium.*—(14) Departure from the Seminarium, like admission, follows on personal application to the Director. Members leaving Jena are expected to remain in communication with the Seminarium, and especially also to furnish information for the "Seminaralbum."

(II.) *Weekly meetings of the Seminarium.*

(*a*) "Theoretikum." (15) In the "Theoretikum," held in one of the lecture halls of the University, ethical and psychological, especially professional (fachwissenschaftliche) and methodological questions are discussed. The Director conducts the discussion, every member of the Seminarium having the right to take part therein.

(*b*) "Praktikum." (16) The "Praktikum" consists of a "Trial lesson," before the Director and all members of the Seminarium; the students (Praktikanten), and sometimes even the professors being nominated for it by the Director. At least one "Praktikum" per week must be held.

(17) The "Praktikum" is not to be confused with examination, but must give a true representation of the student's teaching, and form therefore part of his general course of instruction. The preparation forming the basis for the instruction is to be exhibited for general inspection during the "Praktikum." The place is to be accurately indicated where the teaching in the "Praktikum" commences.

(18) The proper professor nominates for every "Praktikum" a chief critic, who must prepare a written criticism of it, to be handed to the "class teacher" the day before the conference, and be delivered afterwards to the Director. This criticism will be read and discussed at the Conference. A scheme for the criticism will be found in the appendix to the ninth "Seminarheft." (19)

[1] Practitioners who, in this case, are learning their art.

[2] Hospitanten are occasional auditors at lectures.

[3] Konzentrationsfragen are the questions which, being put in a lesson, direct the mind of the child to the fundamental elements, intensifying the attention, and concentrating it on those elements of the lesson in which its logical unity inheres.

(19) The reading of the criticism is preceded by a criticism by the student (Praktikant) himself, in which he openly expresses his ideas as to the mistakes made by him during the trial lesson, without having conferred with the nominated critic, or the professor, beforehand.

(20.) A Question Registrar (Frageprotokollant), nominated by the professor directly concerned, keeps a record during the "Praktikum", of the number of questions directed to the different pupils, and answered correctly, erroneously, or not at all; and further of the recapitulations made by the pupils, according to the following plan :—

Pupils.	Questions.				Recapitulations.		Total.	Average.
	Not answered.	Correctly answered.	Badly answered.	Erroneously answered.	Fluent.	Hesitating.		

These notes are to be used in the criticism. Criticism as well as the self-criticism are to be recorded in special books.

(c) *Conference.*—(21.) The conference is held weekly under superintendence of the Director, or in exceptional cases, that of the regular professor. General school-matters, and especially the weekly "Praktikum" form the subject of discussion. The conference is detailed according to the following categories :—(1.) New Registrar; (2.) Old minutes; (3.) Roll; (4.) Supervision between lessons; (5.) New "Praktikum"; (6.) Hospice-book; (7.) Generalities; (8.) Discussion of 'Praktikum"; (*a*) Reading of criticism by student himself, and general criticism; (*b*) Discussion.

The professor reads aloud the categories, that are to be treated, or whatever is necessary to be communicated. At the conclusion of the conference, a collection of regular contributions towards the expenses of the school excursion is made, it being the Registrar's duty to take charge thereof, and to hand the money thus collected to the professor. Besides the chief conference, the senior professor holds minor conferences, in which such matters as disturbances in school exercises, negligences, punishments, "Individuality books", weekly aim (concentration tables) etc., are discussed. Students are required to take part in these conferences.

(22.) The minutes are kept in turn by every one of the members (in alphabetic sequence). These must not contain the discussion in detail. Only points in dispute, reasons *pro* and *con*, and results, are to be embraced.

(23.) The main part of the conference must be devoted to the discussion of the "Praktikum," and will be introduced by reading aloud the "self-criticism." The last should indicate to the "Praktikanten" that they must look for an explanation of the mistakes made, *within themselves*, avoiding the attribution of fault to the pupils, or elsewhere. The self-criticism of the student is followed up by general criticism. At the close of the various parts a discussion follows, for which all members of the Seminarium are expected to prepare themselves.

The discussion must keep close to the point under debate, personal remarks and applications being avoided.

II. Regulations of the Seminarium's Practising School.

(*I.*) *Instructions concerning Administration.*

Introduction.—The Administration embraces all institutions, which the school needs for establishing and maintaining order, as a prerequisite for every kind of instructive or educative influence. Its aim is to establish suitable fixed practices in school life. To develope these, therefore, there must be, above all, on the part of teachers the most strict and punctual observance of all rules, which obviously have to be uniform.

(1.) Commencement of Instruction.—School begins in the summer semester at 7; in the winter at 8 o'clock (lower classes at 8 or 9 o'clock). The lessons start fifteen minutes after the hours, the school clock being standard.

(2.) Certain pupils are charged with small duties, such as to see that the material, books, apparatus, maps, pointer, boards, pencils, etc., are to hand at the right time and place. The teachers, when it is necessary, must themselves co-operate. These materials must not be sent for during the lesson.

(3.) At the beginning of every lesson the teacher, so long as no fixed custom has been developed, quickly ascertains if all is right by putting the question, "Is everything in order?" to the monitor. Reply in the affirmative having been received, a confirmatory glance round is made by the teacher. The children are to be accustomed, when the order to "sit down" is given, to report themselves if guilty of any neglect or omission of duty by remaining standing. These matters are to be quickly discharged, and disciplinary measures taken, either immediately, or at the close of the lesson.

(4.) Since the instruction can only operate favourably when the most thorough order prevails, the teacher must, as soon as the children have taken their seats, have careful regard to the following points :—

The children are to sit in their places in a decorous manner, but without restraint, with their eyes directed to the teacher, their hands resting quietly on the desk; they must also keep their legs quiet. The instruction must not begin until everything is in order, when the command "Ready," is given.

(*II.*) *Order during and at close of Lesson.*

(5.) The children are to be accustomed, as far as it is possible, to report their home-work, and also the object of the lesson.

(6.) Order must, as at the beginning, be maintained throughout the lesson. Unless this be attained, and especially if there be lack of attention, the teacher should not continue speaking, but must restore attention by suitable command, or by knocking.

(7.) The teacher must himself, during the instruction, occupy a definite place on the platform, from whence he can get a view of all the pupils. He looks steadily, but not exclusively, at any pupil who is speaking or answering a question. He must not, except under pressing necessity, turn his back upon the class or upon any pupil; nor must he vacate his place should a pupil happen to want special assistance. *Seizing hold of, or pulling a scholar back, is not permitted.*

It may be here stated that throughout Europe there is a very strong feeling against anything approaching to insolent encroachment on the personal dignity of the pupil. Such a thing as grasping a boy's ear, or roughly seizing him, is practically unknown. The well educated teachers of Europe respect themselves, and are taught also to respect the personal dignity of the children, *one of the best ways of teaching the children individual and mutual self-respect.* It may be further noticed that these lessons in self-respect commence in the Kindergartens, where mutual esteem and appreciation of individual liberty are strongly cultivated. The consequence of this was seen in the characteristically amiable and polite manners of the continental children. Throughout Europe it is strongly realised that a teacher must be gentlemanly in his manners to the children under his care.

Only exceptionally is a teacher allowed to sit. Sitting militates against that exemplary conduct which the teacher should in everything endeavour to maintain.

(8.) All questions and explanations should be addressed to the whole class. Pupils wishing to answer the question, are to indicate it by raising their right hand, and with this sign alone. Some particular child is then pointed out to answer the question. In the same way any pupil desiring special information, should raise his hand, and wait till the master asks the reason. Moving in the seat, and answering without command, should be rejected as disturbances of the lesson.

(9.) When the teacher has called upon a child by name, he should rise quickly and assume an erect position, neither lowering his head nor starting. When giving an answer, he should speak vigorously and in a clear tone. Speaking in a faint voice in consequence of shyness is to be overcome by repeatedly speaking altogether. The teacher should afterwards convince himself that the desired result has been reached. To excuse a scholar who speaks in a faint voice is to confirm him in his bad habit.

(10.) Orders concerning the whole of the class, such as :—

1. Producing and putting away of books, note-books, pencils, and other writing material.
2. Gathering or distribution of writing, drawing, reading-books, etc., and other instruction-material.
3. Falling in, when leaving school-room, and similar things, should, until a fixed method has been developed, be executed on a given command, which indicates the various phases of the action by counting. This is to be continued until pupils have acquired the habit of doing it without counting. Such commands are : "Books out !" "Write !" "Pens away !" "Turn over !" "Close books !" "Distribute books !" "Books together !" "Stand !" "Ready !" "Fall in !" "Disperse !" (It should be remembered that these commands are given somewhat in military fashion).

(11.) Pupils shall be informed as to the proper use and treatment of the material of instruction, and in particular that :—

1. All reading and writing books must be provided with a protecting cover, writing-books with blotting-paper.
2. When reading, line or words, and places, etc., on maps must not be pointed at with finger, but always with a pencil or small pointer.
3. On the black-board or slate-slab, nothing shall be wiped off with the hand, nor shall anything be written on the wet surface. Cleaning cloths, etc.
4. Pens and pencils must not be touched until used, and after use they should be put away at once.

(12.) When the Director or guests enter or leave the school-room, at a sign from the teacher pupils will rise, sitting down again, upon another sign.

Hospitanten must not give any sign of their opinions during the lesson. With the exception of the Director and class-teacher, no one is permitted in any way to interfere with the teaching or ruling of the class, even though the teacher makes an obvious mistake. The teacher must not converse with anyone during his teaching.

(13.) Continual attention is necessary in regard to matters of hygienic importance, such as protection against glaring sun-light, heating, etc. Leaving the school-room is permitted only in exceptional cases.

(14.) The sign for the closing of the lesson should be given by the teacher. Teaching must not be carried on beyond the striking of the hour, even for giving out home-work or making up any time lost at the beginning of the lesson. This may be done in exceptional cases after consultation with the pupils after the close of the morning or afternoon lessons.

Pupils leave school-room quietly, in pairs ; this being done, the teacher makes his entries into the class-book.

(15.) Order must be kept, especially at the close of the day's lessons. Unrest, or premature packing up of the school things, should be punished by warning, and making child leave the class-room last of all. Praktikanten must afford information regarding anything observed in respect of pupils when outside of the school.

(16.) 1. Aim and purpose of special assistance (to backward pupils). This assistance should not take the character of punishment which is reserved for pupils who for continued negligence in their written or verbal work (neglect of corrections especially, etc.), for continual laziness, are to be "kept in." The special assistance has the purpose of helping the backward pupils to reach the scheme of work of their class, again raising them to its level.

2. A criterion for determining where this special assistance will be needed is usually given by the marks of the written work, or may appear from the insufficiency of the verbal exercises. In the first case it is left to the teacher concerned, what limit he will adopt, or where there be more than one, whether the formal or the material one shall be regarded as decisive. Even the general impression may suffice. The main thing is systematic procedure, with due consideration of the pupils' individualities.

3. Who is to afford the special assistance ? The assistance is daily given after the morning lessons, by the class teacher. Other members, however, (Praktikanten) who take an interest in this matter, may take over during a semester, one or more assistance-lessons weekly, provided they are sufficiently informed about the scale of marks, marking of mistakes, the treatment of pupils, etc.

4. How is it to be executed ? During the assistance-lesson absolute quietness for the work of the pupils shall be maintained, strict adherence being the instructions ; and in giving information of concern to all pupils present, they ought all to be called to attention, and to contribute.

It is undesirable to put many pupils in an "assistance-lesson," lest the teacher be unable to devote himself to any one weak pupil thoroughly and kindly.

II. *Regulations Concerning Discipline.*

Introduction.—Discipline has the same aim as instruction, viz., to develope a moral-religious character in the pupil. It tries, by its dispositions, to act immediately on the mind and will, while the instruction tries to reach this end immediately, by extending the sphere of ideas.

(17.) The following arrangements are in the interests of discipline :—

1. The morning prayer.—Every school-day starts with a general prayer in all classes. At the close of school, another prayer is said.
2. A weekly prayer is said at the end of the school-week by the professors.
3. School festivities such as those on the (*a*) birthday of Emperor and the Grand Duke ; (*b*) Christmas ; (*c*) May excursion ; (*d*) departure of those who have been confirmed.
4. School trips (*See* E. Scholz : Die Schulreise, also organisches. Glied in Plane d. Erziehungsschule. From the Pædagogic University Seminarium III, 5th Heft and seq.) For the sequence of trips, see in the "Lehrplan" (9th Heft).
5. School "Savings-box," specially recommended to pupils wishing to take part in the school trips, to save up the required amount little by little.
6. Pupils' library, the enrichment of which students (Praktikanten) are specially expected to take to heart.
7. Monitorial offices. Certain pupils are nominated to undertake various offices in the school, garden, or workshop. Such offices are to be considered as offices of honour. The following duties are to be performed by two pupils (class monitors), nominated according to their sequence in the class, with weekly changes, viz. :—(*a*) Look after the black-board, sponge and chalk. (*b*) See to the teacher's table and chair. (*c*) Open windows in the intervals between lessons. (*d*) Write the date on the tablet hung up in each class-room (for the purpose). (*e*) Provide clean water for jug and basin. (*f*) Pour out ink into the various inkstands, as required.

A pupil is also charged with keeping the books, and other teaching materials in the class-press, in order, as well as fetching, collecting and distributing them. For each special subject, a pupil is to be nominated for the period of a semester, to attend to the corresponding teaching-material, such as maps, rulers, compasses, etc., with due regard to the individuality of the pupil. The necessity of fixed method in regard to each office is to be kept in view.

8. The individuality book. As does the professor, so also must the students (Praktikanten) endeavour, by visiting the parents of the pupils, to work for the latters' welfare. It is recommended that every pupil be accurately observed during the lessons, in the garden, the workshop, and in the play-ground, and in walks and excursions, and that the teacher enter into his circle of ideas and circumstances, by closer contact and hearty conversation on occasions of walks and excursions. If this be done in the proper way, the notion that he is being observed will not enter the pupil's mind. On the contrary, the pupil's confidence will be won, and he will be induced to speak freely about everything that moves him, and will gladly seek his teacher's advice. This relation will thus be of direct assistance in the formation of his character.

All observations made are to be collected, and entered into a book for the purpose, kept in each class, and will be worked up into an "individuality-sketch," as soon as sufficient material is collected, and entered into the "Individuality book."

The following scheme is to be followed :—(*a*) Home circumstances. (*b*) Age, primary education. (*c*) Appearance (build of body, condition of health, carriage and look, neatness in cloths and school-books). (*d*) Development on the side of intellect (abilities, interest in lessons, homework, favourite occupations and inclinations). (*e*) Manifestations of sentiments (intellectual, moral, æsthetic, religious sentiments ; intercourse with house-mates, teachers, and school-mates). (*f*) Proposition for improvements of faults on the result of scheme, instruction, or discipline.

In compiling these individuality-sketches, special care is to be devoted to the inner, casual interdependence of all observations and experiences made. Compare C. Schubert "Elternfragen," etc., 5th Seminarheft, pp. 80, et seq., and Rein's "Encyklopädie."

III. *Punishments.*

Introduction. All school punishments are to be regarded as measures for improvement, and they either act indirectly (by accustoming to order) or directly. They fall under two principal groups: Punishments in respect of authority, and in respect of discipline.

(I.) Punishments for authority, etc.—These have the purpose to re-establish proper order after disturbances during instruction. The strenuous aim, therefore, should be to make such punishments superfluous, by constantly accustoming to order.

(18.) The following details are to be observed :—Children entering the class-room after the teacher has arrived, must stand near the door until he calls upon them to take their seats. The teacher should not keep them too long, but inquire the reason of their being late. The punishment of neglect in the case of pupils missing any part of the lesson, is detention for the purpose of learning whatever has been missed under supervision of teacher or professor.

To eliminate the causes of neglect, it may often be necessary to refer to the parents (communications, parent's evenings).

(19.) The administrative measures for the maintenance of order during the lessons fall under two divisions, (1) general, and (2) special.

The teacher should in general succeed with the general measures. These on a rising scale are :—(*a*) Pausing during the teaching. (*b*) A knock or stroke on the table. (*c*) A general call of warning to the whole class or to a special form. (*d*) Blame and menace, *without* the mention of names.

The special measures are :—(*a*) A sharp glance or sign with the hand. (*b*) Appeal. (*c*) Threat of punishment, *with* mention of name. (*d*) Removal out of place at school desk; making stand at the side or in the rear, so that, unconditionally, good behaviour may be secured. (*e*) Personal report to a particular professor. (*f*) Report to the permanent professor.

(20.) In traversing the matter of punishments, care should be exercised to observe this ascending series. No stage should be omitted, neither should any be repeated. If punishment has been threatened, it must follow on repetition of the offence. The direction to stand *outside* the class-room door, corporal punishment (as a disciplinary measure to maintain control) are excluded as punishments.

(21.) The detention of pupils in a special punishment class is not allowed. Should a pupil neglect part of a lesson, through his own fault, or if by neglect he be late, he is to be punished by detention for work (to make good what he has neglected or missed).

(22.) If in teaching it be found that several pupils cannot accomplish their tasks, deprivation of liberty is not permitted; a more careful and methodical preparation of the teaching matter should be undertaken; since, *above all, the teacher should first look to himself for the root of the defect.* *Vide* I (23).

(23.) For negligences in regard to home-work a similar ascending scale of punishments must be applied, *e.g.*, report before the next lesson with the neglected work done; recitation of the neglected work; bringing it to the teacher after school hours; execution of the work under the personal supervision of the teacher.

(24.) The assigning of special punishment lessons—repeated copying of badly written work—is inappropriate, though the corrections of the faulty parts may be written out two or three times, where it cannot be connected with a special basis.

(25.) If a pupil has forgotten to bring anything needed for a lesson, and which is required also in the next lesson on the same subject, he has to shew to the teacher before beginning the next lesson, what he is supposed to have to hand, and in case of repeated forgetfulness, this is to be done some time before every lesson, with the object of becoming accustomed to this regulation. The class-teacher must undertake, from time to time, an inspection of the books. In connection therewith, care should be taken that pupils do not unnecessarily bring books, completed exercise-books, etc., to school.

(26.) Where negligences, offences against regulations and custom, occur, they should be expressly brought back to memory.

(27.) Irrelevant, untimely questions or expressions of doubt must be rejected without further discussion. Such questions and doubts which children express, not for information but to occasion the teacher embarrassment, injure the teacher's authority. At times the teacher may refer to them later on in the lesson, to shew the preposterousness or inconsequence of the question.

(II.) Punishments for the sake of Discipline.—The second group of punishments are those which should act directly upon the dispositions of the children. Far more important than the correction of errors, watchfulness in regard to things forbidden, and punishments, are such positive institutions as those for the development of the moral judgment, for warning or encouragement; *e.g.*, those in the shape of free conversation; repeatedly talking over of various occurrences from a moral standpoint; further *the stimulation to activity of noble sentiments, such as those of gratitude, pity, and loyalty.*

(28.) Should offences have occurred, the following is to be observed :—The teacher must, without force, endeavour to bring the facts to light. This, however, must not be attempted by a single investigation, inasmuch as the boy is likely to endeavour to close the matter by generally disavowing everything. He, the teacher, must be on his guard against fabricating a false representation of the affair, by artfully grouping various occurrences. He must not be influenced against anyone accused by former offences or accompanying circumstances.

The investigation of the offence before the whole class is to be considered a special intensification of the punishment.

(30.) In general the following is to be attended to :—The principle to be observed in regard to all punishments is: They must be applied with uniformity; they must be meted out without passion and with the necessary moral earnestness. *But cold discipline must never take the place of kindly treatment.*

(31.) The punishment must cause the pupil to recognise his fault. Both in the pupil to be punished and in his fellow-pupils the consciousness must be awakened, that the punishment was fully justified.

The above regulations are only a brief epitome of a much more complete list, having for their object the proper preparation of teachers for their duties, in a methodical manner, and the securing of uniformity on approved lines intelligently apprehended. In translating them it was not always possible to be at all literal, but the exact sense has, as far as possible, been given.

All persons who had been students or auditors for any time at the Jena practising school, with whom the Commissioners came in contact, regard the methods of the school as excellent. That the professors there are highly educated, and thoroughly and carefully trained, is incontestable. Students[1] enter the practising school at Jena older and better educated than with us, and the results are correspondingly better. The system is one that commends itself. It brings the teacher into direct contact with university influences, and this, in its turn, reacts upon the university. Before the teacher commences his work, he has, to some extent, matured; he has had his conceptions of his professional duties enlarged; he knows something of its theoretical and much of its practical side; his education has been sufficiently broad to help to defend him against the narrow spirit which tends to develope through contact only with the child-mind. He has learnt what will make his work real, that is, *his knowledge must not be merely information memorised from text-books,* but *direct* knowledge thoroughly grasped, and able to be freely applied in helping his pupils.

5. *Conclusion.*—The Jena school in Germany, that of Küsnacht in Switzerland, and similar training colleges, are the models on which a training college for this State should be founded, and it should be remembered in this connection, that its efficiency will assuredly depend upon the culture, liberality of view, and ability to awaken ideals, in the personality of its Director.

[1] That is, Student-teachers.

CHAPTER XL.

CHAPTER XL.

Reform in the Training of Teachers.

[G. H. KNIBBS.]

1. *Introductory.*—Since the realisation of any scheme of public education depends upon the thoroughness of the professional qualifications of the *teachers who are to be the instruments by means of which the State shall mould the character of the community*, the question of their proper training is one of the highest importance.[1]

It is extremely unfortunate whenever the office of the teacher is not adequately understood or respected. For a very considerable part of their time, our children, in the formative period of their physical, intellectual, and moral growth, are in the teacher's hands for good or evil. Among the influences that determine the child's tendency, the teacher's is probably pre-eminent, and yet we have made, so far, no sufficient provision to educate him for his responsible work, and have placed his emoluments on a scale that virtually expresses no high degree of respect for his office. If education is to ennoble and invigorate our people, *i.e.*, if we are to have a system which shall develope a physically, intellectually and morally robust race, then there are several things to which assuredly we must attend, viz.:—

(*a*) The cultivation of respect for the teaching profession, so as to induce able men and women to enter and to remain therein.

(*b*) The raising of emoluments of teachers, so that they may live with a reasonable degree of comfort, and in touch with the proper classes of the community.

(*c*) The ensuring of thorough general, and thorough professional education of the teachers, so that they may discharge their professional work ably.

This chapter proposes to deal with the last question (*c*).

Before passing on, it may be remarked that when the teacher's avocation is adequately respected, it will attract, as the Church attracts, men and particularly women, who are influenced by other considerations than rate of pay. In Germany ladies of good social standing are entering into primary and kindergarten teaching, their status being much higher than that of the men engaged in such teaching. The same is true of other countries of Europe.

Ladies of good status are also undertaking teaching in America, and with beneficial results as regards the refinement of the pupils.

There is reason to believe the same thing will happen here when public opinion supports such a movement, and when the general status of the teacher has been raised by the reform herein indicated.

The question of emoluments need not be now dealt with. It is sufficient to note that in the interests of education and of the country, distinguished ability must take precedence of mere seniority if the services of *able* teachers are to be retained, and the whole rate of emolument put on a somewhat higher scale.

2. *Principles determining preliminary education proper for primary teachers.*—The question of the degree of preliminary education required of those who would become primary-teachers is of consequence for the following reasons:—

(*a*) The importance of thorough *apprehension of the fundamental principles* of all subjects appears only when education is advanced to the higher stages of those subjects.

(*b*) The unity of knowledge and the significance of its formative function commence to be realized only in the secondary stages of education.

(*c*) The comprehensiveness of education, the range of human knowledge, its inter-relations, and its moral, intellectual, and practical tendencies, reveal themselves only in the secondary stage.

These may be restated as follows:—From the standpoint of propædeutics, the preliminary education should ensure some degree of

(*a*) Maturity as regards the grasp of the principles of subjects of instruction.

(*b*) Maturity as regards realization of the formative function and unity of educative instruction.

(*c*) Maturity as regards outlook upon the moral, intellectual, and practical significance of education.

Excepting those countries whose estimate of education sanctions the employment of wholly untrained persons (children) as teachers, viz., the pupil-teachers, all countries demand that the primary school teacher shall, *before teaching*, have at least a *secondary education*.[2] This is the requirement practically throughout the whole of Europe (excepting of course the United Kingdom, where primary education is certainly in an unsatisfactory condition) and America. That this is as stated will be seen from Chapters XXXV, and XXXVII. to XXXIX.

It

[1] The question of the professional training of teachers is very briefly but ably discussed by Miss Margaret Hodge, M.A., in a paper on the subject read before Section J of the Australasian Association for the Advancement of Science, Hobart Meeting, 1902, pp. 779–784.

[2] It ought further to be said that in such countries the primary education is also far better than in New South Wales, hence if a preliminary secondary education is *there* required, then, *a fortiori*, it is more necessary here. Pupil-teachers in New South Wales have had only a very poor primary education when they enter upon professional teaching,

It is quite immaterial how this secondary instruction is received, provided only it be thorough, that is to say it may be in :—

(i) Secondary or superior schools.	(Ecoles secondaires, écoles supérieures ; gymnasiums, high schools, universities.)
(ii) Special preparatory schools, or colleges for the teaching career.	(Präparanden Anstalten, or any schools specially designed to afford secondary education to those who intend to adopt the career of teacher.)
(iii) Preparatory classes of training schools and colleges.	(Ecoles normales, normal schools, training schools, seminaries, etc.)

This absolute *freedom of preparation* up to the grade of a good secondary education *should always be assured.* It may be said that all these modes of preparation are in vogue throughout Europe and America, often all of them being in vogue in any one country.

3. *Principles determining the professional education proper for a teacher.*—From the theory of education outlined in Chapter III, it is clear that the solution of this matter depends wholly on whether schools are to be *educative*, or merely places where *subjects* are taught. It will be assumed that this State will totally reject the latter or empirical form of education, and adopt in its integrity the *rational or educative form*, viz., that which in conveying instruction endeavours also to mould the dispositions and characters of the pupils.

There are two sides to a teacher's efficiency, viz. : (*a*) His moral efficiency ; (*b*) His mechanical efficiency. Proper professional education takes account of both, *in all countries.* What these qualifications involve will appear from the following outline :—

Efficiency of Teacher depends upon his—

(*a*) *Moral*—1. Character.	(*b*) *Mechanical.*—1. Intelligence.
2. Moral outlook.	2. Intellectual outlook.
3. Grasp of moral significance of education.	3. Grasp of intellectual significance of education.
4. Knowledge of moral or ethical subjects.	4. Knowledge of subjects of instruction.
5. Sympathy and enthusiasm.	5. Force and vitality.
6. Knowledge of the art of stimulating ethical expression, will, purpose, etc.	6. Knowledge of the art of stimulating intellectual effort, developing practical skill, etc.
7. Ability to direct in regard to moral culture.	7. Ability to direct in regard to intellectual and physical culture.

The outline is, of course, not exhaustive, but merely suggestive. To secure this efficiency, involves the student-teacher's[1] stimulation and development by certain educational and technical processes, which touch each plane of his being.

These, in the main, are the—

(1.) Deepening of the student-teacher's appreciation of educational effort, by a historical review thereof.

(2.) Awakening his consciousness to its scope and significance by a review of the history of its formal, or theoretical developments.

(3.) Broadening his outlook upon the subject, and forming his view in regard thereto, by a systematic study of the philosophy of education.

This is *formative work of the highest value*, and is, therefore, always undertaken. (See any of the continental programmes for the training of teachers). Notwithstanding the importance of the work, it is not attempted in the training colleges of this State, an omission of the gravest character, as will immediately appear.

4. *Function of the history of education.*—As a special subject of professional instruction for student-teachers, it may be said that the "History of Education" alone, treated historico-philosophically, will completely efface any tendency to empiricism in education (*See* Chapter III), and disclose not only how great the subject really is, but also afford that inspiration, which a revelation of the splendid efforts made to *educate the human race*, is so well calculated to produce. For anyone embracing the teaching career, the history of education, or *de facto* the founding of modern civilisation, is of *unique* interest, the uplifting of humanity depending upon it.

Continental countries attach, therefore, great weight to a knowledge of educational history, as a factor in creating an intelligent recognition of the drift and development of education, and in assuring liberal view and broad outlook.

5. *Function of the philosophy of education.*—The philosophy of education has a double purpose, viz., of ensuring :—

(*a*) A sufficient recognition of the aim and process of education.

(*b*) Thoroughness of professional equipment.

The two great branches of this subject are those which concern education in respect of—

(1.) Its purpose (teleology). (2.) Its method (methodology).

The first reveals the real nature of educational operation on the human mind, etc. (*See* Chapter III), with a view to helping the pupil to develope his personality in the best manner possible. The second discloses the educational processes through which this is attained. One might say, therefore, that these correspond to two aspects of psychology, viz., those which concern the *phænomena*, and the *conditions* of mental-life. But psychology is a somewhat wide subject, so that for the immediate purpose of professionally equipping the teacher, it has to be restricted to elements directly concerning education, in its ethical and methodological aspects. 6.

[1] Throughout this chapter, the term "student-teacher" must be taken to mean the primary (or other) teacher receiving his professional education.

6. *The relation of psychology to education.*—It has been said that tact and sympathy, etc., make psychology unnecessary for the teacher; to which it may be rejoined, that the systematic study of mental conditions and phænomena in no way runs counter to these very necessary qualifications, but, on the contrary, assists to develope them.

Modern educational method is wholly founded on psychology, and the *psychological method* stands in contradistinction to the various empirical methods, such as the socratic,[1] the heuristic or discovery method, the so-called analytic and synthetic, the affirmative, the developing or genetic, the catechetic, and others.[2] The use of such books as Gladman's and Landon's treatises on method, etc., in lieu of a systematic study of psychology, is thorough-going empiricism; notwithstanding the fact that those books are of some value.[3]

The study of *pædagogic psychology* communicates to the student-teacher a rational understanding of mental processes, so that the methodology of teaching in general, and also of teaching special subjects, is *rationally* understood.

The adherence to particular methods, is a rule-of-thumb idea of teaching, for different subjects require different treatment, and the function of psychology is to enlighten one as to the *rationale* of the teaching of all subjects, *not by empirical prescription, but by rational guidance.* This is its highest function, and exhibits *the essential difference between empirical and rational methods.*

7. *The place of ethics in the student-teacher's curriculum.*—The significance of morals in public education is dealt with in Chapter XV. The high place assigned to morals in other countries may be illustrated by the appointment some time back by M. Jules Ferry, with the express intention of maintaining a high standard of moral-life in France, of M. Buisson as director of primary education of France, M. Pécaut at the normal-school at Fontenay-aux-Roses, and of M. Marion in the chair of pædagogy at Sorbonne, three men eminent in this field of human knowledge.

The teacher is daily moulding the child and therefore the nation, by establishing his:—(I) Physical habit. (II) Mental habit. (III) Moral habit.

As previously shewn all this must be determined by the moral aim, viz., the development of *character.* The period when this is done is the plastic period, when it is possible to give a direction or tendency which will assert itself through life.

Right tendency in regard to body and mind, and right moral feeling and habit engendered in school-life, tend to perpetuate themselves.

The celebrated French formula "*La fonction fait l'organe,*" may be applied to this matter. The mode of control and direction of our bodies, our minds, our wills, brings about definite alterations in our physical organism that assist the continuance by the "force of habit." As Dr. Carpenter says: "*Our nervous system grows to the modes in which it has been exercised.*"[4]

Professor James sums up the influence of habit in the following propositions:—[5]

(*a*) Habit simplifies the movements required to achieve a given result, makes them more accurate and diminishes fatigue.

(*b*) Habit diminishes the conscious attention with which our acts are performed.

Professor Bain says we must:—

(I) Launch ourselves with as strong and decided an initiative as possible.

(II) Never suffer an exception to occur till the new habit is securely rooted in your life.

To which Professor James adds:—[5]

(III) Seize the first possible opportunity to act on every resolution you make, and on every emotional prompting you may experience in the direction of the habits you aspire to gain.

Habit will be seen on investigation to be that which conserves the whole social organism and maintains its steadiness, and the ethical implications of the law of habit are momentous.

Ethics in relation to education has clearly two sides, viz.:—(*a*) Ethical psychology; (*b*) theory of morals. These together constituting *Pædagogical Ethics.*

Character is of course the foundation of the teacher's influence, and without it his influence will be adverse, and his work ineffective. The moral philosophy of education will at least awaken him to a sense of his responsibility and enable him to reinforce his endeavour to discharge his duty. It will also make his conception of *how* to discharge it rational, and it will guide him rationally.

The significance of helping children to realise their duty to their bodies, minds, and characters, appears in quite a different light to the intelligent student. The proper development of bodily habit, the necessity for clear thought, accurate mental habits, of inhibiting evil and developing good impulses, of developing the will, stand out in clear relief only through a study of the subject in question.

Here again the teacher of New South Wales has not had the advantage of proper training.

8. *The place of Anatomy and Physiology in the education of teachers.*—The efficiency of teaching is considerably affected by the *health* of the pupil, and the health by proper attention to the requirements of the physical organism. In the chapter on physical culture (chapter XVII), the importance of the whole matter is formally stated. The proper care of children, that is an intelligent oversight of them as regards their condition during school-hours and during recreation, absolutely demands an intelligent appreciation of physiology and moreover of anatomy. (*See* chapters XLVII-XLIX on questions of hygiene). Physical culture exercises are of an importance which can hardly be realised without systematic study. By *increasing the vitality* of the body they develope its resistance against disease, and make all tasks, mental

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[1] School-work. F. G. Gladman, 6 edit., p. 120, 121. The Principles and practice of teaching, etc. J. Landon, 1902, p. 101.

[2] *See* Chapter III, Sect. 15, 16.

[3] Gladman's smaller book is the one actually used in the pupil-teacher stage, and till lately at the training-college.

[4] Mental Physiology. 1874.

[5] Principles of Psychology, pp. 112, 114, 124. 1890.

or physical, easier. They may be said to strengthen body, intellect, and will, in fact to intensify life in respect of its every phase.[1] Here again the State method is deficient. When the teacher commences his professional career he is ignorant of those matters, and even in the Training College has no teaching, excepting what has been incidentally received in "First Aid" instruction.

9. *Hygiene as a necessary subject in the student-teacher's curriculum.*—In chapters XLVII-XLIX the question of hygiene in relation to the school, its buildings, and premises, to the hygienic importance of proper school furniture and equipment generally, and in relation to the school pupil himself are briefly treated. It is of the highest importance that in the formative period of life the hygienic conditions should be as excellent as possible.

The direction and safe-guarding of the people's development is the care of the State, and the State can practically determine the future of the people, by seeing that in every possible way the children during school-life shall have proper opportunity to grow normally. A visit to some recently built schools shewed that they do not at all conform to standard requirements, from failure to appreciate, not architecture,[2] but *school-hygiene.*

With proper knowledge of school-hygiene, the arrangement of the public-school buildings in Sydney will be totally different (*see* chapter XLVII and XLVIII), much to the advantage of the children, who must attend.

10. *The Methodology of Teaching Individual Subjects.*—So far, the contemplated instruction for the student-teacher may be regarded as ensuring general qualification for the proper discharge of teaching. Such qualification is, in the higher sense of the word, formative; that is, it equips the teacher so that he may discharge his duties freely and rationally, and in keeping with his own personality. But it is necessary also to consider the methodology of the teaching of individual subjects. The contributory science is, of course, psychology, operating rationally and not empirically; that is to say, it will *guide*, but does *not prescribe.* It leaves every teacher free to respond to the suggestions of his own individuality; free, also, to vary his method by way of adapting himself to particular pupils, or particular classes of pupils. It simply ensures that whatever he does, will be done for definite reasons, and in the light of some knowledge of the laws of the human body and mind.

There are two methodologies for the guidance of teachers; one gives rules and directions, the other discusses the rationale of processes. The latter is alone worthy of consideration. The qualifications for a good teacher of methodology in any subject are:—A knowledge of the principles of *methodology in general*; a knowledge of the methodology of individual subjects. Teaching, however, has to be *specialised* to be made of the highest efficiency; it is customary, therefore, to require the teacher of any given subject in a teachers' seminary to be *the* expert in regard to its methodology. This is of course correct, for, since the psychological or rational method is the only one worthy of adoption, *no one is, in general, so well qualified to reach an accurate judgment as regards the nature and difficulties of a particular subject, as the adept therein.* Such a position as "*Master of Method*" is therefore ill-advised, as it implies empiricism. There is no such thing as a general methodology which embraces *details* of all subjects. General methodology is not a set of rules, but points out what is known of mental processes in relation to efficient teaching. Hence for special methodology the teacher expert in each subject is the only one to deal with its difficulties.

11. *Summary of the Educative Instruction Necessary for the Student-teacher.*—What has been stated so far reveals the great difference between a liberal rational training of teachers (so that they may be qualified to give educative instruction) and the training which aims at qualifying them merely to teach a few subjects. It is impossible to insist too strongly upon the difference. In the one case *education* is what is aimed at, in the other case *instruction.* Education throughout Europe and America is incomparably superior to ours in virtue of this very difference. The element of character-building involves higher training and larger outlook, and technical efficiency in instructing demands a thorough knowledge of the services which psychology can render. The superiority of European and American ducation, therefore, is due, it may be said, to two things, viz:—

(1) Making character the supreme aim of education.
(2) Abandoning empirical processes in teaching, and accepting the guidance of psychology.

Thus far this chapter has dealt with those elements in the student-teacher's education which confer educative *power.* They may be summed up as:—

(i) History of Education.
(ii) Theory of Education.
(iii) Psychology in relation to Pædagogy.
(iv) Ethics in relation to Pædagogy.
(v) Elementary anatomy and physiology.
(vi) School Hygiene.
(vii) Physical culture and gymnastics.

In accepting this view of what is really necessary in the professional education of teachers, the State will only be following the lead of the ablest countries in the world, as may readily be seen by reviewing their programmes. And there can be no doubt that, until these elements are included, we shall make no substantial improvement in our educational system.

12. *Technical Efficiency in the Art of Instruction.*—In reviewing the curricula of the training-college of this State, and the list of subjects in which teachers are supposed to pass examinations at different stages in their career, one is immediately struck with the absence of any adequate scientific basis for teaching subjects, directly or indirectly, related to natural science. Excepting by students who have taken courses in the University, Science is acquired in a literary way; that is, by memorising the material of text-books, and not by actual laboratory practice. Such methods of learning cannot lead to efficiency in teaching these subjects.

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[1] It may be mentioned that in all European agricultural schools, zootechnics (animal anatomy and physiology) are studied, so that animals may be properly handled. Is the child to be regarded as demanding less attention? Whoever answers "yes" has totally different opinion as to proper qualification for teaching from the European opinion.

[2] The professional work of the architect as such is not at fault; the difficulty is that the buildings do not conform to the proper hygienic requirements, either as regards orientation, lighting, disposition of the rooms, furniture, etc.

A second striking feature is the absence of adequate material for illustrating intuitive teaching, and for making it, as far as possible, realistic. Notwithstanding the fact that both interest is increased, and a deeper understanding of subjects attained through intuitive and realistic teaching, we adhere in this State largely to literary and logical methods. Geometry, for example, is taught by reading through the several books of Euclid, notwithstanding that such a method is obsolete in almost every country excepting the United Kingdom. One consequence of this method is that the subject, notwithstanding its value and intrinsic interest, is generally greatly disliked. It may also be noted that, even were all the books of Euclid read, which is rarely the case in our primary schools, very little Geometry has, after all, been learnt. And yet, by abandoning this form of teaching, it would not be difficult to give children in the primary schools a real outlook on the subject, certainly up to the elementary conceptions of geometry of three-dimensions, and of projective geometry.

Algebra is taught in much the same way. It also could be made more interesting by illustrating its applications, and by shewing how many questions of a practical character arise, in which it is of real service. The relation of Algebra to Geometry, for example, the use of curves and graphs, would increase the interest of both subjects. It would not be difficult to introduce, in a *very simple way*, the most elementary ideas of the infinitesimal calculus, so that, when the secondary stage of education is reached, the mind would already be familiarised with its conceptions. Many subjects we learn are really *made difficult* by the method of teaching them. Efficiency demands, therefore, both knowledge of the subject, and skill in teaching it; and, also, it may be said, knowledge of the contact with other subjects.

13. *Realism in Teaching.*—This distinguishing characteristic of modern teaching, to which reference has been made in the preceding section, is what may be called "realism," and the material equipment of modern schools is specially designed to facilitate realistic teaching. Geometry, to which reference has already been made, affords an illustration of the advantage of such teaching. Much of geometry really requires no formal proof, and when the truths of propositions can be made quite clear in a few moments by means of proper teaching-material, it is unwise to treat them logically, and to elaborate formal proofs with much verbiage. Many euclidean proofs of equality are obvious through the principle of symmetry, and to develope the proof in detail is sheer waste of time. Not only so, but clearness of conception is often impaired by mere clouds of words.

Practical life is continually demanding clear perceptions, from which alone clear conceptions are to be derived. Hence, as far as direct and experimental methods are possible, they ought to be followed. Knowledge learnt intuitively is rarely forgotten; inasmuch as the first impression is vivid, whereas relatively few minds are capable of appropriating abstractions. A very few simple but well-chosen chemical and physical experiments have far more educative value than a mere recitation of them, and, apart from the failure of children to learn by recital, it is well known that the most egregious mistakes are liable to be made by persons teaching science, who have learnt it only in a literary way. Sometimes, also, in dealing with one science, they touch on another without understanding it, and are committed to errors that generate utterly false ideas. The following example will shew how this may occur.

The question here given was set in the arithmetic paper for the Class I Examination of June, 1903, for teachers. That is the highest examination held. The question as given cannot be solved; but on the *erroneous* assumption that the flow from the taps would continue uniform for all heights of water in the cistern, an answer of course, can be found. With complete data the real solution involves the use of the differential and integral calculus, which are not subjects in the primary teacher's curriculum.

Question No. 4. A cistern, which is fed by a uniform supply of water, is furnished with five taps; when it is partially filled, two taps are turned on, and, after four hours, it is found that the cistern contains two-thirds of what it originally did; a third tap is then also turned on, and after two hours the cistern contains one-third of what it did at first; if the remaining two taps are now also turned on, in what time will the cistern be emptied?

A knowledge of physics would prevent such a question being given, and its injuriousness lies in the fact that it leads teachers and pupils alike to fail to recognise the true circumstances of the phænomenon, viz., the *non-uniform* character of the efflux. Such questions have been propounded for at least the last thirty years, and may be found in modern treatises on arithmetic.[1]

An *experiment* would have at once shewn that the usual arithmetical result was not realised, and, therefore, that the conception which led to it must be false. It need hardly be added that *all* arithmetical examples should be taken so as to avoid false conceptions of the phænomena to which they refer.

Errors of this kind bring into relief the great value of clear ideas, and shew how much more secure realism is than the mere literary learning of science subjects.

14. *The absence of Science in Public Schools.*—The part that science is playing in the world is growing daily more and more significant, and it touches the most commonplace things. Our school-systems have, however, practically ignored the fact. Teachers have frequently to give object-lessons upon subjects, the value and interest of which would be greatly enhanced by scientific knowledge, which, however they (the teachers) have had no sufficient opportunity of acquiring, their training ignoring the necessity for it.

The little smattering of physics which the male students of the training-college get at the Technical College of Sydney is not in any way comparable to the teaching in science given at the normal schools of Europe and America. More and more it is recognised that in a secondary stage of teaching at least, each branch of instruction must be given by a specialist, who keeps himself in touch with all modern developments in his own subject and in things relative thereto. That is the class of instructor by which our teachers must

[1] See for example, p. 216 in Lock's "Arithmetic for Schools," Macmillan, 1900.

With a view to shewing how erroneous the conception of the problem is, the following true solution is given of a simple case. Suppose water to flow out of a prismatic cistern of constant cross-sectional area A, through taps (or orifices) whose *effective* area is a, and to be lowered thereby from the height H above the taps, to the height h. Then the time T of lowering, when there is a uniform supply of q units of water per unit of time, is

$$T = \frac{2A}{a\sqrt{2g}}\left\{a\sqrt{2g}\,(\sqrt{H}-\sqrt{h}) + 2{\cdot}3026\ldots q\log_{10}\frac{a\sqrt{2gH}-q}{a\sqrt{2gh}-q}\right\}$$

in which formula g denotes the acceleration of gravity. It scarcely needs affirmation that the proponents of the question have no conception of its real complexity.

must be trained, if they are to be equipped as well as European teachers. We have, it is true, University graduates as teachers, *and given proper opportunity of specialisation*, they, and any other serious students, will have no difficulty in discharging ably their tasks. But the present system will have to be considerably reformed to attain to this. Nothing short of a commanding knowledge of a subject will inspire the rising generation with reverence for their teachers, and with vivid ideas regarding the meaning of science to the modern world.

15. *The Teaching of Languages.*—Although in some schools French and German, etc., are taught with regard to accent and pronunciation, this is not invariably the case. The mispronunciation learnt early in life is difficult to unlearn, consequently it is desirable that greater attention be paid to accuracy of pronunciation in educating our teachers. In view of the difficulty of obtaining a sufficient number of qualified instructors, it is desirable that the phonograph be brought into requisition as a means of securing proper accent and pronunciation. It has been largely used in America, and though not comparable to the living teacher, it helps one to avoid mispronunciation. It is well known that many pass examinations in continental languages who are not intelligible therein through bad pronunciation.

The question of the theory of language teaching, and of the value of languages, is set out in chap. XXII. In the future training of teachers, any language or languages decided upon should be properly spoken, and learnt thoroughly, as indicated in the chapter mentioned.

16. *Special methodology.*—Both science and languages afford illustrations of the value of realism in teaching. But teachers need to be trained, not only in realistic ways of teaching, but also in what may be called the *methodology* of realism. Not only will it be necessary, therefore, to give them a direct and practical acquaintance with the various subjects they are called upon to teach, but also some conception of that methodical development of experiments calculated to call into exercise the pupils' powers of observation and reflection. In this way the pupils become finally conscious of its orderly and systematic development. Stress should consequently be laid, in training teachers, upon the necessity of solidly establishing what may be called the *foundations of knowledge*, that afterwards they may be competent to really help those whom they are to teach. For, in education, it is vastly more important to lay a good foundation than it is to cover a large area, all of which is imperfect. Imperfect apprehension of anything is of little practical, and little educative, value.

While it is of course true that the powers of abstract knowledge in dealing with practical issues are incomparably greater than is commonly supposed, it is equally true that the concrete fact and the abstract conceptions derived from it should be fused together in the mind and memory. A confidence comes in this way that literary learning can never give. Direct derivation of ideas from the actual objects greatly helps in the formation of sound knowledge.

The principles of the methodology of special subjects may, as will be seen, be formulated as follows:—

(i) Subject-teaching ought to be based upon the appropriate psychological principles.

(ii) As far as possible the intuitive teaching-method should be followed, as many things as possible being *demonstrated*.

(iii) Fundamental principles in every subject should be fixed in the memory by concentration and abstraction, the pupils' attention being so directed that they may apperceive these principles.

17. *Subjects of instruction for teachers.*—In section 11, subjects (i to vii) are subjects whose main object may be said to be that of ensuring on the part of the teacher the possession of large outlook and educative power. To some extent they are, of course, also subjects of instruction; but there are others that may be more properly classed under this latter title. These last may, in the training of teachers, be regarded from two points of view, viz., (*a*) that of acquirement, (*b*) that of teaching. The latter point of view will occupy the student-teacher more and more as he approaches the time for the full exercise of his art.

If our teachers are to be trained equally well with those of European countries, the subjects of instruction will have to cover about the following range:—

(i) English—(*a*) The development of the English language and literature; (*b*) Grammar an Analysis; (*c*) Prosody; (*d*) Outlines of logic and rhetoric.
(ii) Languages—(*a*) Latin, or (*b*) French, or (*c*) German.
(iii) History—(*a*) Ancient, (*b*) Modern, (*c*) English.
(iv) Geography—(*a*) Topographical, (*b*) Industrial, (*c*) Commercial, (*d*) Political, (*e*) Physical, (*f*) Mathematical.
(v) Cosmography—(*a*) The Solar System, (*b*) The Stellar Universe.
(vi) Mathematics—(*a*) Arithmetic, (*b*) Algebra, (*c*) Trigonometry, (*d*) Planimetry, (*e*) Stereometry, including spherical trigonometry, (*f*) Projective geometry (*g*) Historical development of mathematics.
(vii) Natural Science—(*a*) Botany, (*b*) zoology, (*c*) chemistry and mineralogy, (*d*) geology, (*e*) physics, (*f*) anthropology and hygiene.
(viii) Music—(*a*) Theory of music, (*b*) class-singing, etc., (*c*) instrumental music.
(ix) Drawing, etc.—(*a*) Freehand, (*b*) geometrical, (*c*) modelling, etc.
(x) Writing, etc.—(*a*) Theory of position in writing, (*b*) plain and ornamental writing, (*c*) lettering.

It would, of course, be quite impossible to treat these subjects in any way exhaustively, but fundamental principles can be learnt so that instruction given shall be sound and the scientific outlook, if not greatly developed in detail, will at any rate be comprehensive.

In order to give point to the matter, the details of the development of these may be indicated for some of the subjects. It may be stated in regard to the development, that the "Lehrplan" of the teachers' Seminarium Küsnacht, Switzerland, has to some extent been followed for the majority of the subjects. This will give some idea of the thoroughness of the education of the Swiss teacher, and it is much the same in the other countries of Europe.

18. *Geography.*—After sketching the proper method of developing geography for children, so that it may be a real and thoroughly understood subject from the beginning of their instruction in it, this subject may be treated as follows:—

Topography in its relation to the inhabitants of each country. The outlines of industrial, commercial, and political geography. Cartography and the projections used therein. The morphology of the earth's surface. Oceanography. Climatology. The movement of the atmosphere and meteorological phænomena. The distribution of the most important plants and animals, and of the human race. Outlines of mathematical geography, viz., the real figure of the earth, latitude, longitude, and time. Mode of determining the earth's form.

19. *Cosmography.*—Outline of the Ptolemaic and the Copernican view of the earth's relation to the universe. Evidence of the earth's form, and of its motion. Direct proof of the earth's rotation. Characteristics of the earth's motions. Geographical movement of its rotation axis. Apparent motions of the sun. Celestial co-ordinates, how determined. Characteristics of planetary motion about the sun. Kepler's laws. Influence of the moon on the earth. The precession of the equinoxes. Outlines of the form of the solar system. The measurements of the elements of the solar system. Cometary motion. Proof that the solar system is moving through space. Direction and amount of motion. Distances of some of the fixed stars. Classification of stars as regards their physical constitution. Star clusters and nebulæ. Space and time scales appropriate to the measurement of the universe.

20. *Arithmetic.*—Logical theory of arithmetical operations. Elementary theory of numbers. Theory of powers and roots. Extraction of roots. Theory of common logarithms. Arithmetical and geometrical progressions. The fundamental conceptions of combinations. The elements of probability with applications.

21. *Algebra.*—Systems of equation of 1st degree, and solution of same. Theory and solution of equations of 2nd degree.

22. *Trigonometry.*—Definitions of the functions of an acute angle. Complete solution of right and oblique angled triangles with numerical calculations. Applications in triangulation, physics, stereometry. The general definitions and fundamental principles of the measurement of angles, etc. Construction of trigonometrical expressions and examples of trigonometrical analysis and geometrical construction in relation therewith.

23. *Planimetry.*—Intuitions of space of two dimensions and fixation of fundamental conceptions. Straight line and circle, linear and angular measure, parallels, and perpendiculars, central and axial symmetry, congruence. Displacement and rotation. Unambiguous triangle construction. Propositions concerning general and special quadrilaterals, secants, tangents, and angles of the circle. Comparison, transformation, and measurement of triangles, polygons, etc. Theory of similarity of plane figures. Change of scale. Regular polygons, construction of simple algebraic expressions. Straight line and circle as geometrical loci. The method of solving problems in planimetric construction. Practical exercises in measurement of distances, etc., and right-angles. Applications to survey of small areas.

24. *Stereometry.*—Positional relations of space-elements, parallels, and perpendiculars. The idea of projection. Distance and angle measurement. Spatial symmetry. Unambiguous construction of solid angles. Euler's theorem, and the regular polyhedra. The sphere and its sections. Spherical triangles. Surface, and volumes of elementary bodies and their individual parts. Application to the determination of weights.

25. *Projective Geometry.*—Theory of projection, oblique parallel projection. Representation of points, straight lines, planes, polygons, etc., in plan and elevation. The ellipse as projection of the circle, and its focal definition. Representation of polyhedra of elementary curved surfaces in plan and elevation. The most important maps and projections. The fundamental principles of geometrical perspective, vanishing points, etc.

26. *History of Mathematics.*—The history of mathematics and brief review of its present position.

27. *Botany.*—Cryptogams and phanerogams. Most important industrial plants. Outlines of the morphology, anatomy, biology, and physiology of plants. Field Botany. Microscopic examination. Simple plant-physiology researches.

28. *Zoology.*—Introduction to the Anatomy and development-history of the classes of the animal kingdom. Biology of well-known indigenous or important animals. The genealogical tree in ascending order. Insects of important orders. The invertebrates and vertebrates. Characteristics of the most important orders with special regard to their utility or injuriousness. Zoological excursions.

29. *Chemistry and Mineralogy.*—The most important heavy metals. Air, oxygen, nitrogen. Water, hydrogen, "knall" gas. Most important light metals. Carbon and carbonic acid. Sulphur and sulphuric acid. Hydrogen sulphide and carbon disulphide. Phosphorus. Arsenic, antimony. Silicic acid. The haloids and their acids. Reduction by heat, by hydrogen, potassium, carbon. Electrolysis. Atomic theory. Simple and multiple proportion. Valency. Stoichiometry. The most important acid and basic hydrates. Salts, formulæ, general properties, decomposition of salts through heat, through bases, acids, salts, electricity (electroplating, etc.), and light (photography, etc). Elementary ideas of crystallography. The most important salts, natural and artificial, haloid salts, carbonates, sulphates, phosphates, silicates (augite and hornblende, orthoclase and plagioclase, granite, mica, and talc, pottery glass, porcelain, and cement manufacture). Characteristic partial reduction (nitric acid, gunpowder, sulphuric acid, bleaching powder, ozone), ammonium. Practical work. Arrangement of school apparatus. Practice in important reactions.

Organic Chemistry.—The most important organic combinations, coal-gas, alcohol, acetic acid, sugar, starch, cellulose. Fats and soap, alkaloids, and essential oils. Albuminous bodies.

30. *Geology.*—Petrography. The most important volcanic and stratified rocks, gneiss, crystalline schists, conglomerates, organic rocks.

Changes in the earth's surface. Erosion and sedimentation (chemical and mechanical action of water, action of ice). Activity in the interior of the earth (volcanoes, hot springs, upheavals, subsidences, sand-hills, hills produced by folding, earthquakes).

Historical Geology.—Short sketches of the five periods. Significance of changes of organic world. Geological excursions.

31.

31. *Physics. Mechanics.*—The laws of linear and central motion and in relation therewith, the ideas of force and mass. The laws of statics, of friction; the general properties of bodies. The propagation of pressure of fluids, specific weight. Molecular forces in cohesion and adhesion. The pressure of the air, in various phænomena and applications.

Theory of Heat.—The expansion of bodies and applications. Specific heat. Principal elements of the mechanical theory of heat. Modes of the propagation of heat. The theory of steam and of the steam-engine.

Acoustics and Optics.—Fundamental elements of the theory of waves. Sound, musical tone and its properties, simple tones, resonance.

Shadows.—Law of reflection and its application in regard to plane and spherical mirrors. Refraction, and the path of a ray of light through prisms and lenses. Optical instruments. The prismatic colours and spectrum analysis. Interference and the present state of the theory of light, theory of vision.

Magnetism and Electricity.—Magnetism in general, and the elements of earth magnetism. The phænomena of static electricity and apparatus for their demonstration. The action of the electric current and its most important applications. Induction and its significance in technology. The system of electric units. Laboratory practice.

32. *Anthropology and School Hygiene.*—The skeleton. The muscles. The nervous system. Vascular system (blood and lymph, etc.) The breathing organs and breathing. The digestive system and theory of nutrition. Excretory organs. Liver and kidneys. The head and the organs of mind.

School Hygiene.—The schoolhouse, schoolroom, and furniture. Ventilation, heat and lighting and cleaning. Bathrooms, etc., corridors, and various places about the school. Hygienic theory of the plan of instruction in general, and the principal subjects of instruction. Corporal punishment. Disturbances of the health in school children. Developmental anomalies. Fatigue and overwork. Nervous injuries. The diseases of the mind. Disturbances of the sight, hearing, and speech; mode of examining them. The causes, symptoms and prevention of the most important infectious diseases. Sudden accidents and "First aid." Excursions and hygienic demonstrations.

33. *Music.*—Theory of musical sounds. Notation. The gamut; its formation, and its primary and secondary triads. The chromatic and enharmonic scales. Transposing to major fifths and fourths. The relationships between the various scales. Theory of intervals. Leading notes. Rhythm. Formation of major chords.

Practical exercises and application of the theory. Exercises in reading rhythmic and melodic exercises in C major for the purpose of training the ear. Exercises in each scale and its accord, in special reading exercises, selected songs, and easy solfeggios. Beating time.

The formation of the minor scale. The minor triads. Transposition. The terminal notes of four-part phrases. Dynamics. Melody and its embellishment.

Graduated exercises in reading in all parts, with melodic and rhythmic development.

Extension of the theory of accords. Inversion of triads and chords. Discords. The accompiment of the scale with another part, subordinated, co-ordinated, etc., and cadenced. Tempo, phrase, and sentence. The phase development of folk-songs. Two, three, and four part phrases.

Extension of reading exercises to phrases of two or more parts. Exercises in symphony. Exercises in beating time. Exercises in intoning with the tuning-fork.

Solos, with piano accompaniment (male and female voices in unison) as preparatory exercises. Part songs for practice in directing. Choir-singing with male and mixed voices. Simple and difficult folk-songs, with special regard to the comprehension of text and melody. Easy classical anthems.

Instrumental music. Violin.—Development of the ear. Technical exercises, with an object of training the pupil in correct bowing and fingering. Major scale in first position. The minor scale in the first position. Easy duets in the major and minor. Easy studies in the first position, proceeding to the higher positions. More difficult exercises, involving several octaves, with accurate indication of the bowing and fingering.

Pianoforte.—Development of musical feeling, understanding, and memory. Readiness in fingering and reading, to qualify the pupil for school songs, chorals, anthems, and for playing easy pianoforte pieces. Scale and chord playing. Exercises in transposing. Introduction to classical and modern pianoforte music.

34. *Drawing.*—Drawing of ornamental surfaces; of the leaf, twigs, and blossoms of plants. Introduction into free perspective. Exercises in colouring and shadow drawing.

Interiors and still-life. Landscapes. Architectural groups. Hands, feet, and stuffed animals. Theory of colour. Figure-drawing. The head. Synopsis of the theory of style. Modelling.

Geometrical drawing. Use of drawing instruments. The elucidation of spatial representations by correct drawing. Planimetric exercises, and drawing plans of measured areas. Construction of the practically important curves. Some exercises in the technical development of geometrical conceptions.

Intuitive figures from stereometry in oblique parallel projection. Exercises in connection with plan and elevation in the theory of projection. Measurement of simple objects, viz., buildings and parts of machines, etc. Mass sketching.

It will be seen from the preceding outline of the way in which the various subjects are treated, that the European primary teacher is widely and thoroughly educated. Until the teachers of this State cover a similar range they will not, excluding exceptional cases, be as highly qualified as their confrères in Europe.

35. *The instruction of student teachers.*—As previously mentioned, the above curriculum is that of the Küsnacht, Zurich, Switzerland; but it really matters very little what country in Europe one selects to illustrate the excellent character of the education of the primary teacher. The secret of the thoroughness of his education, however, does not lie in the extensiveness of the curriculum, but in the high qualification of his instructors, who are, throughout, specialists in their several subjects. Moreover, the subjects are not learnt in a merely literary way, but experimentally, and from instructors who have a thorough grasp of the relation between theoretical teaching and laboratory demonstration, and who, in addition, are experts in the methodology of teaching their subjects. It ought, further, to be pointed out that, while general methodology is included in the theory of pædagogy, subject methodology is in general taught by the professor of each subject, as previously mentioned in section 10. Throughout all subjects it is necessary that proper laboratory equipments should be supplied, so that the teaching may be made realistic.

36. *Division of Subjects of Instruction.*—Reverting to paragraphs 11 and 17, it is evident that for efficient teaching, that is teaching throughout by specialists, approximately the following staff would be required, viz.. teachers in the following groups of subjects:—

(1) History and theory of education, psychology and ethics in relation to pædagogy.
(2) Elementary anatomy and physiology, anthropology and anthropometry, hygiene.
(3) Physical culture and gymnastics.
(4) Mathematics, viz., arithmetic, algebra, trigonometry, plane, solid, and projective geometry, infinitesimal calculus, and history of mathematics.
(5) Physics, chemistry and mineralogy.
(6) Botany, biology and zoology.
(7) Geography and cosmography.
(8) English and ancient and modern history.
(9) English language and literature.
(10) Languages, Latin and Greek, French and German.
(11) Music, vocal and instrumental.
(12) Drawing, writing, etc.

The above list looks somewhat formidable, and yet it must be remembered that if the teaching is to be comparable to that of Europe in breadth of outlook and thoroughness, it must be specialised. It is at once evident that some of the subjects can be taught by instructors who devote to them only part of their time, and it is also obvious that the University of the State could render important assistance. However difficult it may be to attain immediately the high class of teaching indicated, no effort should be spared until it is reached, at least if we intend that the children of this State shall have the same educational opportunities as in Europe and America. So far as our city and large towns are concerned the scheme is practicable, and *what can be done elsewhere can be done here if only we believe that education is worth the sacrifice.*

No account has been taken so far of the necessity of a practising-school; this, however, is a desirable institution, and will be now discussed.

37. *The New South Wales' Training Colleges.*—The training-schools at present existing in this State are wholly different from those in other parts of the world, excepting perhaps some in the United Kingdom. The preceding part of this chapter, and the chapter on the "Pupil-teacher and Previous-training systems" (Chapter XXVIII), especially section 12 therein, sufficiently indicate the points where the New South Wales' scheme for the education of teachers is lacking. Briefly restated, the defects are as follows:—

(*a*) The previous education of the teacher is insufficient.
(*b*) The course is altogether too short.
(*c*) It omits subjects of the very highest importance.
(*d*) It pays insufficient attention to instruction in science.
(*e*) Its teaching is not sufficiently specialised.
(*f*) Its methodology is empirical, not psychological.
(*g*) Its practising-schools are imperfectly equipped.
(*h*) Its teaching in certain subjects is not sufficiently in touch with modern development.

The above suggest the leading characteristics which distinguish our training-colleges from those of other countries.

38. *General idea of a fully equipped Teaching Seminary.*—There are two classes of seminaries for the professional education of those who select the teaching profession, viz.:—

(*a*) Those which provide the preparatory secondary education as well as the purely professional education of the teacher.
(*b*) Those which make provision for the latter only.

Both may or may not have a small adjunct-school, which is known as the practising-school. The advantages of a practising-school associated with a seminary are as follows:—

(I) The school can be made a model-school in respect of (*a*) its building, (*b*) its organisation, (*c*) its equipment.
(II) The classes may be kept small so that the teaching may be raised to the highest point of efficiency.
(III) It can be made a focus for educational experiment.
(IV) Observation and practice of teaching, being part of its regular routine, will not tend to disturb its discipline.

Instead of having a practising-school, it is of course possible to utilise ordinary schools. That, however, rather tends to disturb their discipline, and further, the teaching-staff of the ordinary schools cannot be maintained at the high state of efficiency possible in a practising-school[1].

The purely professional education of the teacher consists of instruction designed to qualify him morally and intellectually for his avocation, supplementary to that which he has earlier received. The subjects treated and the teaching-personnel depend upon whether or not the seminary is associated with a university.

39. *Seminary associated with a University.*—The possibility of special teaching in universities is frequently such that it is desirable to utilise it in connection with the training of teachers, apart altogether, that is, from any question of demanding that teachers shall be graduates therein. It may here be said that there is a wide consensus of opinion that it is not only unnecessary but also unwise to attempt to make all primary teachers university graduates. At the same time it is equally widely recognised that those who give evidence of special ability should be afforded opportunity of graduation.

Chairs of Pædagogy have been established in many universities, and there is some advantage in making a Professor of Pædagogy also Director of the Seminary. This advantage may briefly be stated to be the ensuring that the most eminent authority of education, viz., the Professor of Pædagogy, shall have both theoretical and practical experience. His chief qualifications would, of course, be broad outlook, general

[1] The great excellence of practising-schools has made it possible for them to sometimes charge large fees.

general culture, special knowledge of pædagogy as a science, and it is desirable that he should have some practical knowledge of teaching. It cannot be too strongly insisted in this regard that he should have a wide theoretical knowledge of education, and that he should know something of its history. That he should be a psychologist is indispensable, since it is owing to the developments of that science and the services it has rendered to educational methodology that the purely empirical methods are being reformed out of existence.

40. *Length of Curriculum.*—The course in the Seminarium at Küsnacht, where the entrance age is 15, is for four years. This, however, is not the longest period of attendance at any one institution. The following schedule will give some idea of the length of preparation in different countries :—

Country.	Earliest Entrance.	Preparatory.	Training.	Age.
			Years.	
France	F. 15, M. 16	...	3	18-19
Switzerland	15-16	...	1-4	19
Hungary	F. 14, M. 15	...	3	17-18
Prussia	14-15	3-2	3	20
Saxony	13 M	...	6	19
,,	14-15	...	5-4	19
Belgium[1]	15	...	4	19
Holland	14-15	...	4	18-19
Norway[2]	18 (17?)	...	2 (3)?	20
Sweden[3]	16	...	4	20
Russia	16	...	3	19
Finland	?	...	4	?

From this schedule it is evident that there is a general consensus of opinion that teaching should not be undertaken before 19 years of age; and it may also be said that a three years special course seems to be regarded as a minimum.

This would mean that the education for the teaching profession should extend from 14–16 in a middle or secondary school, and from 16–19 in a special seminary for the education and training of teachers. Even with such an arrangement it would be some years before our teachers, as a whole, could be as thoroughly equipped as those in Europe, because it will take time for the better education to permeate the whole community, so as to enable the general level of education at any given age to be materially raised. That of course is necessary for real progress.

41. *Conclusion.*—It is evident from what has preceded that our whole scheme of training teachers needs reorganisation. The present system is a natural sequence to the pupil-teacher system, and is equally unsatisfactory. It is impossible to compare our curriculum and general method with the curricula and methods of other countries, without recognising that considerable progress is necessary in order to equip our teachers educationally as well as they are equipped in Europe. The following are recommendations, which if carried into effect, will place the training of teachers on a sounder footing :—

(1) Establishment of a Seminarium with a three years course, sufficiently near the University of Sydney to permit of attendance there, for special subjects.
(2) Entrance to the Seminarium to take place not earlier than 16, and after passing either the Senior examination or its equivalent.
(3) The curriculum to be practically as outlined in sections 11 and 17 herein.
(4) All subjects to be taught by specialists.

It may be remarked that the necessity of offering special inducements for persons to enter the teaching profession will probably cease when the rate of the emolument of teachers is reasonably increased. During the transition period the present principle may perhaps be maintained, the extent of the inducement being however diminished.

(5) Finally, to sufficiently influence the ideals and educational future of this State, it is eminently desirable that say two at least of the younger and ablest men of the staff of the Department of Public Instruction should be sent to Europe for a period of not less than nine months, to study the methods of training teachers in the Ecole normale of St. Cloud, Paris, in the University Seminarium at Jena, Germany, and in the Seminarium at Küsnacht, Zürich, Switzerland. They should be thoroughly qualified to converse in French and German before starting.

If there be any difficulty in obtaining men who speak both languages freely, it would still be worth while if, in the case of two, one spoke German freely and the other French freely, provided that both could read these languages easily.

It would be good economy to give these officers twelve months to complete their mission, including a brief report on the methods, written during their sojourn in the countries. They would have an opportunity of seeing the various classes of schools, their equipments, the method of teaching in them, and would return with renewed enthusiasm to the great task which is before this State, viz., the radical reform of the educational system.

American education is progressing so rapidly, and has such excellent features, that it would also be an advantage to send say one student to study for six months the American and Canadian systems of training teachers.

These students should prepare themselves by a special study of educational history and theory, psychology, etc., and should be of University standing. They would inevitably become foci of influence afterwards in the direction of the reform that is so badly needed, and would greatly help in the transformation of the educational system.

[1] The Belgian programme is an excellent one.
[2] Storthing's bill proposes to make the period three years.
[3] Folkskolelärare (primary school teachers). The course for the Smaskolelärare is shorter.

CHAPTER XLI.

CHAPTER XLI.

Schools for the Feeble-minded.

[G. H. KNIBBS.]

1. *Introduction.*—Schools for children of weak intellect, imbeciles, or idiots are a feature in the educational systems of Austria, Belgium, Denmark, Germany, Great Britain, Holland, Hungary, Norway, Sweden, Switzerland, and the United States of America, and experience has shewn that their education is by no means so hopeless a matter as was formerly supposed. The instruction is necessarily *special*, and very simple.

Backward children may be divided into two classes, viz., those that are simply abnormally slow in developing, and those that will, practically, never develope a normal degree of intelligence. There is, of course, no absolute line of demarcation between the two classes. The latter may again be divided into those that *can*, and those that *cannot* be educated.

2. *General Principles of Educating Weak-minded Children.*—The *principles* of educating imbecile children are naturally the same as for any other, but there are certain differences in their application. The intuitive method of teaching is practically often the only available method. Each child also must, to a large extent, be separately treated, and hence *classes are always small.* Suitable manual training involves healthy use of their powers, and is well calculated to awaken the maximum of interest, hence it is an important, perhaps the most important, factor in their education. The passage from the period of childhood to the period of puberty has to be most carefully watched; for the mentally abnormal frequently exhibit abnormally developed sexual instinct, and are also usually deficient in that which tends to control their impulses.

Idiots often become purely animal in their instincts; imbeciles, violent; feeble-minded, morally uncertain. Hence it is customary to keep the children in the special schools for as long a period as possible, and certainly well over the critical period.

In some countries the children are all resident, in others they live with their parents and visit the school as ordinary children, travelling alone or being brought to school by guardians.

The *teachers* of the imbecile are generally, and ought always to be, special teachers. In some cases women are preferred on account of their graciousness and patience, in others men, because of their firmness. Every teacher must be a psychologist, and must specially study the abnormal developments of the mind, in order to wisely deal with the children committed to his care.

In some countries, Germany for example, the post of Director of a school for the mentally weak is rightly regarded as one demanding far more than ordinary qualifications.

Fundamentally the scheme of special education depends upon the application of physiological and psychological knowledge in assisting the mental and physical development so as to bring about a normal childhood. This medico-pædagogic treatment involves taking the child as it were by the hand, helping him to build up his physique, passing from his physique to his nervous system and his senses, from the senses to conceptions, from conceptions to ideas, and from ideas to moral life. All this the feeble-minded child of himself cannot achieve, but he is helped by the personality and guidance of his teacher to pass through these different stages, the one leading directly to the other.

The teacher for the kindergarten and the primary-school needs a knowledge of physiology and psychology, in order to properly discharge his or her task, that is even with normal children, and it is well recognised that this qualification needs to be still more thorough in the case of the teacher of abnormal children.

The art of the teacher must be most highly developed for these unfortunates, because they, more than others, need the most kindly teaching and attention, not only wisely directed, but also prompted and influenced by a kindly heart.

The teaching of imbeciles has to be largely *individual* teaching. Each child presents his own peculiarities, each needs special study and treatment. Empirical methods are useless; tact and sympathy, guided by the necessary knowledge of psychology and physiology, are the chief requisites.

Some idea is hereinafter given of the way in which these children are taught in several of the countries above mentioned.

In concluding the remarks of this section it ought to be pointed out that hopeless idiots, epileptics, and morally perverse children should not be associated with the imbecile or merely mentally feeble. The latter are indicated by weakness in memory, and in mental synthesis and analysis. This condition may or may not be associated with lack of veracity, or with an absurd credulity.

The morally defective betray themselves by intense egoism, mischief, spite, perverted animal tastes, perverted affection, etc. They must be dealt with on different lines, and not entered in the same school with the feeble-minded.

3. *General History of the Education of the Imbecile.*—Originally idiots and imbeciles (as unfortunately they still are by the thoughtless) were looked upon as fools, and were treated as such. That attitude to them is, however, rapidly disappearing in enlightened countries. For a long period there have been, of course, asylums for them and the insane, going back certainly to the 16th century. The systematic education of these unfortunates is, however, comparatively recent, commencing only in the earlier part of last century. Late in the 18th century, Philippe Pinel (1745–1826), a distinguished French physician, devoted a chapter in his *Traité médico-philosophique de l'alienation mentale*, to the question of idiocy in children. One of his pupils had later occasion to concern himself in regard to the education of the weak-minded. Itard.

Itard, Pinel's pupil, undertook (in 1800?) the education of a remarkable child, 15 years of age, picked up in the woods of Caure in Aveyron, and known as the savage of Aveyron. Itard explained his method of educating this child in two reports, these constituting afterwards the first chapter of a work on the treatment and education of idiots and degenerate children, which, despite its defects, is said to be still a model worthy of study.

In 1816, a simple schoolmaster, Goggenmoos, opened the first educational institution for abnormal children at Salzburg, which, however, despite the splendid results obtained, ceased to exist in 1835 for want of funds. The same fate attended the institution founded at Wildberg in Wurtemberg, by the Pastor Haldenwang.

Itard's ideas were taken up in 1824 by Belhomme of Salpêtrière and by Ferrus who, in 1828, installed the first school for these children at Bicêtre. Prior to this, viz., in 1818, Esquirol had shewn that idiocy ought not to be confounded with mental alienation, though he regarded it as practically irremediable. Itard took a different view from this, and his work was carried on later by his pupil Edouard Seguin, who developed the method of medico-pædagogic treatment of idiocy.

In France, the education of idiot children commenced in 1837. In 1838 Seguin published his *Conseils à Monsieur O. sur l'éducation de son enfant idiot.* He regarded idiocy not so much as a defect or malformation of the nervous system, as an arrest of the mental development, produced before, during, or after birth, and caused in a variety of ways; and his idea was that this arrest could, to a great extent, be overcome by proper treatment, so that the idiot might be returned to society and ordinary life, and occasionally restored even to a life of normal intelligence. Through the powerful influence of Esquirol, Seguin was authorised to put his method in practice in the hospital for incurables then at Bicêtre. His monograph *Traitement moral, hygiène et éducation des idiots et des autres enfants arriérés*, in which he explains the methods employed in the education of idiots, was honoured (*couronné*) by the Academy, and remains to-day an excellent manual on the education of the feeble-minded. In 1850, Seguin went to New York, where he continued his work until his death in 1880.

In Switzerland in 1836, a young physician, Guggenbühl, saw a cretin kneeling in front of a crucifix as though saying a paternoster. Touched by the sight, he devoted from that moment his life to the discovery of ways and means for aiding such a class, opening an establishment for the feeble-minded near Interlaken in 1841. Unfortunately not very many years afterwards this was closed through the antagonism of physicians, its founder soon after dying at Montreux in 1863 at the age of 47. His school—at Abendberg—had, however, been a place of pilgrimage for friends of humanity, and through his work, the ordinary attitude toward idiots was considerably changed.

In 1846, Miss White created the first educational asylum for idiot children at Bath, in England, numerous special schools following, among others, Essex, Colchester, Earlswood, etc., so that our own country was not far behind in this work.

In 1848, Dr. H. B. Wilbur opened a school for imbeciles in Massachusetts.

In Switzerland educative asylums for abnormal children were established, among other places at Hottingen, at Basel in 1857, Weissenheim, near Berne, in 1868, and at Etoy, in Vaud, in 1872. The first special classes for weak-minded children were founded in Basel in 1888, and there are now such institutions in the cantons of St. Gall, Zurich, Berne, Solothurn (Soleure), Basel, Aargau, Thurgau, Vaud, Appenzell, etc.

4. *France.*—Special schools for idiots and cretins are in France annexed to hospitals, such, for example, as those of Villejuif and Bicêtre. One of the oldest private institutions for the same class is that of Eaubonne, near Paris—this being now over fifty years old. The present school aims, according to its programme, "at conducting the child, as though by the hand, from education of the muscular system to that of the nervous system and senses; from the senses to perceptions, from perceptions to ideas, from ideas to morality."

Children are grouped into classes of about six pupils, according to the character and degree of their intelligence, thus permitting the masters to give almost individual lessons, while maintaining at the same time the benefits to be derived from emulation.

5. *Germany.*—According to the United States Commissioner of Education (Report 1900–1, p. 46), there were on 1st January, 1898, no less than fifty-nine schools for the education of the imbecile in Germany, with 11,964 children, the boys slightly preponderating (6 : 5), and a school has been opened near Jena by Professor Trüper for those who are more than ordinarily difficult to educate. The number had considerably increased by the end of the century—see hereunder.

The early history of the school for imbeciles in Germany has already been referred to.

In 1863, at a conference of teachers at Leipzig, Dr. Kern read a paper on "The Education and Care of Backward Children," advocating the creation of these special schools. Halle the same year saw the creation of such a school. Two years later a society formed among German teachers for the consideration of questions concerning the education of idiots held its first meeting at Hanover. A Dresden teacher, present thereat, on his return to the Saxon capital, induced the authorities to establish a school in 1867. Between 1880 and 1890, seventeen more towns founded such schools (Hilfsschulen), and by the end of the century no less than eighty-one different localities had followed this example.

The present view is that there should be a Hilfsschule for every town containing 15,000 inhabitants, the proportion of children requiring this special instruction varying from 1 to 2 per thousand of the population.

The original opposition of parents and others is steadily diminishing, partly through the excellence of the results obtained, and partly through the creation of a healthier public opinion as to the character and need of such schools. More reasonable opinion has been greatly helped by the good offices of the medical profession. Practically no stigma now attaches to attendances at the Hilfsschulen, and so far as the teachers are concerned, the offer of a post in such a school is regarded as a recognition of merit, for the qualifications required are special.

In the daily work of these schools the teacher has usually an absolutely free hand; they frame their syllabus of work and carry it out as they deem desirable in the interest of their pupils, it being really necessary to leave the teaching untrammelled.

In

In order that children should have the full benefit of the stimulus of the folk-school, and, moreover, because of the great difficulty in discriminating between imbecility and mere backwardness, it is usual to keep all children in attendance at the elementary folk-school until they are, say, 8 years of age. At a meeting of Hilfsschule teachers held in April, 1891, Herr Hanke, of Görlitz, said: "It is important that there should be two years' continual attendance, viz., from 6 to 8 years of age, at the folk-school, in order to see whether the child can possibly progress along with the other children." Where, however, the mental deficiency is clearly marked before this age, entrance to the Hilfsschulen may take place earlier than the eighth, but never before the completion of the seventh year. He affirmed that the proper person to decide as to the probability of a child benefiting by attendance at the special school is the trained psychologist and educator, and the practical experience of such a teacher is the best guarantee in an endeavour to determine the indistinct division between normal ability and backwardness, or between backwardness and practically hopeless idiocy.

Although in Germany children are free from compulsory school attendance after the age of 14, they are kept, at the request of their parents, for a couple of years longer in many of the Hilfsschulen. On the other hand, should unexpected development take place, transference to the ordinary school may follow, though, as experience increases, this is becoming more and more exceptional, since decision as to admission is better guided.

Miss Frances M. Nodes (Gilchrist Travelling Student for 1901), in her "Report of the methods of dealing with dull and backward children in the Hilfsschulen in Germany," remarks on the difference of the English and German attitude in regard to this point. In London the ability to return a defective child to the ordinary school is viewed as a success, while in Germany it is supposed to point rather to impropriety of the admission. If there are truly cases where the arrested development disappears, and the normal mental condition is established, then the English idea would be justified; but if, as is more probably true, the arrest so profoundly affects the whole subsequent life that the normal condition is rarely attained, then the German view is the correct one, for the stimulus of the ordinary school is to be preferred.

The registers chronicling the child's life are important, and are systematically kept. During the period of military or naval service, from which the pupils of the Hilfsschulen are not yet exempt, should they get into official trouble inquiry is made to see how far their offences may be regarded as the result of mental deficiency, and punishment is often mitigated, or the offender may be relieved of further service. The feeling is growing that the pupils of such schools should be absolutely excused in regard to military and naval service.

There are in Germany special laws for the protection of children up to the end of their 18th year (Fürsorgegesetze), and all children convicted of crime or misdemeanours before attaining that age can, if the civil magistrates so determine, be taken from their parents and placed in institutions, or with special families responsible for their behaviour. In dealing with such children the school records (Personalakten, Personalbogen) are examined as a guide to the magisterial decision.

6. *Scheme of the German Hilfsschule.*—The scheme of education in the Hilfsschule is as follows:—

(*a*) The education of the Hilfsschulen is complete in itself, so as to avoid any return of the pupil, consequently, to the lower classes of an ordinary school (for completion of education).
(*b*) The work is divided into three stages, with occasionally a preparatory division, with two divisions in each stage, these being usually under two or more teachers.
(*c*) The children remain under the one teacher for two or more years, so that each child shall acquire confidence in his teacher, and the teacher experienced in individual dealing with the children.
(*d*) Teachers take alternately the lower and upper divisions of a stage in order to thus remain two years in contact with the child.

The aim of the teaching in the different stages is as follows:—

(*e*) Lowest stage.—The individual's development.
(*f*) Middle stage.—Development of social and class feeling.
(*g*) Upper stage.—Qualification of the child to take his place as a member of the community.

In the lowest stage, elementary ideas of form, colour, and sound have to be inculcated, and the names of common objects and various common words taught.

Since power of speech is often very defective, corrective exercises in the form of lessons in enunciation must be given, each child receiving individual attention.

Although there is some difference of opinion among German teachers of defective children as to the function and value of manual instruction, there is general agreement that it is of value, and the majority are in favour of it being obligatory. It is conceded that the manual training should be in the hands of a trained teacher. This would include the performance of set duties, Froebelian exercises, making of models from cardboard, drawing, and woodwork, and finally various simple industrial occupations.

Great attention is paid to the moral education of the child. Miss Nodes, previously quoted, says:—

A great point is made of religious teaching, and the morning usually begins with the Scripture lesson. Simple Bible stories are taken; they are told by the teacher, illustrated by pictures, and retold by the children. In the lowest forms, the story of Joseph and some scenes from the life of Christ are considered enough for a year's work; the children, at the same time, learning a few short hymns and texts, which summarise the teaching of the stories. In the middle class the stories of the childhood of Moses, of the departure of the Israelites from Egypt, of Eli and Samuel, and of David and Goliath, with some New Testament stories, are added to those of the previous year, and the latter are also carefully revised. In the upper classes the aim of the religious teaching is to prepare the children for confirmation, which, in Germany, usually marks the close of school life. Such preparation is undertaken either by the head-master of the Hilfsschule or by a clergyman.

Some idea of the interest taken in Germany in regard to the education of the feeble-minded may be had from the fact that, at the Congress held at Augsburg on April 10th to the 12th, 1901, there were no less than 362 members, including inspectors, teachers, medical men, and representatives from Austria, Prussia, Bavaria, Saxony, and England.*

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* Special Reports Board of Education, London, Vol. 9, pp. 595-604 (A. Eichholz).

The following extracts from Miss Node's Report, previously referred to, will give a good idea of the course of instruction in the Hilfsschulen :—

"The course of instruction known in Germany as "Anschauungsunterricht" includes courses of lessons on many objects to develope the children's powers of observation and concentration by enabling them to form correct precepts and to express their ideas, and by familiarising them with objects of frequent occurrence in ordinary life. It forms a preparation for courses of lessons on the history and geography of the children's native town or country (*Heimatskunde*) and aims at widening the mental horizon of the pupils by degrees. . . . The earliest exercises are extremely simple; but the fact that such exercises are specially mentioned in school syllabuses shews what must be the mental condition of some of the pupils when they enter the Hilfsschule. They include ball-games, exercises with hoops and skipping-ropes, practice in fitting round pieces of wood into round holes, etc., and may embrace anything where correct observation is required. Later on, lessons are given on the child's person, clothing and food, on the schoolroom, its contents and their uses, the school-buildings, the playground, the school garden (which in some schools is cultivated by the pupils); on objects that can be seen from the school-windows, the sun, moon, and stars, familiar animals and plants, and the four seasons. Later still come lessons on the streets around the school, or the town in which it is situated, the occupations of its inhabitants, and the means by which they procure food, air, and light, the arrangements for keeping order in the place, and so on.

Closely connected with this Anschauungsunterricht is the training given in the use of the mother tongue, a subject which receives great attention in all German schools. Its chief branches are, of course, reading and writing. The former is taught in Hilfsschulen on various plans, but usually by some modification of what is known in England as the "Look and Say" system; the children learn the written characters so that they may be taught to write and read by one and the same mental process. But in some schools, single sounds are taught first, then vowels and consonants are combined, and, finally, words of one syllable are built up and mastered by the children. An excellent apparatus is in use in many of the schools, consisting of a wooden box having a graduated bottom and five sliding partitions side by side, on which the letters of the alphabet are fixed, one behind the other. The letters can be pulled up by the teacher so as to form any word of five letters, and the partitions can be shifted so as to bring the letters to the same horizontal level. Many of the children have the greatest difficulty in putting together the letters which they know quite well separately; thus, though a child can pronounce B A and C H, it fails to recognise the word BACH, though the only effort needed is the prolongation of each sound until the next is said. As soon as the children can recognise words, very easy reading books are introduced. . . . In the lower classes all teaching centres in the "object lessons" which the "special," reading book supplies. . . . Reading and writing are taught *pari passu*. First the written letters of the German alphabet are mastered, and afterwards the ordinary Latin characters. Much time and attention are devoted to the formation of good hand-writing, and the results are usually excellent. In the upper classes, the children also write very well from dictation. But the culminating point of this training is the use of the mother-tongue in essay-writing.

Grammar also receives a share of attention. The children learn to distinguish the parts of speech, to decline articles, nouns, and adjectives, to conjugate verbs, and to place the right cases after prepositions.

The most difficult subject for such children is, of course, arithmetic, and here the teachers are forced to content themselves with a low standard of attainment; yet, in most cases, the children learn enough to enable them to keep household accounts. Nearly all the work is mental, and forms a valuable exercise in the power of concentration. The average time devoted to arithmetic is half an hour a day, and in the lower forms this study is closely connected with Froebel's occupations. In some schools a thorough acquaintance with the numbers 1-10 is considered sufficient achievement for the first two years; after that, the children proceed to perform the various operations of the first four rules with those numbers. Even in the highest classes no numbers over 100 are introduced. . . . In the earlier stages, concrete illustrations, such as cubes, buttons, sticks, or fingers, are always used, and, even in the higher stages, such aid is constantly employed. The Russian counting machine is in frequent use; one school possessed an improved form. Cubes coloured white on one side and red on the other were employed instead of balls, with the advantage of being applicable to the building up of the multiplication table. The cubes can be turned over in sets; *e.g.*, for the 6 table, six red cubes are followed by six white ones, and so on, and the children see at once that $6 \times 2 = 12$, $6 \times 3 = 18$, etc. This is supplemented by number pictures and any other helps that the ingenuity of the teacher can supply.

Manual work is of special importance for children of low mental capacity, though they are not receptive pupils. In dull and apathetic children it arouses and developes a love of activity; while it directs into proper channels the restlessness of the over-excitable and nervous. It exercises the senses which in backward children are in most need of training—especially touch and sight. It has a direct moral influence in teaching the value of work and the joy of completing an object, however simple; and finally, since most of these children earn their livelihoods afterwards by some simple handiwork, it prepares them for the future.

In the lowest classes, stick-laying and bead-threading are practised, and the children draw objects from memory on their slates. In the following year, paper folding and plaiting are introduced, then come paper-cutting and cane-weaving. In the upper classes boys and girls are separated. The boys do card-work and wood-work, sometimes chair-caning and mat-making. The objects made are all useful, *e.g.*, in card-work, letter-racks and boxes; in wood-work, boot-jacks, knife-boxes, etc. The girls are taught needlework as soon as they have passed out of the lowest class but one. For the first two years they do knitting, and generally complete one or two pairs of stockings. During the last two years they learn the various stitches used in plain needlework, the making of a chemise, darning and patching.

Singing is used as a means of relieving the strain of harder work. In the lower forms, little songs and hymns are sung at intervals during the morning; in the higher ones, regular singing lessons are given once or twice a week. In some of the schools two-part songs were well rendered.

The instruction is given generally in the morning only, and even then not every day in the week. In Leipzig attendance is optional on Mondays and Wednesdays, compulsory on Tuesdays and Thursdays.

The success of the work is shewn by the callings of the pupils after leaving school. Miss Nodes states that the head-master of the Elberfeld school made inquiries in this regard, with the following results:—House painters, 2; messengers, 12; bakers, 4; builders and masons, 7; bookbinders, 2; clerk, 1; factory hands, 86; dyers, 11; barber, 1; driver, 1; locksmiths, 5; shop assistants, 6; domestic servants, 22; machinists, 5; bricklayers, 5; butchers, 4; seamstresses, 17; saddlers, 3; umbrella-maker, 1; polishers, 2; tinkers, 5; smiths, 4; tailors, 5; joiners, 9; shoemakers, 4; while others had regular employment as messengers, road-sweepers, etc.

Better testimony of the usefulness of these schools could hardly be had. These unfortunates, whose lives, without the special education so provided, would have been a source of constant concern to their relatives, and a drain on their resources, have been transformed into useful members of the community, able to earn their own livelihood, and to feel that self-respect which comes from a consciousness of sharing the common lot of mankind.

7. *German form of personal record.*—The "*Personalbogen*" of each child, the importance of which has been previously referred to, takes the following form, according to Miss Nodes (before mentioned):—

I. To be filled up by the head-master of the elementary school from which the child comes :—
   1. Name.
   2. Date and place of birth.
   3. Address.
   4. Name and profession of father.

II. Previous school record :—
   1. Date of admission.
   2. Change of school.
   3. Dates of absence for lengthy periods.

4. Present state of child's acquirements—(a) Reading, (b) Writing, (c) Arithmetic, (d) Memory Work.
5. Conduct and character.
6. Any marks of mental deficiency specially noted (causes of backwardness, memory powers of association, general capability).
7. Home circumstances of child. Is he well nourished? Is tobacco or alcohol given to it? Is it capable of earning anything?
8. Other remarks.

III. To be filled in by the Medical Officer:—
1. General physical condition. Is the child scrofulous? Has it had rachitis, or tuberculosis? Formation of head. Measurement.
2. Mental condition. Sight, hearing, speech. Conditions of respiratory organs; are adenoids present?
3. Previous history—(a) Heredity. Is there mental weakness? Insanity? Criminal antecedents? Blood relationship of parents? Tuberculosis? Drunkenness? (b) Circumstances of parents. (c) Development of child; teething; age at which it walked; age at which it learned to speak; home training (d) Illnesses it has had. Meningitis? Convulsions? Injuries? Operations? Injuries to the skull at birth? Infectious diseases?

IV. Opinion of the doctor.

V. Opinion of school inspector.

After the child's admission to school, records are kept of its progress, the "Personalbogen" being filled up by the lass teacher and the medical officer of the school, every year and half year. On the dismissal of the child, a statement is made with regard to the trade it enters, or the calling it adopts.[1]

These records are carefully kept. Some idea of their details will be given later for a Swiss case.

8. *Hungary.*—The Institution for the education and instruction of idiots and imbeciles at Budapest is on the right bank of the Danube. Its object is the double one of educating the imbeciles, and training special teachers. These must have first obtained the primary teacher's diploma.

The special teaching of them in connection with their function as teachers of the imbecile, dwells especially upon the central nervous system, anatomy, the treatment of speech defects, the psychology and pædagogy of idiots and imbeciles.

The examination passed by teachers embraces a theoretical and practical section concerning methods of teaching, and upon the history of the education of idiots.

The aim is expressed in the official programme as that of giving the pupils "a good religious and moral education, to habituate them to goodness, and by means of a special method of instruction, to teach them to speak, to give them such elementary knowledge as they are capable of understanding, ... to qualify them by special teaching to earn their living, etc."

After leaving the institution the pupils are placed under the care and direction of workmen, agriculturists, or horticulturists, who are held responsible for them.

The age of entrance is 7–10, and duration of teaching eight years; no one may be a pupil more than ten years. The programme is:—

(1) Religion and morals.
(2) Exercises in speaking and of the intelligence.
(3) Reading and writing.
(4) Grammar and composition.
(5) Arithmetic.
(6) Drawing and caligraphy.
(7) Singing.
(8) Gymnastics.
(9) Dexterity.
(10) Manual work.

Not more than *ten pupils* are in a class. Great importance is attached to teaching by intuition, to the function of games, to the use of exercises that awaken the sense-organs, the instinct of imitation, and the moral forces, and to the formation of the "temperament" of the pupil.

In the preparatory class the children learn to recognise the parts, colours, form, and matter and names of various objects, the course being later more developed.

They learn clay-moulding (pottery), brush, basket, and mat making, and in summer they are employed in the garden.

The girls learn needlework, dressmaking, darning, crochet, knitting, embroidery, etc.

9. *Norway and Sweden.*—The former country, *Norway*, possesses three schools for imbeciles with sixty-seven teachers and 420 children. The latter, Sweden, organised the first school, private, in 1864 at Skövde, but now has thirty-four establishments, all residential, generally under the superintendence of women, the number of pupils never exceeding about eighty in a single establishment. The Swedish view is that women, being more kindly and patient than men, are better for this class of teaching. The classes are one year in length, the preliminary class, however, being two years. The programme is as follows:—

Swedish.	Natural Science.	Drawing.
Religion.	Writing.	Singing.
History and Geography.	Arithmetic.	Gymnastic.

Manual work in wood, basket, brush, and shoe making, book-binding, gardening, etc., are taught, and also suitable work for women.

Special workshops, etc., have been established for idiots in consequence of the difficulty, despite the manual dexterity they acquire, of working in good comradeship with those normally endowed.

For men, many of these working establishments are established in the country, horticulture or agriculture being carried on with much success, for they discharge such work and attend to cattle, etc., quite satisfactorily. For women, the working centres are generally established in the towns, the inmates contributing to their keep by tapestry, weaving, quilting, dressmaking, lacework, etc.

There are about 159 imbeciles per 100,000 inhabitants in Sweden.

10. *Switzerland.*—The part Switzerland has taken in the education of the feeble-minded has already been referred to. During the decade 1880–1890, Swiss pædagogues very specially interested themselves in this question. The Zurich school-synod brought about the opening of a special establishment at

[1] F. M. Nodes' Report, 25-26.

at Regensberg, under the ægis of the Zurich Society of Public Usefulness. Conrad Auer's tractate' ("Wie wird fur die körperlich und geistig zurückgebliebenen insbesondere für die schwachsinnigen. Kinder unserers Vaterlandes in ausreichendem Masse gesorgt? Auf welche Weise kann und soll die schweizerische Lehrerschaft die Lösung dieser dringlichen segensreichem Aufgabe richtig vorbereiten und wirksam fördern?") presented a view of the importance of the question which led the Federal Council to undertake, at the request of several societies of Swiss teachers and the "Commissione della Società degli Amici d'Educazione" of Tessin, to undertake an inquiry as to the number of abnormal children.

Among recently formed classes may be mentioned those at Basle, established in 1888, upon the initiative of M. Lagiarder, Rector of the Superior School for young women. Those at Zurich were placed under Herr Fisler, in 1891. According to this authority, ability to read and write ought not to be considered as *the measure of capacity* of the intellect of backward children. In his view, to awaken the intelligence and the judgment by every possible means is of the greatest importance, but that the child should learn to read six months sooner or later signifies, after all, very little for his future.

There are about 1·5 per cent. of feeble minded children in Switzerland, the total number of special schools for them being seventeen, with about 735 children (31 Dec. 1900), the proportion of the sexes being approximately equal.

11. *The Swiss Individuality Register.*—For every imbecile child, a Register, known as the "Individualitätenbuch," is kept in Switzerland as in Germany, in which everything of importance concerning the physical, intellectual, and moral state of the child is entered, the following points being noted:—

(*a*) Information from the parent, tutor, or master, as to the child's past.

(*b*) *Physical state.—Size*, proportions of various parts of the body, carriage of the child in sitting and standing, infirmities.
Head: size of, eyes, ears, nose, throat, mouth, lips, teeth, tongue, skin, etc.
Automatic Movements; balancing of a part of the body, the child slips, strikes himself, moves as if he were washing, makes grimaces, contorts his fingers, etc., etc.?
Instincts of cleanliness, of destruction, spirit of contradiction, etc.

(*c*) *Intellectual State.—Intellectual capacity in general*; memory, judgment, interest, attention, imagination. Development of speech, pronunciation; vigorous, weak, nasal, incorrect, syllables missed, stammers, stutters, etc. Absence of connection between perception and the word expressing it; between letter and sound; figure and number; idea and word, etc.
Confusion of words (*e.g.*, "table" for "cover"). Frequent employment of the infinitive. Erroneous use of tenses.

(*d*) *The moral state.*—Disposition sullen; grumbling. The pupil is fearful, indifferent, joyous, glad, idle, soft, inclined to laugh, loquacious, proud, arrogant, boastful, brave, affectionate, impudent, sociable, rude, cruel, etc.
Æsthetic sentiments; form and colour sensation, sense of order, of punctuality, etc.

(*e*) *Important observations.*—Attitude during lessons; mode of reply to questions; knowledge and technical skill on entering the school, progress during stay in school. Behaviour during games, during walking, etc.

(*f*) *Subsequent career of pupil.*—This last can be illustrated by an example translated from the Register of Herr Fisler.

A. B., born 1877; entered special class in 1891.

Before entrance to School.—Did not walk till the age of 3 years; had chronic eruptions on the head; fell down stairs; from that moment he declared to his mother that he could no longer draw what he wanted to. Later he had pneumonia, then the gout and finally measles.

Physical State.—Size, normal; colour, pale and jaundiced; trembles at the least emotion, is fearful, cries, and often has pains in his head.

Intellectual state.—Dull of comprehension, could neither read nor write at the time of admission to the special class, though he had been six years in an ordinary school. Evidence of his last master: "The poor boy is illiterate and must be abandoned to his sad fate." Has no notion of numbers, or of their increase or diminution, cannot certainly distinguish between 5, 6, or 7.

Moral State.—Anguished, conscientious, speaks often of his dead father, has great goodness of soul, is docile, is prematurely reasonable (altklug).

Abnormal Phænomena.—Has a kind of aphasia in his speech (*e.g.*, instead of Hörner he says Hören, then he strikes his forehead in attempting to repeat, saying, "No, not Hören, Hören, no!" without ever succeeding in pronouncing the word). To draw a straight line with a ruler is to this child of 14 years an impossible undertaking.

Progress in Speech.—In a year and a half, has not only learnt all his letters, but also manuscript and typographical writing; has succeeded in this space of time to read words, little phrases, and to add and subtract within the limits of 1 and 30.

Subsequent career of the child.—Transferred in 1892 to the Institute at Wilhelmsdorf by his tutor; from that date all information received has been favourable. When his sister, after the death of the father, entered the orphanage at Zurich, he accompanied her to the entrance of the establishment and then commenced to cry, saying in a resigned way and heaving a deep sigh, "Ach jetzt isch sie dinne" (meaning, "Ah, there she is now"), imagining that his sister had entered the penitentiary and not the orphanage. But according to a report of August, 1895, this child was in a situation with a physician at Wilhelmsdorf. Though still feeble in body and intellectually, he is faithful, affable, and conscientious, and has therefore become a useful young man.

The above translation of the Register sufficiently indicates the method of keeping a record of each pupil; at the same time it reveals the useful character of the work done in a case by no means promising.

12. *United Kingdom.*—Asylums for imbeciles have, as already mentioned, long existed in England, but adequate recognition of the fact that many of these unfortunates can be made useful members of the community is only of recent date. The Leicester School-Board established a "Special Class" for backward children in 1892; London, its "Centres for Special Instruction," in 1893; since which, Birmingham, Bradford, Liverpool, Brighton, Bristol, and Nottingham have followed in the same path. The unsatisfactory results of what is known as "*Standard O*" in the Elementary Schools led to the appointment of a Royal Commission to consider the question of the suitability of schools of the type of German Hilfsschulen already referred to.

13.

[1] Auer was a secondary school master at Schwanden, Glaris, Zurich, 1896. "How can the physically and mentally backward, and particularly the feeble minded children of our fatherland, be adequately cared for? In what manner can and ought the Swiss teaching profession to properly prepare and actually forward the solution of this pressing and promising problem?"

13. *United States.*—Dr. H. B. Wilbur, in 1848, was the first in America to open a school for the care and education of imbeciles. This was in the village of Barre, in Massachusetts. Shortly after, Dr. S. G. Howe opened a similar school in South Boston. Seguin's work in New York has already been referred to (1850). Pennsylvania soon followed New York.

According to the last report of the United States Commissioner of Education (1901, vol. 2, p. 2351), 20 schools reported a total number of 45 male teachers, 206 female, and 928 assistants. These schools had 5,949 male, 5,200 female, and 984 kindergarten pupils—11,149 in all. Beside these there were 12 private schools, with 55 teachers and 468 pupils (287 boys, 181 girls).

14. *Bibliography.*—The following bibliography referring to the subject of the education of the feeble-minded is simply a record of a few works on the subject that have come under notice. Imperfect as it is, it will at least serve to shew how extensive the literature of the subject is becoming :—

Bourneville.—(a) Recueil de mémoires. Notes et observations sur L'idiotie (1772-1840. (b) Assistance, traitement et éducation des enfants idiots et arriérés.
Seguin, E.—(a) "Conseils a Monsieur O, sur l'éducation de son enfant idiot." (b) Rapport et mémoires sur l'éducation des enfants normaux et anormaux. Preface par Bourneville.
Itard.—Rapports et mémoires sur le sauvage de l'Aveyron.
Hamon du Fougeray et Couetoux, L.—Manuel pratique des méthodes d'enseignement speciales aux enfants anormaux. (Publications du Progrès medical, Paris, Felix Alcan.)
Pinel, P.—Traité médico-philosophique de l'alienation mentale. Paris. 1791.
Stötzner.—Schulen fur schwachbefähigte Kinder, Leipzig, 1864.
Barthold.—Der erste vorbereitende Unterricht für Schwache und Blödsinnige. Leipzig, 1881.
Sollier.—Der Idiot und der Imbecille. Hamburg, 1881.
Sengelmann.—Idiophilus. Norden, 1885.
Förster.—Der geistig zurückgebliebene und seine Pflege. Dresden, 1888.
Schmid.—Die Stiefkinder in der Familie und Schule. St. Gallen, 1888.
Kielhorn.—(a) Die Fürsorge fur geistig Minderwertige. (b) Die Organisation der Hilfsschule. (c) Die Erziehung geistig zurückgebliebener Kinder in Hilfsschulen.
Kielhorn.—(a) Die Hülfsklassen fur schwachbefähigte Kinder in Braunschweig. (b) Ueber Schulen für schwachbefähigte Kinder. (c) Die Schule für schwachbefähigte. 1890.
Reinke, W.—Die Unterweisung und Erziehung schwachsinnige Kinder. Berlin, 1891.
Ufer, Ch.—(a) Geistesstörung in der Schule. Wiesbaden, 1891. (b) Das Wesen des Schwachsinnes. Langensalza, 1892. (c) Die Kinderfehler, Zeitschrift fur pädagogische Pathologie und Therapie, Koch, Ufer, Zimmer et Trüper. Langensalza, 1896.
Auer, C.—Wie wird fur die körperlich und geistig zurückgebliebenen insbesondere für die schwachsinningen Kinder unseres Vaterlandes in ausreichendem Masse gesorgt? Auf welche Weise kann und soll die schweizerische Lehrerschaft die Lösung dieser dringlichen segensreichen Aufgabe richtig vorbereiten und wirksam fördern. Zürich, 1896.
Heller, T.—Ueber Ermüdungsmessungen bei schwachsinnigen Kindern. Zeits. f.d. Behandl. Schwachs. 1898. Vol., 14, pp 136-150.
Piper.—Wie können wir die sprachlosen schwachsinnigen Kinder zum Sprechen bringen? Ztschr. f.d. Benhandl. Schwachs. und Epil., 1898. Vol. 14, pp. 100-108.
Fuchs, A.—Schwachsinnige Kinder, ihre sittliche und intellektuelle Rettung, Gütersloh. 1899.
Kalischer, S.—Was können wir für den Unterricht und die Erziehung unserer schwachbegabten und schwachsinnigen Kinder thun?
Horrix, H.—Das erziehliche Wirken der Hilfsschule.
Bancroft, Margaret.—The claims of the feeble-minded. Proc. N.E.A., pp. 674-677. 1900.
Grohmann, A.—Der Schwachsinnige und seine Stellung in der Gesellschaft. Für Eltern und Lehrer. Ed. Rascher, Zurich, 1900.
Grothe, A.—Ueber Schuleinrichtungen für schwachbegabte Kinder. Zeit. für Schulgesundheitspflege, 1900.
Horrix, H. Worin hat die Abneigung einzelner Eltern gegen die Hilfsschule ihren Grund, und wie ist sie zu beseitigen? Kinderfehler. Vol. 5, pp. 168-173. 1900.
Schenk, Alwin. Zur Fürsorge für die Geistesschwachen in Holland, Belgium, Frankreich und Luxemburg. Kinderfehler, Vol. 5, pp. 270-276. 1900.
Shuttleworth, G. E. (a) Anatomic pathologique de l'idiotie. Arch. de Neurol, 1900. Vol. 10, pp. 301-320. (b) Mentally deficient children. London, pp. 180. 1900.
Tows, J. Heilpädagogische Anstalten. Zeits. f. Philos. und Päd. Langensalza, Vol. 7, pp. 24-40. 1900.
Wylie, A. R. T. (a) A study of the senses of the feeble-minded. Jour. of Psycho-Asthenics, Vol. 4, pp. 137-150. 1900. (b) Motor ability and control of the feeble-minded. Jour. of Psycho-Asthenics, Vol. 5, pp. 52-58. 1900.
Rein. Encyklopädisches Handbuch der Pädagogik, article by Ziegler, C. Hilfsschulen fur Schwachbefähigte.

15. *Conclusions.*—The work of the schools for imbeciles has been most encouraging. Very many individuals of this unfortunate class, who were until comparatively recently considered beyond remedy, are now restored to the possibility of a useful and happy life. Not only have they the healthy sense of independence, but their understanding of the world and their fellow-beings is enlarged, and their interest deepened. Apart from all humanitarian questions, there is a public economy in so transforming an imbecile, and, even if we repudiated our human duty, it would still remain true that as an economic one we ought to attend to the education of this class.

It is therefore recommended that—

(1) Special schools for the backward be established on the lines of the Swiss and German schools for the same class.
(2) That these have *small* classes—not more than ten in a class—for most subjects of instruction.
(3) That devoted teachers, with proper knowledge of the psychology of the abnormal, be chosen for these schools, who will charge themselves with the special study of the education of these unfortunates, and keep themselves specially informed to this end.

CHAPTER XLII.

CHAPTER XLII.

Schools for the Deaf and Dumb.

[G. H. KNIBBS.]

1. *Introduction.*—The duty of caring for the education of abnormal children is fully recognised in all civilised countries, and great progress has been made in the education not only of those who have been poorly endowed as regards intelligence (these have been treated of in the preceding chapter), but also those whose hearing and speech organs are in any way defective. This chapter is devoted to the question of the education of the deaf and dumb.

2. *Instruction of the Deaf and Dumb in France.*—The "Conseil-genèral" and the "Préfecture de La Seine" established a special institute for the deaf and dumb (Sourds-muets) at Asnières, a village of about 25,000 inhabitants, on the left bank of the Seine. Through a specially organised physical and intellectual training, a special vocal gymnastic, general care for their nourishment, and, above all, through a most kindly affectionate solicitude for them on the part of the masters and mistresses, deaf and dumb children have been taught to understand speech which they cannot hear, to speak with great clearness, and to take part in the ordinary affairs of life. Under the care of M. G. Bagner, the institute of Asnières has rapidly progressed, as the following statistics shew:—

Year		1894.	1895.	1896.	1897.	1898.	1899.	1900.
Pupils	80	109	133	144	170	180	200	220

The house is equipped to receive 350 pupils, of from 4 to about 17 or 18 years of age. The school embraces an infant school, a girls' school, and a boys' school. The deaf and dumb children learn to speak, and, by watching the lips, to understand also the speech of their teachers and others, so that their instruction after a time can be based largely upon oral methods, notwithstanding the fact that they do not hear.

The primary instruction which they receive and profit by permits them, as in the ordinary schools, to obtain the school certificate (certificate d'études). After five years' tuition, no less than thirty pupils submitted themselves with success in both the written and oral parts of the examination, to the ordinary examining body.

The phonetic elements of the language are communicated by getting the pupils to imitate the movements of the instructor's lips, he enunciating with great distinctness. It is, of course, neither possible nor necessary to enter into the details of the system of lip-reading, which is not entirely unknown in this State. Reference, however, may be made to the system of teaching:

The children are instructed partly by speech, and partly by writing-lessons. To enable them to correct themselves in the matter of distinct enunciation, mirrors are largely used, the wall surface being provided therewith. Regarding the detail of the instruction, it may be said that it is based upon the intuitive method in its most rigorous form. After the power of speaking has been developed, the vocabulary is enlarged, mainly by means of *object-lessons*. It is really by direct personal observation, and through the analysis of his own sensations, that the pupil is able to acquire the series of ideas which the master wishes to communicate to him; and then, according to the measure of his needs, the words.

This intuitive method of teaching will explain what is likely to strike any visitor of the Institute, viz., the rather large number of objects, pictures, etc., that are to be found in the schoolroom. It is by the same intuitive method that it is possible to teach *grammar*, *i.e.*, by means of language itself, by observation, by the analysis and reconstitution of a word, of a phrase, a sentence, or a discourse.

The idea of *number*, the exercises in *arithmetic*, and in the *metric system*, are also managed by daily handling the proper objects, by the decomposition and reconstitution of quantities, and by series "problems in action;" as it were.

For the teaching of geography and history, the picture, plan, and map play the principal part. By repeated comparisons and constant references, the pupil is made to understand the relation of the region where he is domiciled, to the region to which his geography lesson refers.

The teaching of *ethics* always proceeds from the concrete to the abstract, from moral facts to the moral ideas.

The whole system may be summed up by saying that one commences with sensorial education, viz., by observation and by imitation. Judgment is provoked by the comparison of sensations, by the evocation, the recall, of things seen and experienced. The memory and the imagination are exercised, and finally memory, imagination and judgment are all systematically directed toward a moral end and a useful development of the moral personality.

Physical education is carefully attended to, the institution having the requisite equipment, and the well-being of the children is assured by the care of the chief medical officer, and by an oculist, an aurist, and a dentist.

To

To complete the education of the deaf and dumb it is necessary to give them an apprenticeship to some calling. Educative manual work, therefore, has always had the special care of this Institute, and from their entrance into the school the boys and girls are initiated into those manual exercises (folding, weaving, cutting, etc.) which aim at training the eye and hand. In addition, the girls are occupied with sewing and domestic work.

As soon as they have sufficient strength the boys learn to use the tools of the joiner, locksmith, etc. Following the Parisian method of manual teaching, they construct in wood and iron those geometrical forms with which every workman ought to be acquainted, and, between the age of 13 and 14, according to their development, select whatever calling is agreeable to them. From this time a half of every day is devoted to the apprenticeship work. This lasts about four years.

The workshops are connected with the establishment itself. They are for joinery, cabinet-making, locksmithing, adjusting, shoemaking, tailoring, hosiery, the manufacture of children's clothing, embroidery. Other branches are soon to be opened. A committee, who take an interest in the work of the Institute, place the young people on leaving the school where their personal independence and their social utilisation are assured.

In connection with the teaching of deaf mutes to speak, attention may be called to the method of M. Emile Grosselin, which he calls *Enseignement phonomimique* (phonomimic teaching). This method has not yet commended itself as strongly as that in use at the Institut d'Asnières.

3. *Teaching of Deaf and Dumb in Holland.*—Holland has given considerable attention to the question of the education of the deaf and dumb (Doofstommen-Onderwijs), and possesses in Rotterdam a celebrated institution founded in the year 1853. According to the Report of its 48th year, 1900–1, there were 147 pupils, viz., 62 girls and 85 boys during the year,[1] 118 of this number being educated *gratis*. By article 2 of the rules dated 31st January, 1853,[2] the instruction embraces :—

(*a*) Mechanical speaking by sight, reading and writing from dictation.	(*h*) Arithmetic.
(*b*) Intuitive instruction, language.	(*i*) Drawing,
(*c*) Reading.	(*j*) Religion.
(*d*) Grammar.	(*k*) Geography.
(*e*) Method.	(*l*) Natural science.
(*f*) Spoken language of daily life.	(*m*) History.
(*g*) Caligraphy.	(*n*) Drawing.
	(*o*) Gymnastics.

Some idea of the manner in which the dumb are taught to speak in this institution may be had from a publication, "De eerste trap van het Doofstommen-Onderwijs, Handleiding voor hat Onderwijs van Doofstommen in het Afzien, Spreken, Lezen en Schrijven door, Ic. Bikkers."[3] (The first step in the education of the deaf and dumb: a manual for the instruction of the deaf and dumb in observing, speaking, reading, and writing, by Ic. Bikkers). This outlines very clearly the essentials of the method. The general course is very complete, and the results attained excellent.

4. *Teaching of Deaf Mutes in Hungary.*—Hungary took steps to care for its deaf mutes as far back as 1799, and its Institution at Vácz, fully established 15th August, 1802, is one of the oldest in Europe.[4] During the period 1808–1834 the mixed method was employed, viz., *signs* and *speech*. The purely vocal system (German system) was not introduced till 1873, and between that year and 1889 the establishment was gradually modified so as to make use exclusively of the new method.

In 1875 the course lasted from 6–8 years. In 1882–3 the "professional system" was replaced by what is known as the system of classes, each teacher, that is, going with his pupils to the higher class as they are qualified for promotion.

In 1891–2 horticulture was added to the course, and in the same year the regular examination of the hearing and speech organs of every pupil was instituted. In 1896 manual work for girls was also added to the programme of lessons.

The subjects of instruction are now those of the primary school, but drawing, writing, gymnastics, manual dexterity, and manual work for girls are given greater weight.

In the first year of study special attention is paid to the exercises designed to produce sensitiveness of the muscles. These are based upon the normal senses of sight and touch, thus replacing the sense of hearing by the sense of muscular movement. It being assumed that children in the full possession of all their senses learn to speak by *imitating* what is said to them, the deaf mute similarly learns, viz., by *intuition* and by *touch*, to recognise the movements of the muscles necessary to pronounce a word. Moreover, the deaf mute must learn to estimate the respiration, so that it can be utilised in utterance. By touch he can feel the vibrations of the vocal and respiratory organs, and so take cognisance of the muscular effort necessary to enlarge the chest, etc. He thus learns the exercises which are necessary in order to imitate the speech movements.

In this first year of his school career education in the formation of the vocables is prescribed. There are from 150–200 words and short phrases that he must read from the mouth of the master and repeat. He transcribes at once the word pronounced, and then reads it aloud. Great importance is attached to correct pronunciation of the words learnt, and to this end the course of eight years comprises also *special lessons in regard to the way to pronounce correctly.*

From

[1] Verslag omtrent de Inrichting voor Doofstommen-Onderwijs te Rotterdam, over het acht-en-veertigste jaar van haar bestaan, 1900-1, p. 4.

[2] Reglement der Inrichting voor Doofstommen-Onderwijs te Rotterdam gevestigd, 31 Januari, 1853, pp. 3-4. Artikel 2.

[3] Rotterdam, 1902, a pamphlet of 75 pages.

[4] Royal Hungarian Institution for the education of deaf mutes, and for the training of teachers of deaf mutes.

From the commencement of the second year, the principles of teaching in the ordinary primary school serve as the foundation for the scheme of instruction. In the time ordinarily devoted to speaking and reading in the primary school the deaf mute is similarly engaged. He learns to read aloud and to understand what is read to him, learns the elements of the language and grammar, ordinary speech being the mode of communicating that knowledge which is to awaken his faculties and to inform him.

Naturally the first place is very properly assigned to exercises in speech; the second place to perception (intuitive teaching), and the third to writing.

In order to utilise whatever traces of hearing may be possessed by the pupil, actual experiments are conducted in "Exercises in hearing on Urbanschitsch's system."

The teaching body of this fine school consists of a director, 15 teachers, a drawing master, 4 religious teachers, and 2 mistresses for manual work. It has 15 well-equipped schoolrooms for its 15 classes, one room for drawing, three rooms for practice of various kinds, leading to skill in manual work, etc., one gymnastic hall, one council room, one library and school-material room, one reading-room, and a garden with plot for gymnastic exercises. The whole accommodation will allow for the teaching of 160 pupils, of which 60 boys and 40 girls may be resident.

The director and the general administrator, with their dependents, live in the building, and there is besides accommodation for 2 female teachers, 3 pupils qualifying as teachers, the portier, housekeeper (a woman), gardener, and servants (5 men and 5 women), kitchen, etc.

There are large sleeping rooms, dining halls, studyrooms, toilet and bath rooms.

For accident cases and the sick there are two infirmary halls, with residence quarters for the nurses.

The lighting of the institution is by gasoline.

Its garden admits of teaching in agriculture and horticulture being given.

The institute has 81 bursaries at its disposal, giving the right to residence and instruction, 43 of these being nationally and 38 privately endowed, and the city of Budapest pays annually 4,800 kronen (£196) for 12 pupils. In addition there are three foundations for the purpose of helping the pupils when they leave the institute.

In 1900 the pupils were:—123 Roman Catholics, 29 Orthodox Greek Church, 2 Calvanists, 13 Lutherans, and 5 Jews.

The property of the institute bringing revenue is 1,179,228 kronen (£48,132), the revenue therefrom being 35,972 kronen (£1,468), which, with other receipts, amounts to 48,150 kronen (£1,965). This, together with 57,500 kronen (£2,347) allotted by the State, form the resources of the institution.

Besides the institute for deaf mutes at Vácz there are also similar establishments on a smaller scale at the towns of Kolozvár, Temesvár, Arad, Kaposvár, and also a Jewish institution at Budapest.

5. *Training of Special Teachers for Deaf Mutes in Hungary.*—Till 1876 in Hungary only the Vácz institution existed. In 1879 it was required that every teacher of deaf mutes possess the diploma of the primary course, and then in 1880 that he pass through a *special course.*

In 1890 a *practising school* for practice in teaching deaf mutes was attached to the Normal school for elementary, primary, and higher primary teachers of the 1st District of Budapest. The special part of the teacher's education is a two years' course, one year being devoted to theory, the other to practice, the examination being similarly divided into two sections.

The written part of the examination (theoretic) bears upon the professional teaching, the oral part is an examination in

(1) Anatomy and physiology of the organs of hearing, with a brief description of the central nervous system.

(2) Phonetics, and in particular the phonology of the Hungarian language.

(3) Psychology and deaf mute pædagogy.

(4) Methods of teaching deaf mutes.

(5) History of teaching deaf mutes

The practical part of the examination is teaching. From 1879–1900 about 402 teachers have qualified. It will be seen that a thorough system for the education of the teachers is demanded here also.

6. *Swiss Teaching of the Deaf and Dumb.*—The institution for the deaf and dumb of Vaud (Institut cantonal des sourds-muets) at Moudon was visited by the Commissioners, and the excellence of the results obtained was remarkable, the children speaking and reading with great distinctness, though perhaps somewhat monotonously. This, however, is not to be wondered at. Switzerland has several of these institutions; for example, Geneva has an institution, subsidised by the State, dating from 1835; Zurich has one of the first rank; Fribourg has one at Gruyères, and Vaud that at Moudon abovementioned.

Quite recently the institution at Moudon was installed in a building placed at the disposal of the deaf mutes, the cost of the restoration and equipping being something like £4,000.

The Swiss methods do not materially differ from the French, Dutch, Hungarian, American, German, etc., and detailed reference thereto will, therefore, be unnecessary.

t. Teaching of the Deaf and Dumb in other countries.—The number of schools for the deaf in various countries is, roughly, as follows:—

United States ...	... 105	Denmark ...	... 5
Germany ...	... 98	Netherlands ...	... 4
France... ...	... 70	India	... 2
United Kingdom	... 46	Japan	... 2
Italy	... 35	Mexico ...	... 2
Austria-Hungary	... 19	Argentina ...	... 1
Norway and Sweden	... 17	Brazil	... 1
Prussia ...	... 13	Cape Colony ...	... 1
Switzerland ...	... 13	Luxemburg ...	... 1
Belgium ...	... 11	Portugal ...	... 1
Canada ...	... 7	Roumania ...	... 1
Spain	... 7		

Through pressure of time it was quite impossible for any sufficient inquiry to be made by the Commissioners into any of these institutions.

The German method of teaching has been incidentally referred to in the remarks on the Chief Hungarian Institution, but unfortunately the Commissioners failed to see any of the "Taubstummen Anstalten" in Germany. It may be mentioned, however, that the "Oral Method" is used in all countries that profess to take the matter of the deaf mute education seriously.

Touching the question of modern views on the development of the curriculum for the deaf and dumb, it may be said that it seems to be generally recognised that it is unwise to make the hours of instruction long. There is considerable strain on the children in the mental work, but this may be alleviated by limiting it to the earlier part of the day. In the report for 1901 of the New York Institution it is said:—

"Better work can be done in the class-rooms in the morning than in the afternoon hours. The intellectual work occupies five hours in the forenoon, the little children having but four hours' instruction, the last hour being devoted exclusively to kindergarten games." (p. 23.)

The industrial teaching is very varied, covering for the boys, tailoring, carpentry, cabinetmaking, sloyd, painting and glazing; and for the girls, cooking, dressmaking, plain-sewing, and general housework. (p. 26.)

8. *Conclusion.*—The oral method of instruction developes the children vastly better than the method of speaking only by signs. So excellent is the system now followed that there can be no valid excuse for failing to adopt it. That it is incomparably better to give the unfortunate deaf mutes an opportunity of being able to understand their fellows by watching the vocal organs during speech, and to give them also the power of vocal reply than to leave them without these powers, needs nothing more than statement. This is what has been achieved for humanity by so many of the schools of Europe and America. The only formal conclusions to be drawn are:—

(1) That in the education of the deaf and dumb, the art of reading speech, and of speaking should be taught, as in Europe and America.

(2) That oral method of instruction should then be employed.

(3) That the primary school curriculum should be generally followed, intuitive methods, and manual training being given, however, special prominence.

CHAPTER XLIII.

CHAPTER XLIII.

Compulsory School Attendance—English System and New York School Attendance Law.

[J. W. TURNER.]

Introductory.—Clause 20 of the Public Instruction Act of 1880 reads:—

After the expiration of three months from the passing of this Act, it shall be obligatory upon the parents or guardians of all children between the ages of six and fourteen years (unless just cause of exemption can be shown) to cause such children to attend school for a period of not less than seventy days in each half year. But any of the following reasons shall be held to be a just cause of exemption:—

I. That the child is being regularly and efficiently instructed in some other manner.
II. That the child has been unable to attend school from sickness or infirmity, or from fear of infection, or other unavoidable cause.
III. That there is no School maintained under this Act within two miles by the nearest road of the residence of the child.
IV. That the child has been educated up to the standard of education required.

It has been well said that the opening of a school means the closing of two gaols; but this is only absolutely true when all the conditions are fulfilled, and one of the foremost of these conditions is that every child of school age within the school area should be in *regular* attendance at the school. In New South Wales the compulsory clauses have for a very long period been a dead letter, with the result that, it is not going too far to say, our State, in the matter of school attendance, ranks among the very lowest. The truth is, that for years hundreds of our pupils have been allowed to drift hither and thither without the restraint of school life, and now the difficulty has assumed such serious proportions that legislation, immediate and thorough, is necessary to combat the evil.

Opinions as to New South Wales Act.—Earl Beauchamp, the late Governor of New South Wales, in one of his public addresses shortly before he resigned his duties, called attention to this serious defect in our school system. That gentleman spoke with an experience of school attendances in England, where most laudable and strenuous efforts are being put forth to get all children of school age regularly inside the schoolroom. The Department's reports for years past have persistently called attention to the defects in the compulsory clauses of the Public Instruction Act. During a period of twenty years the weaknesses of the present Act have been made manifest, and that the Department has adequately recognised the position is clear from the following extracts from the annual reports of the Chief Inspector of Schools—F. Bridges, Esq.

Chief Inspector's Reports as to Compulsory Clauses—Report for 1895.—"It has long been realised that from certain defects in the Public Instruction Act the compulsory clauses have been productive of but little good. These defects have been previously specified, but may again be set forth.

The amendments required are:—

1. To place the onus of proof of age and distance from school upon parents.
2. Provision to deal with children found idling about during school hours.
3. Authority to ascertain the names and addresses of all children of school age.
4. Power to compel teachers of all schools to furnish accurate returns of enrolment and attendance.
5. Legal definition of what constitutes a day's attendance at school.
6. Prevention of the employment of children under 14 years of age, unless they hold the certificate of being sufficiently educated.

There is no doubt that police co-operation has proved a valuable aid in the administration of this portion of the Public Instruction Act; but while the onus of proving everything in the shape of default devolves upon the Department instead of the parents, the object of the compulsory clauses cannot be attained. Convictions can be obtained in the cases of children who are enrolled at the State schools but do not complete the required attendance; but there are thousands of children who attend at private or denominational schools, or who do not attend any school, that are completely beyond the reach of the Department.

It is noted that the plea of home instruction, to excuse non-attendance at school, is becoming common. This plea, generally a mere pretext, is too frequently accepted by magistrates, without the slightest inquiry as to the *regularity* or *efficiency* of such instruction. Failure to obtain conviction in cases of this kind has seriously affected the enforcement of the law. The Department makes no distinction in instituting prosecutions, and, in the present state of the Act, has to rely probably more than it should upon the co-operation and discrimination of magistrates.

In dealing with default, the Department is confronted with the necessity for considering domestic hardships as palliatives for the breaking of the law; as a consequence, a reasonably lenient view has always appeared preferable, and prosecutions are instituted only in really culpable cases. It has, moreover, been found that the issue of cautions has been attended by most desirable results, and many thousands of these are issued each half-year.

Report

Report for 1899.—The experience of every succeeding year strengthens the conviction that the compulsory clauses of the Public Instruction Act fail to accomplish much real good. Vicious parents find little difficulty in evading the law, and hence the streets swarm with children begging, pilfering, growing up in ignorance and crime. The compulsory clauses must be made more stringent, the parents made to feel that they *must* send their children to school, and truant schools provided, in which the police can temporarily place the children found about the streets during school hours.

Report for 1900.—Prosecutions in the case of 1,597 children were authorised. The police have been most thorough and energetic in their co-operation. With regard to the defects in the Act, which have been clearly set forth in many previous reports, the matter has received consideration this year with a view to a short amending Act being prepared. That Act is now ready for submission, and inasmuch as the whole of the defects which have been realised have been remedied in its provisions, there is no doubt that a more satisfactory administration of this part of the Department's work, particularly in regard to truancy, will be secured."

Early Administration in regard to Obligatory Attendance.—For some few years after the introduction of the Act of 1880 a scheme of compulsory attendance was in operation; and although it lacked an important essential, viz., the use of moral suasion on the part of attendance officers when dealing with parents, some good in the way of greater regularity resulted. Retrenchment in the Civil Service, after a few years of this régime, brought about considerable changes in the Department of Public Instruction, and almost the whole machinery for working the compulsory clauses of the Act of 1880 was swept away. From that time on, little systematic attention has been given to *those wandering the streets and parks, not only growing up in ignorance, but learning the worst of habits and even vices.* It is no exaggeration to say that the city of Sydney, judging by the number of juveniles in the streets and other public places, has more children, not in regular attendance at school, than will be found in any other city of similar size in the English-speaking world. The remedy for this condition of things lies in the amendment of the Act. In the first place, no period of attendance should be specified. It is well known to teachers that in a large number of instances pupils just put in the seventy days prescribed by law and spend the balance of the half-year, possibly thirty-five or forty days, in idleness.

English System.—In the English Board Schools the maximum attendance is expected, and *great encouragement is given to pupils to gain the full ten half-day attendances per week.* The following clauses are from the most recently published By-laws of the London School Board, made under section 74 of the Elementary Act, 1870, as amended by the Elementary Education Acts, 1876, 1880, 1893, 1899, and 1900.

The parent of every child of not less than five nor more than *fourteen* years of age, shall cause such child to attend school, unless there be a reasonable excuse for non-attendance.

Any of the following reasons shall be a reasonable excuse, viz. :—

(*a*) That the child is under efficient instruction in some other manner.
(*b*) That the child has been prevented from attending school by sickness or any unavoidable cause.
(*c*) That there is no Public Elementary School open which the child can attend, within two miles, measured according to the nearest road, from the residence of such child.

The time during which every child shall attend school shall be the whole time for which the school selected shall be open for the instruction of children of similar age, including the day fixed by His Majesty's Inspector for his annual visit.

The working of the London School Board is cited, not because it has the only good ideas of school attendance, but because its system was the most carefully observed. The entire staff of each school is interested in maintaining regularity of attendance, class vies with class, school with school, to get the honoured distinction of being the best in the matter of attendance. Largely by such encouraging means the regularity of the pupils attending is astonishingly high. It is not at all uncommon to maintain in the London Board Schools an average daily attendance ranging from 90 per cent. to 95 per cent. for months at a time, and in the very best schools, for shorter periods, as high as 98 per cent. The following statistics from the Report of the School Attendance Committee of the School Board for London for the year ended Lady Day, 1902, will prove interesting :—

"The percentage of average attendance has this year reached 83·7. This is the highest percentage ever attained in the history of the Board, and is an increase of 1·2 per cent. on last year, in which year the percentage reached a higher point than had ever previously been recorded for London. . . . As a matter of interest, the Committee give the percentages for each year since the passing of the Free Education Act :—

1893	79 per cent.	1898	80·7 per cent.
1894	79·5 ,,	1899	81·2 ,,
1895	79·8 ,,	1900	81·2 ,,
1896	80·4 ,,	1901	82·5 ,,
1897	80·2 ,,	1902	83·7 ,,

Details of Attendance in London Schools.—The Committee wish to draw special attention to the following observations of His Majesty's Senior Chief Inspector of Schools in his general report for the year 1901 : "On the whole, it appears that the task of bringing all the children of London to school has been accomplished as rapidly and completely as possible. The next point to consider is the regularity of the attendance at school. The Board express moderate satisfaction that the 'percentage of attendance,' *i.e.*, the percentage of children enrolled that attend daily, has increased from 81·2 in 1900 to 82·5 in 1901. It may be noticed that the percentage for Board Schools is 83·4 and for non-Board Schools 80·2. An examination of the figures on which this calculation is based shows that the actual attendance of children above the age of infancy (under five years), is much more regular than these results indicate. The following table, which refers to Board Schools only (the Board Schools educate five-sevenths of the children of London ; the precise number of scholars enrolled on March 31st, 1901, was : Board Schools, 532,602 ; non-Board Schools, 217,098), shows that the attendance of boys is very good ; that girls, who are necessarily required at home more than boys, attend well ; but that the infants, of whom many cannot be compelled to attend at all, and who are more exposed to sickness and other causes of occasional absence, attend less frequently, and thus bring down the summary percentage. It seems, therefore, that the Board hardly takes credit to itself for the admirable work that has been done. Impartial observers will say, 'Go on and prosper.'"

Comparisons

Comparisons of daily attendance, London and New South Wales.—The average attendance in the State schools of New South Wales, from 1893 to 1902 inclusive, is placed side by side with the London results. The average annual attendance in the London schools is computed on the *average* annual enrolment; in the State schools of New South Wales the average annual attendance is based on the *total* annual enrolment. This method of computing averages gives the London schools an advantage, against which a set-off may be made by their practice of excluding the attendance of all pupils who are absent at the calling of the roll, which takes place during the first quarter of an hour, morning and afternoon.

Year.	London.	State of N.S.W.	Country Districts, State of N.S.W.	Metropolitan Districts, N.S.W.	Year.	London.	State of N.S.W.	Country Districts, State of N.S.W.	Metropolitan Districts, N.S.W.
	per cent.	per cent.	per cent.	per cent.		per cent.	per cent.	per cent.	per cent.
1893	79·0	61·0	59·2	65·7	1898	80·7	62·3	61·5	63·9
1894	79·5	63·0	65·4	57·6	1899	81·2	64·0	64·0	64·1
1895	79·8	64·7	66·6	60·0	1900	81·2	64·6	65·1	63·3
1896	80·4	64·2	65·6	60·1	1901	82·5	63·9	63·7	64·3
1897	80·2	65·6	66·8	63·0	1902	83·7	64·0	64·6	62·6

Divisional Control.—For purposes of school government London is divided into eleven sections known as Divisions. Each Division elects by vote of the residents therein its representatives on the London School Board. These representatives form a Divisional Committee and are charged with the duty of carrying out the by-laws, and the sections of the Elementary Education Acts which deal with the attendance of children at school and the employment of children. Sub-Committees, consisting of Local Managers of Board Schools, or other suitable persons, assist the Divisional members. Each Division has a staff of officials constituted as follows:—One Divisional Superintendent, one assistant superintendent (if the division be very large an additional superintendent may be appointed), clerks (usually four or five in the large Divisions), office youths (generally two in each Division). Visitors with districts number *three hundred and seventy* altogether; *street visitors*, fifteen altogether; and visitors for Industrial Schools work, twelve. A centre where visitors meet in daily conference exists in each Division, and is much used.

Mention has already been made of the efforts put forth by head teachers and their assistants to ensure regularity of attendance on the part of their pupils, and according to the Code of Regulations and Instructions head teachers are at liberty to adopt any means which are not expressly forbidden by any rule of the Board for communicating with parents which they may think fit and desirable. The first written communication forwarded by teachers to parents is as follows:—

I beg leave to inform you that your child was absent from school on . Will you kindly inform me whether there is any reasonable cause for such absence, or whether the child has been absent without your knowledge and consent?

Please send a reply on the back of this form.

(Signed) A.B., Teacher.

In addition to any action which the teachers may take under the above paragraph, the following letter—a lithographed form supplied to all teachers—is forwarded by the chairman of the managers of the school to parents whose children have made seven, eight, or nine attendances.

[Stamp here name of school.]

Dear Sir (or Madam),

I beg most earnestly to appeal to you with regard to the education of your child , who is irregular in his (her) attendance at school.

I would remind you that by keeping him (her) at home, or by allowing him (her) to stay away from school, you are doing him (her) a serious injury, and one which will have an exceedingly bad effect upon his (her) future prospects.

Whenever your child is absent from school he (she) loses the whole of the lessons which are given to the rest of the class during that time, and it is consequently impossible for him (her) to make the same progress as other children who attend regularly.

I hope, therefore, that for this reason, in your own interest, and above all in the interest of the child himself (herself), you will make every effort to secure his (her) regular attendance at school.

I am, yours very truly,
Manager of the School.

The following instructions are especially emphasised:—

The attention of head-teachers is called to the great importance of making *the father as well as the mother of a child cognisant of its absence.*

Under no circumstances are head-teachers to send children out of school-hours to inquire after absentees, and they are never to send children to homes where there is reason to suspect that there may be a case of infectious disease.

Instructions to teachers with regard to children who are absent from school in consequence of illness, or infectious illness, in house, will be found at the head of the Duplicate Register Form.

Teachers must, in the first instance, use all persuasion in their power for securing an improvement in the attendance of the child.

A weekly return of the attendance of each child on the rolls must be furnished to the visitor of the district every Friday afternoon on the form of the Duplicate Register provided for the purpose.

The teachers are instructed, in those cases where the assistance of the visitors is required, to encircle the week's record of attendance on the Duplicate Registers in red ink.

In the case of a department of a school where the attendance is below the general average, or where any of the children are continuously absent without excuse, the teacher is instructed to take from the registers on Monday a list of not more than six children, who, having been irregular during the previous week, are still absent; and to post such lists to the respective visitors on Monday, to be visited next day, with their Duplicate Register lists of the previous week.

Mode

Mode of Procedure in dealing with Irregular Attendance.—In all cases where a child who is under the legal obligation to attend school is not on the roll of any efficient elementary school, or where a child is irregular in its attendance at school, the mode of procedure, after teachers', managers' and visitors' efforts have failed, is the issue of Notice A (1), or Notice A (2), which directs attention to the infringement of the Education Act. If Notice A (1), or Notice A (2), is unheeded by the parents, Notice B (1), which calls upon the parent to attend before the Divisional Committee and show cause why he should not be summoned before a magistrate is served. Should the parent still prove obdurate, a final appeal, Notice B (2), which points out the consequences of any further neglect, is made. In the majority of cases these notices have the desired effect. Only as a last resort is a summons (Notice C) taken out, and then only by the direction of two members of the Board.

The Notices above Referred to.

A (1).

(School Attendance.)

WARNING TO PARENTS.

To Mr. Division,

190 .

Take notice that you have been guilty of a breach of the law, in that you have habitually, and without reasonable excuse, neglected to provide efficient elementary education for your child, , and to send h regularly and punctually to an efficient school,[1] and that you have thus rendered yourself liable to be summoned before a magistrate.

The School Board hope that it will not be necessary for them to take any further steps to enforce the law, but that your child will regularly attend school. The School Board, however, warn you that by Act of Parliament magistrates have now the power for each breach of the law to inflict a fine amounting, with costs, to twenty shillings.

Divisional Superintendent.

[Seal of the Board.] Address,

NOTE.—Every child, unless prevented by sickness or other reasonable excuse, must attend some efficient school[1] during the whole time for which such school is open, except on Sundays, and after six o'clock in the evening.

[1] The school may be selected by yourself, but it must be either a public elementary school, or a school at which efficient instruction is given and must be open not less than twenty-five hours a week.

NOTICE A (2).

WARNING TO PARENTS.

Division,

To Mr. 190 .

Take notice that your child, , has been found,[1] (1) habitually wandering, (2) not under proper control, (3) in the company of rogues, vagabonds, disorderly persons, or reputed criminals, and that you have been guilty of a breach of the law in not sending h regularly and punctually to an efficient school[2], and have thus rendered yourself liable to be summoned before a magistrate.

The School Board hope that it will not be necessary for them to take any further steps to enforce the law, but that your child will regularly attend school. The School Board, however, warn you that by Act of Parliament magistrates have now the power for each breach of the law to inflict a fine amounting, with costs, to twenty shillings.

[Seal of the Board.] Divisional Superintendent.

Address,

NOTE.—Every child, unless prevented by sickness or other reasonable excuse, must attend some efficient school[2] during the whole time for which such school is open, except on Sundays, and after 6 o'clock in the evening.

[1] Strike out the Clauses which are inappropriate.

[2] The school may be selected by yourself, but it must be either a public elementary school or a school at which efficient instruction is given, and must be open not less than 25 hours a week.

NOTICE B (1).

NOTICE TO ATTEND BEFORE DIVISIONAL SUB-COMMITTEE.

Division,

To Mr. 190 .

Take notice that you have been guilty of a breach of the law, in that your child, , has not duly attended school, and you are hereby invited to attend at on the day of , at o'clock in the noon precisely, to state any excuse you may have, and to show cause why you should not be summoned before a Magistrate and fined.

You are warned that by Act of Parliament magistrates have now the power for each breach of the law to inflict a fine amounting, with costs, to twenty shillings.

(Signed)

[Seal of the Board.] Officer of the School Board for London.

Divisional Superintendent.

Address,

NOTICE B (2).

ORDER OF DIVISIONAL SUB-COMMITTEE.

Division.

To Mr. 190 .

Take notice that you have been guilty of a breach of the law in that you have neglected to provide efficient elementary education for your child , and to send h regularly and punctually to an efficient school.[1]

The Sub-Committee accordingly issue this Final Order that unless you cause your child to attend an efficient school regularly and punctually, further proceedings will be taken to enforce the law by summoning you before a magistrate, but the Sub-Committee hope that there may be no necessity to take this action.

You are warned that by Act of Parliament magistrates have now the power for each breach of the law to inflict a fine amounting, with costs, to twenty shillings.

[Seal of the Board.] Divisional Superintendent.

Address—

[1] Every child, unless receiving efficient instruction at home, or unless prevented by sickness or other reasonable excuse, must attend some efficient school during the whole time for which such school is open, except on Sundays, and after six o'clock in the evening. The school may be selected by yourself, but it must be either a public elementary school, or a school at which efficient instruction is given, and must be open not less than twenty-five hours a week.

NOTICE C.

DIRECTION TO PROSECUTE.

Division, 19

NOTE.—Section 38 of the Elementary Education Act, 1876, is as follows:—"No legal proceedings for non-attendance or irregular attendance at school shall be commenced in a Court of Summary Jurisdiction by any person appointed to carry out the compulsory By-Laws of a School Board or Local Authority, except by the direction of not less than two members of a School Board or a School Attendance Committee."

We, the undersigned, being two members of the School Board for London, under the provisions of Section 38 of the Elementary Education Act of 1876, quoted above, hereby direct Mr. , the Divisional Superintendent for the Division, to take the legal proceedings herein set forth against the parents of the following children, viz.:—

Name of Parent.	Name of Child.	Summons for breach of By-laws.	Summons under Elementary Education Act, 1876.	Summons under Elementary Education Act, 1876.	Employers' Summons under Elementary Education Acts, 1876 and 1880.	Summons under the Elementary Education (Blind and Deaf Children) Act, 1893.	Summons under the Elementary Education (Defective and Epileptic Children) Act, 1899.
.....	A.B.	.....	.....	.....	.....	.....	.....
.....	C.D.	.....	.....	.....	.....	.....	.....

} Members of the School Board for London.

Special Return.—From a special return which the Board had prepared in December, 1898, it was shown that one-fifth of the pupils in Elementary Schools made only 80 per cent. of attendance. This leakage of 20 per cent. the School Attendance Committee made a special effort to stop, and the remedy applied was reducing the number of pupils for whom any one of the visitors was responsible, from 3,000 to 2,800. This arrangement gave the visitors opportunities for a closer investigation of the cases making about 80 per cent. of attendance. The re-arranged plan necessitated the appointment of additional visitors, and *the Board issued a special instruction that its officers should systematically visit all children who lost two attendances per week*, that is, two half days. Dealing with those whose attendance fell below 80 per cent., the Board on the 7th November, 1901, decided to appoint visitors, one for each Division, for special duties in the districts presenting peculiar difficulties. The School Attendance Committee, in its latest report, refers to the excellent results brought about by those special officers.

"Slip" System.—The Board, always alive to the necessity for raising the average attendance at its schools, commissioned its principal attendance clerk and the head assistant clerk, together with two Divisional superintendents, to make investigations in several of the largest provincial towns where the "Slip" System is in operation. This system, which works well in Birmingham, is now on its trial in the Divisions presided over by the two superintendents who accompanied the Commission. The main features of the "Slip" System are given in the Board's report for 1902, and are as follow:—

The name of every child upon the roll of a school is entered upon a printed slip, and each week the attendances of the child are entered upon the slip by the teacher, who then forwards the slip to the visitor. The visitors then take out the slips for the children who have made irregular attendances, and, without any additional clerical work, are enabled to visit the homes of the absentees, and enter upon the slips at once the reasons given by the parents for the absences of the child.

Street Visitors.—One of the most valuable branches of the Board's duties is that allotted to the Street Visitors. There are fifteen of these officers in London, and their particular mission is to deal with all children of school age found frequenting the streets or open spaces, quays, markets, parks, railway stations, etc.

REPORT ON THE WORK OF THE STREET VISITORS, 1902.

NO. OF CHILDREN FOUND IN THE STREETS, AND HOW OCCUPIED.

(*a*) Playing or loitering in streets or open places	13,960
(*b*) Selling matches	336
(*c*) Sweeping crossings, collecting rags, etc.	514
(*d*) Going errands	8,284
(*e*) Begging or wandering, and having no home	267
(*f*) Miscellaneous	378
	23,739
Disposal—4,077 to other Divisions. Leaving to be accounted for	19,662
Total cases under inquiry, including undisposed cases, those from other Divisions and above stated number	21,556

Result of Inquiry.

(*a*) On rolls of efficient schools	17,580
(*b*) Receiving instruction at home	13
(*c*) Under compulsory age	43
(*d*) Totally exempt	122
(*e*) On the rolls of non-efficient schools	6
(*f*) Wrong address given and cannot be traced	944
(*g*) Given into custody by street visitor for begging, etc.	207
(*h*) Not on roll of any efficient school	2,635
(*i*) Undisposed of	6
	21,556

Detailed Report with reference to (h) Result of Inquiry.

(*a*) Child now attending school	1,471
(*b*) Sent to an institution	35
(*c*) Family removed	275
(*d*) Ill or illness in home	579
(*e*) In the country	7
(*f*) Under surveillance	218
(*g*) Miscellaneous	50
	2,635

Legal

Legal enactments for enforcing compulsory attendance.—The By-Laws of December, 1900, the most recent issued by the London School Board, contain provisions for compulsory attendance to 14 years and increasing the maximum penalty to twenty shillings. "The effect of the new By-Laws has been to prohibit the exemption of children under 14 years of age, except by passing Standard VII, and consequently to prolong the school life of those children who are unable to obtain early exemption under the proficiency qualification. Although many difficult cases have arisen, the law has been enforced with such tact, firmness, and good judgment by the divisional sub-committees, divisional superintendents, and visitors, that there has been an entire absence of serious friction." (Board's Report for 1902.) As an evidence of the good judgment shown by those administering the compulsory clauses in London a study of Appendix VII, page 181—Board's Report for 1902—is recommended. (This document is too lengthy for inclusion. It shows, however, how, by the discriminating instead of inflexible application of law, it will reach the end in view, in the most humane manner possible.)

From what has been written of the successful administration of the compulsory system in England, it will be quite evident that the fixing of any minimum attendance is dangerous, and in any amendment of the present New South Wales Act any such provision should be carefully avoided.

Another positive danger in the present New South Wales Act is to be found in reason four, which is assigned as a just cause of exemption, viz., that the child has been educated up to the standard of education required. In England, it has been before stated, the age limit for compulsory attendance has been raised to 14 years. In Edinburgh the labour certificate has been abolished, and while a pupil in the primary schools of that city may obtain a merit certificate, it may be as early as 12 or 13 years of age, he is still compelled to attend school until he is 14.

New York School Attendance Law.—The Department of Education for the City of New York has made the following regulations regarding compulsory attendance.

(A.)

3. Required attendance upon Instruction.—Every child between 8 and 16 years of age, in proper physical and mental condition to attend school, shall regularly attend upon instruction at a school in which at least the common school branches of reading, spelling, writing, arithmetic, English grammar and geography are taught, or upon equivalent instruction by a competent teacher elsewhere than at school, as follows:—Every such child between 14 and 16 years of age, not regularly and lawfully engaged in any useful employment or service, and every such child between 8 and 12 years of age, shall so attend upon instruction as many days annually, during the period between the first days of October and the following June, as the public school of the district or city in which such child resides shall be in session during the same period. *Every child between 12 and 14 years of age, in proper physical and mental condition to attend school, shall attend upon instruction during such period at least eighty secular days of actual attendance, which shall be consecutive except for holidays, vacations, and detentions by sickness, which holidays, vacations, and detentions shall not be counted as a part of such eighty days, and such child shall, in addition to the said eighty days, attend upon instruction when not regularly and lawfully engaged in useful employment or service.* If any such child shall so attend upon instruction elsewhere than at a public school, such instruction shall be at least substantially equivalent to the instruction given to children of like age at the public school of the city or district in which such child resides; and such attendance shall be for at least as many hours of each day thereof as are required of children of like age at public schools; and no greater total amount of holidays and vacations shall be deducted from such attendance during the period such attendance is required than is allowed in such public school to children of like age. Occasional absences from such attendance, not amounting to irregular attendance in the fair meaning of the term, shall be allowed upon such excuses only as would be allowed in like cases by the general rules and practice of such public school.

(B.)

DEPARTMENT OF EDUCATION—THE CITY OF NEW YORK, PARK AVENUE AND 59TH STREET.

WILLIAM H. MAXWELL,

City Superintendent of Schools, , 190 .

To the Proprietor or Proprietors of

Your attention is respectfully called to the following extract from the Act of the Legislature of the State of New York, entitled "An Act to provide for the Compulsory Education of Children," passed 12th May, 1894.

Extract from the Law.

"5. *Person employing children unlawfully to be fined.*—It shall be unlawful for any person, firm, or corporation to employ any child between the ages of 8 and 12 years in any business or service whatever, during any part of the term during which the public schools of the district in which the child resides are in session; or to employ any child between 12 and 14 years of age who does not, at the time of such employment, present a certificate signed by the Superintendent of Schools of the city or district in which the child resides, or, where there is no Superintendent, by such other officer as the school authorities may designate, certifying that such child has complied with the law relating to attendance at school during the school year between September and July, then current; and any person who shall employ any child contrary to the provisions of this section shall, for each offence, forfeit and pay to the treasurer of the city or village or to the supervisor of the town in which such offence shall occur, a penalty of fifty dollars, the same, when paid, to be added to the public school moneys of the city, village, or district in which the offence occurred."

Please record the names of all children between the ages of 8 and 14 years employed in your establishment, on this paper, and deliver the same to the Attendance Officer.

WILLIAM H. MAXWELL,
City Superintendent of Schools.

Name.	Age.	Residence.	Certificate, Yes or No.

Juvenile Courts.—In some of the large cities of America a very wise provision has been made for the trial of juvenile offenders in a court distinct *from the usual Criminal Courts* and presided over by an official possessing tact and sympathy.

Schools in loco parentis.—For those children who will not attend the day elementary schools regularly, the London School Board controls three classes of institutions known as (*a*) Industrial Schools—sometimes Permanent Industrial Schools because the aatendance is for years, (*b*) Truant Schools in which pupils stay for a few months and then may be licensed out to attend a day elementary school, and (*c*) Day Industrial Schools, which the pupils attend during fixed hours daily, Saturdays included, returning to their homes every evening. The Board has two Industrial Schools, two Truant Schools, and three Day Industrial Schools, belonging to them and under their management, and shares the control with the Brighton School Board of a school at Portslade. In addition the Board has agreements with sixty-four

 schools,

schools, in different parts of England, under other management, to which children may be sent. The two Industrial Schools are the "Shaftesbury" Training Ship, an institution conducted on lines very similar to those existing on the "Sobraon", and the "Gordon House" Girl's Home. The two truant schools (boys only) are the Upton House and Highbury, and by arrangement with the Board controlling Lichfield Truant School, when the former schools are full, pupils are sent to the latter institution. The three Day Industrial Schools (boys and girls) are Drury Lane, established in 1895, Brunswick-road, 1901, Ponton-road, Nine Elms, established 1902. The total number of children in these classes of schools on 31st March, 1902, was 4,007, viz., 3,477 in Board's Industrial Schools, 364 in Truant Schools, and 184 in the Day Industrial Schools.

During the year ended Lady Day 1902 the number of children sent to these schools, under authority of the Industrial Schools Act of 1866, the Industrial Schools Amendment Act 1880, Elementary Education Act 1876, and Order in Council, was 1,608, viz., 853 to the Industrial Schools, 580 to Truant Schools, and 175 to the Day Industrial Schools. In the case of the committals to the Industrial Schools the charges were chiefly begging, wandering, frequenting the company of reputed thieves, living in houses of ill-fame, stealing, being beyond parents' control, non-attendance at day school; the charges in the case of those sent to the other institutions were non-attendance at day school, begging, stealing, being beyond control. The three types of schools were thoroughly examined, the inner working of each class closely investigated, and the opinions of the captain-superintendent and the governors carefully noted. Each type has its own distinctive merit, but the Day Industrial School possesses some magnificent means of dealing with wayward youth and leading him along the path of least resistance, towards a higher plane of citizenship.

CHAPTER XLIV.

Day Industrial and Truant Schools London.

[J. W. TURNER.]

The Drury Lane Day Industrial School.—This institution is situated in one of the most densely populated parts of the city of London. The external appearance gives no indication of the existing internal admirable conditions. The school is open from 6 a.m. to 8 p.m., and the children attending are chiefly the sons and daughters of widows and widowers who leave their homes (?) for their daily work at daylight, and do not return till sunset. The Governor and his staff come on duty at 7·45 a.m., but the schoolkeeper (every Board School in England has its schoolkeeper who resides on the premises) is on duty from 6 a.m. Pupils in attendance, not always from the immediate locality, are encouraged to reach the school early, and the first duty on arrival is the morning ablution. The bath-room is large and well equipped. The children have separate sprays under which to wash, and separate towels with which to dry themselves. Every precaution is taken by the management to prevent the spread of disease. Hot and cold water are supplied. Boys and girls have separate times to visit the lavatory. Each child has its own cleansing appliances. Thorough cleanliness is insisted upon, and three times daily the pupils under the supervision of the teaching staff visit the lavatory. Three meals, cooked on the premises, are served daily—morning between 8 and 9, dinner between 12 and 1, tea between 5 and 6. Once a week all children are examined thoroughly, and any cases requiring medical attention are sent to King's College Hospital. On the ground floor of the building, a structure of three stories, there is a swimming-bath 18 feet by 12 feet, well constructed and lined with Dutch tiles, and sufficiently deep to teach the boys how to swim. On every Thursday afternoon the bath is used by the boys in relays. The institution is called an Industrial School, and rightly so, for class studies and industrial exercises are judiciously interwoven. Every teacher of experience knows that some boys, and girls too, chafe at the regular routine of class work, especially the oral teaching, or become mere passive recipients. They seem to be so constituted as to require great physical activity. What to do with this class of pupils is a problem which seriously exercises the mind of the sympathetic teacher who is often at his wits' end to keep these "eccentrics" properly employed.* The curriculum of the class-work in Drury Lane does not range high. Standard VI, London School Board, about equal to an Upper Third or at the most a Lower Fourth in the New South Wales Schools, is the aim, and considering the class of children attending, and the fact that some of them have a distaste for oral lessons, it seems reasonable to spend more time in one or other of the industrial branches of the Institution. During a visit to the school a class was under instruction in one of the ordinary school subjects in charge of an intelligent, sympathetic lady teacher, but the attention and disposition of the pupils so taught were in striking contrast to that noticed later on in the industrial classes. The former were sleepy, heavy, and remarkably quiet, the latter were bright, interested, and chatty. Many of the pupils come from homes in

* There are in every school lads who are physically active, in such a way that they cannot endure the usual restraint They quite differ from the ordinary boy, and need special management or treatment.

in name only, where food is irregular and home comforts and pleasures are unknown. Corporal punishment is very rarely inflicted, some of the children looking as if they were too well acquainted with bad treatment elsewhere. The Governor's experience is that *the frequent use of the cane makes boys morose*, and particularly the class under consideration. Kindness is the rule, and with children, so many of whom are docile and spiritless, it appeals strongly to one as the only right treatment. The boys under instruction in the class already referred to were the quietest ever seen in a school. They sat for the best part of an hour while their mistress and their Governor gave the history and working of the school, and not one of them was guilty of the slightest disorder, and not one spoke. Nor was this state of things attributable to fear on their part. Mr. Humphreys, the Governor, rarely canes, and he certainly has not the look of a tyrant. Kindness, sympathy, concessions for good behaviour, are the means he adopts for securing good conduct and good work from his pupils. He arranges short lessons in the usual school subjects, knowing the dislike and distaste most of his pupils have for this branch of study. They require much stimulating, and this the Governor exercises in every legitimate form. A spirit of emulation is engendered, and by such tactful measures the Governor gets the best results out of his mixed and very often poor material. One of the chief rewards for good conduct is getting away early on ordinary school days—5·30 instead of 6, and on Saturday at 1 o'clock instead of 5. Another reward is that of licensing out the good boys—those who have given promise of reformation as regards attendance—to a Board School nearest the parent's place of residence. There is little difficulty experienced with those licensed out. Their training in the Day Industrial School has all along been on humanitarian lines, and in most cases the bad habit of irregular attendance has been completely removed and a love for school instilled. A final caution in the presence of the parents, in a quiet impressive manner, is administered by the Governor, and the penalties of non-compliance with the Industrial Act are made quite clear. Further, every boy knows that there is an attendance officer attached to the Institution, whose duty it is to see that he attends regularly at the Board School to which he has been licensed. If he fails to make *ten attendances* in every week he has to go back to the Day Industrial School on Saturday for the whole day. Should he prove incorrigible the severer form of discipline—the Truant School—is before him.

Benefits of Drury Lane Industrial System.—The good done by this institution is felt outside its own walls, and instances have been known where the home itself has been improved through the boy or girl carrying away from the school some of its method and order. Mr. Humphreys, the Governor, does a large amount of personal visiting in the homes, particularly in the case of all *new* boys and girls. His fatherly, tactful, sympathetic ways fit him admirably for the position. He argues that there is no *vice* in these children—they may be wayward, they may dislike lessons where a passive obedience is required, they may see no value in dry class-work. They are a peculiar race, and it is his mission to understand, as far as he can, their peculiarities. This is his motto, and his method works out well, Mr. Humphreys, when asked his opinion as to the wisdom of boys and girls being taught together, stated that the presence of the girls had a softening influence upon the boys, and altogether the mixed system tended for good.

Various classes, Drury Lane.—The various industrial classes were seen at work.

Laundry.—This class is in charge of a lady teacher. The boys do the rough heavy work, such as turning the mangle. The girls do the washing for the London School Board offices. The boys take to the work as if they liked it, and the several duties are performed in a spirit of cheerfulness and willing obedience.

Cookery.—This class is in charge of a lady teacher. The kitchen is provided with a large range and steam cookers. The girls prepare the meals for the day under the direction of a cook, who in this case is the wife of the schoolkeeper. The smaller boys are engaged in scrubbing the floors, staircases, &c. Widows pay 6d. per week towards the support of their children, and parents earning regular wages are expected to pay 2s. a week for each child in attendance. The dining-room, which is a bright, cheerful room, in strong contrast to the immediate surroundings, is under the charge of a boy and girl, selected each week, who make all preparations in laying tables, &c., for the regular meals.

Manual Training.—The same course of work as seen in the London Board Schools is carried out here. On the completion of this course the boys can command positions in workshops of the city, with wages starting at 9s. a week.

Shoemaking.—There were twelve boys in this class when the school was visited. Eight of these were permanent hands and four were probationers. The aim of the management is not to make tradesmen of these lads, but to find suitable satisfactory occupation for them while in the Industrial School. As a matter of fact, many boys from the school find ready employment at 10s. a week with the Horse Tramway Co., in repairing harness. Their training in the shoemaking shop qualifies them for this work.

Printing.—This is taught by an expert. There were fourteen in this class on the day of the visit. They were engaged setting up type and working a Cropper machine. Some of the smaller printing for the London School Board, such as notices, &c., is done here. The lads turn out good, clean work, and when they reach the leaving age get ready employment in printing-offices at 15s. a week.

The school contains a large roomy hall, where the children are put through their physical exercisse and a little practice is given the boys in the use of parallel bars, vaulting horse, &c. The ex-pupils of the school have formed a senior boys' brigade, but no great amount of work is done in military drill. The following statistics about the school will prove interesting :—

Average number during year, 123.
Annual cost per head, including salaries.....£21 15s. 5d. gross.
£16 5s. 6¼d. net.
Average weekly cost for provisions—
Officers (resident) 8s. 9d
Non-resident ... ... 7s. 6d.
Children 1s 8¼d

COPY OF BALANCE-SHEET FOR YEAR ENDED 25TH MARCH, 1902.

Receipts.	£ s. d.	£. s. d.
Treasury grant	330 0 4	
Drawing grant	12 10 3	
Manual training grant ...	18 0	
Payments from parents ...	174 9 3	
Rent and cleaning ...	6 0 0	
Costs recovered	16 6 0	
		540 3 10
Payments from London School Board ...		1,650 3 5
Industrial Departments.		
Shoemakers' shop ...	68 6 9	
Laundry	207 4 9	
Printing	111 18 4	
		477 9 10
Total receipts		£2,677 17 1

Payments.	£ s. d.	£ s. d
Salaries and house wages ..	703 18 9	
Provisions (officers) ...	192 2 8	
Provisions (children) ...	482 18 8	
Fuel, washing, light, water, furniture, and house sundries	343 15 7	
Rates, taxes, and repairs ...	397 2 6	
Printing and office expenses...	142 18 6	
Medical expenses. Travelling	31 8 6	
Legal expenses	20 5 0	
Petty disbursements ...	16 11 1	
		2,336 1 3
Industrial Departments.—Cash Payments.		
Shoemakers' shop ...	110 0 4	
Laundry	114 5 9	
Printing	117 9 9	
		341 15 10
Total payments... ...		£2,677 17 1

Official Estimate of Value of Work.—In concluding this report on the Drury Lane Industrial School the following official remarks seem particularly appropriate:—

"This school is a model one of its class and well deserves the attention of those specially interested in the education of the poorest class of children. The work in the schoolroom is first-rate, and the industrial training developed almost to the pitch to be found in a good residential school, proving that even in day-school one does not interfere with, but helps the other. The civil manners of the children cannot fail to be a valuable asset to them in life." From Annual Report for 1902, James G. Legge, Esq., H.M. Inspector. "The children often come to school suffering from all sorts of minor maladies and injuries . . . They are often verminous. Every day some clothing has to undergo the ordeal of a crematory. Subnormal vision prevails, and with several of them the sense of hearing is defective. The difficulty of transforming the slatternly girl of the slum into the neat and tidy and capable domestic servant is far greater than turning a wayward lad into a steady workman. How to make a bed, how to lay a fire, how to clean a lamp, how to dust, how to keep a room airy, how to wash linen, how to buy food and how to cook it, how to treat a baby and how to feed it and keep it clean; these are some of the 'hows' we try to teach all our girls, and, on more than one occasion, I have myself been delighted to observe the 'motherliness' of some of the elder girls, and the ability with which they have been able to prepare and serve up the dishes cooked in their own homes for their parents, brothers, and sisters. With the majority of our boys, the prime necessity of life is to learn to work with their hands, and so to live. The half-time system, therefore, prevails here, industrial training being given to all the scholars as a necessary part of their school training. Of the 133 children finally discharged during the year, good and prospective employment was found for 102, but the remaining thirty-one are not satisfactory, for the work of errand boys, van boys, and cock-horse boys is not progressive, neither is it good training for growing boys. . . . It is impossible to put down in black and white the histories of all the children we have had, or to tell of the homes we have seen. Of the 128 children at present in the school, fourteen have three or more rooms, thirty-nine have two small rooms, and seventy-five have but one. And such a room!—dining-room and bedroom, kitchen and scullery, coal-house and drawing-room, workshop and wash-house, all in one! What wonder, then, that many spirited young urchins, developed under these conditions, grow up apparently outside the ken of civilisation, ready for any mischief, oblivious to the benefits of education, and with wary eyes on the School Board visitors, from whom they fly instinctively as their natural enemies. To educate and train these little arabs of the alley and gutter is the primary and proper mission of a day industrial school, and by lending them a helping hand, and giving them a helping life, there is abounding testimony that the School Board for London is diminishing the supply of 'hooligans' by increasing the number of really happy, boyish boys, who eventually become honest, self-supporting men."—Report for 1902, Thos. Humphreys, Governor, Drury Lane Day Industrial School.

Upton House Truant School.—Upton House Truant School, Urswick-road, Homerton, N.E., was established in the year 1878, for the reception of sixty boys. In 1885 new and improved buildings were erected to accommodate 140, and more recently still additions and alterations made, provided for 150 boys. During the last year 229 fresh cases were admitted, all of whom were sent at the instance of the London School Board, under the Elementary Education Act, 1876, for non-attendance at school. The religious persuasions to which the children were stated to belong are as follow:—Church of England, 160; Roman Catholic, 65; Jews, 4. In the Highbury Truant School, which receives children belonging to other churches than those named above, the total admission for the year 1902 was 335. This school was certified in the year 1901 for 150 boys. In 1894 accommodation was provided for 200 boys.

Of the 229 admitted to the Upton House School in 1902, 156 were placed out on license, and out of the 156, thirty-five were re-admitted for a further period of detention. These thirty-five had failed to make sufficiently good attendances in the elementary schools to which they had been licensed. The average period of detention, before boys were released on license, was 96 days; the average length of detention after first re-admission was 127 days, and for second re-admission 133 days. 234 boys, having attained the age of 14 years, were finally discharged. In the Highbury Truant School 201 boys were licensed out and never re-admitted, fifty-five licensed and once re-admitted, ten licensed and twice re-admitted. Fifty-seven boys of those admitted during the year were finally discharged, having attained the age of 14 years. The average periods of detention in Highbury Truant School, given in the latest returns, are: First admission, 80 days; first re-admission, 110 days; second re-admission, 165 days. The Governor of Upton House Truant School, in his latest report, states:—

The general health has been excellent, and there has been no death since the establishment of the school in 1878. . . . . A good many boys were admitted in a delicate state, owing to want of proper food and unhealthy surroundings, but they soon improve and grow robust under their new conditions. . . . Every boy is provided with a tooth-brush, and uses it daily. The general behaviour of the boys throughout the year has been excellent. With the exception of a few cases of absconding there has been nothing beyond ordinary school faults to deal with. A good tone prevails, and punishment is very slight, and serious offences very rare. . . . Regular instruction is given in the technical branches of the work by skilled trades masters, and the boys take great interest in this important part of their education. The laundry, kitchen, and housework employ a good many boys out of school hours, *and a class of junior boys darn all the socks.* The bread is all baked on the premises. We have a good gymnasium. Swimming is one of the most important branches of this work, and our capital swimming-bath has been a great boon to the school.

The

The Government Inspector, James G. Legge, Esq., in his last report, says:—

Apparatus for the new gymnasium has very recently arrived. It has, however, been there long enough to show how few are able to jump. . . . Two boys have absconded during the year; one of these ran off three times. One boy attempted to abscond, and two cases of pilfering are also noted. The other offences have been of a minor nature. . . . . This list is not long, and generally shows a tendency to decrease. Boys have, as an incentive to good behaviour, the prospect of being licensed out sooner.

Opinions formed during visit.—A personal inspection of the Upton House Truant School revealed the following interesting features in the organisation and management:—The buildings are well situated, standing back from the street, in a good, roomy play-ground. Too often the school-buildings of London are built up to the street alignment, and have the appearance of barracks. This school-building is enclosed by a neat-railing fence. The whole aspect is cheerful. The inmates are drawn from all parts of London. Special religious instruction is given by the clergymen of each denomination once a week. Boys of the Church of England and Church of Rome attend their respective churches on Sunday, under the supervision of teachers of the corresponding faith. The ordinary class-work seldom ranks higher than Standard VI of the Board Schools. The discipline of the school is mild but firm, and it is very seldom that corporal punishment is resorted to. The school is looked upon by boys outside as severe in its management, not harsh, but not so liberal or lenient as the Day Industrial School. Punishment is inflicted with a cane, and does not exceed *two cuts on each hand.* Solitary confinement and cutting-off food supplies form no part of the scheme of punishment. The maximum punishment set out in Regulation 10 regarding food, confinement, personal correction is *never* inflicted.

The work is fairly continuous, and, while time is given for recreation, the institution is no pleasure-ground. Boys here have to work hard Saturday and Sunday. A uniform is worn. The Upton House boys were brighter, smarter, and more easily interested than those seen under instruction in Standard VI in the Drury-lane Day Industrial School. The physical and industrial sides of the work receive very careful attention. *The gymnasium has a fine equipment in a large room.* The lavatories are well arranged, and supplied with baths for both hot and cold water. A separate spray, towel, and tooth-brush are provided by the School Board for each boy in attendance. The hair of every boy is cut quite short. *No combs or brushes are allowed, as their use, even with the greatest care, conduces to the spread of skin diseases.* The swimming-bath, 30 feet by 18 feet by 5 feet, is of the highest utility. The garden is small, but highly prized. The infirmary is the newest part of the building. It contains special rooms and wards with modern fittings. Provision has been made for isolating infectious cases. A medical man attends daily. The dormitories are situated on the first floor, and are bright, roomy, clean, and well ventilated. Each bed is supplied with a sheet, blanket, rug, and a horsehair pillow. The white night-shirts and the socks worn by the boys are made by the girls of the Board day-schools. The dormitories are well supervised, officers' quarters being so arranged that all the inmates are easily under observation. To minimise the amount of absconding all the windows of the dormitories are barred. In view of the recent sad disaster in a large English public school, "barred windows" in boys' dormitories will, according to a recent cable, be no longer tolerated.

Shoe-making is confined to repairing boots for the establishment. Two classes of ten each receive instruction on alternate half-days. Those having aptitude for the work are employed, but there is no attempt at teaching a trade. Tailoring is carried on under an expert. Two classes of ten each work on the half-day principle and make all the clothing and uniforms for the school. The work seen was uniformly good. Only one sewing-machine was in use. Darning is taught to all the junior boys by the assistant matron. A bakery exists for supplying the inmates with bread. The management finds that this arrangement is cheaper than purchasing from the trade. Boys assist the baker, and may intuitively learn the business. Laundry work—washing, ironing, and mangling—is performed by the boys, for the school and the staff. No objection is made by the lads in the performance of this menial work. Cookery is under the control of a professional cook, who is assisted by a number of boys. The kitchen is well provided with steam coppers, kettles, and gas-stoves. Here again no special effort is made to teach a trade. The whole aim of the industrial training is educative rather than utilitarian. One serious defect exists in this school, which is surprising where there is so much that is admirable—there is no manual training

A caution similar to that impressed on boys licensed out from Day Industrial Schools is given to these lads after their term of probation expires, and the same vigilance is exercised by the visitor in watching their attendance at the day elementary school. As in the case of lads in the Day Industrial Schools, parents of boys in this school are allowed to choose the schools which they wish their sons to attend.

Highbury Truant School.—The Governor of Highbury Truant School, in his latest report, states: "The school continues to do excellent work in training and educating the disobedient and wilful boys of London. It is safe to assert that, but for the work of the Truant School, many boys would grow up in absolute ignorance, as many continue to be admitted who scarcely know their letters and cannot write. It may be open to remark that in some cases the correction of the Truant School fails to produce the desired end of a regular attendance at an ordinary elementary school, and no doubt this is occasionally so, but, even in these cases, we have the satisfaction of knowing that these repeated admissions here empower us to give them what no outside machinery appears able to effect, viz., a good, sound, elementary education." His Majesty's Inspector reports:—

A really admirable display was given of gymnastics, and it was as instructive as ever to compare the physique of the old hands and the newcomers. There would be less talk about the physical degeneracy of a town-bred population if all town boys were put through the mill as they are here. There has been no occasion for serious punishment since last inspection, and the short list is made up almost entirely of such offences as disobedience, neglect of work, and general misconduct in the dormitory and elsewhere. All that has been said in past years in favour of this admirable school has only to be repeated to-day. It will be interesting to see how the school will cope with the higher standard now required for labour certificates. The raising of that standard (VII), however commendable on general grounds, has hit hard some of the big backward truants, who are not vicious in character, and have plenty of ability, though not of a bookish kind.

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The following statistics regarding cost of supporting the Truant Schools are from the latest report of the Industrial Schools Committee, London School Board:—

Annual cost per head.	Gross.	Net.
Upton House	£33 13 7¾	£28 1 3
Highbury	£25 16 10½	£19 19 10¾

Average weekly cost for provisions.	Officers.	Boys.
Upton House	10s. 9¼d.	2s. 0⅜d.
Highbury	10s. 7½d.	2s. 4¼d.

The Government Inspector, reporting on the partially subsidised Truant School, Lichfield, remarks: "A new feature this year is a bugle band. The mark system continues to work well. Two boys absconded, but were soon brought back, and before they left on license both earned the highest G.C. (good conduct) badge. The probability is that no truant passes through a course of training at this school without having his moral character raised and his general attitude towards society softened and improved."

The Board Inspector reports: "The boys have two complete suits, which are all made in school. The drill is excellent. Swimming is systematically taught. *Many friends in the city take a great interest in the school, and invite the boys to tea, sports, &c.*"

Regulations of Upton House and Highbury Truant Schools.—The Board for London Certified Industrial School, Upton House, Urswick-road, Homerton, E.; the Dietary Table for Upton House and Highbury Truant Schools; the time-table for Upton House Truant School; License Notice; Boys' License; Medical Certificate; Rules as to visiting; are as follow:—

RULES AND REGULATIONS FOR THE MANAGEMENT OF THE SCHOOL BOARD FOR LONDON CERTIFIED INDUSTRIAL SCHOOL, UPTON HOUSE, URSWICK ROAD, HOMERTON, E.

1. This School shall be called the "Upton House Industrial School," Upton House, Urswick-road, Homerton, E.

2. The object of the school shall be the reception of boys who are sent by a magistrate, at the instance of the School Board for London, under the provisions of the Industrial Schools Act, 1866, 29, 30 Vict., cap. 118, to be fed, clothed, lodged, educated and trained in some industrial occupation, under the management of the School Board for London through a committee appointed by them.

3. The number of inmates to be provided for at any one time in the premises now used shall not exceed 150, of whom not more than forty may be Roman Catholics.

4. No boy shall be admitted under 6 years of age. A medical certificate shall be furnished in every case that the boy whose admission is applied for is free from infectious disease, and capable of receiving instruction.

5. The boys shall have separate beds, and shall be supplied with a sufficiency of plain, useful clothing.

6. The boys shall be supplied with plain, wholesome food, according to a dietary to be approved by the inspector; no substantial alterations thall be made in the dietary without previous notice to him.

7. The secular instruction shall consist of reading, writing, spelling, cyphering, vocal music, and the elements of English history and geography. Each boy shall receive three hours' schooling daily. The religious instruction shall be given daily, in accordance with the following resolution passed by the Board on the 8th March, 1871:—"That in the schools provided by the Board the Bible shall be read, and there shall be given such explanations and such instruction therefrom in the principles of morality and religion as are suited to the capacities of children: provided always—(1) That in such explanations and instruction the provisions of the (Elementary Education) Act (1870) in Sections VII and XIV be strictly observed both in letter and spirit, and that no attempt be made in any such schools to attach children to any particular denomination. (2) That in regard of any particular school, the Board shall consider and determine upon any application by managers, parents, or ratepayers of the district, who may show special cause for exception of the school from the operation of this resolution, in whole or in part." In case of any child being admitted who is specified in the order of detention as belonging to some particular religious persuasion, a minister of such religious persuasion shall be allowed to visit such child for the purpose of religious instruction, on such days, and at such hours, as shall be fixed by the Secretary of State, in conformity wich the provisions of the Industrial Schools Act, 1866, Section 25. The industrial training shall comprise gardening, and such other handicrafts as can be conveniently practised, and shall occupy five hours daily.

8. Each day shall be begun and ended with simple family worship, consisting of prayer, singing, and the reading of Scripture. On Sunday the boys who are not Roman Catholics shall attend worship at some convenient church or chapel. In the case of Roman Catholic boys, a minister of that religious persuasion shall be allowed to visit the school every morning from 8·40 to 9 (being the same time at which religious instruction is given to the other boys). In the absence of such minister the religious instruction and observances of the Roman Catholic children shall be conducted either by a Roman Catholic teacher or other person of that persuasion, approved by such minister, and duly authorised by the Board, at the times specified in the time-table, and the Sunday service shall be held every Sunday morning at 9·30. The Roman Catholics are to be allowed to attend their own services occasionally, under arrangements with the minister of that persuasion.

9. The Governor shall be authorised to punish any boy detained in the school in case of misconduct; all offences and punishments being entered in a book kept for that purpose, and laid before the Committee at their meetings. No corporal punishment shall be inflicted except by order of the Governor, and in his presence.

10. Ordinary punishments may consist of forfeiture of rewards and privileges, reduction in quantity and quality of food, confinement in a room or cell for not more than three days, and moderate personal correction, not to exceed twelve strokes, with a rod or school cane; but no boy shall be deprived of two meals in succession, and any boy in confinement shall be allowed not less than 1 lb. of bread, and gruel or milk and water daily.

11. The boys shall be allowed two hours daily for recreation and exercise, and shall be occasionally taken out fo exercise beyond the boundaries of the School.

12. The parents and near relations of the boys shall be allowed to visit them once a month for one hour, at a tim to be appointed by the Managers; such privilege to be forfeited by misconduct or interference with the discipline of th School. In the case of serious illness of any boy, or of his intended removal from the School by license, transfer, or legal discharge, notice shall be sent to the parents by the Governor.

13. On the discharge of any boy from the School he shall be returned to his relatives or friends, and the expense of such return shall be defrayed.

14. The School shall be open for inspection by visitors at convenient times, to be regulated by the Committee.

15. The Governor shall keep a journal of all that passes in the School, and shall lay the journal before the Committee at their meetings.

16. A medical officer shall be appointed to visit the School once a week, and oftener when required. He shall enter his visits in a book kept for that purpose, with a note of all serious illness attended by him in the School, and of the treatment prescribed.

17. In case of the sudden or violent death of any inmate of the School, immediate notice shall be given to the coroner of the district in which the School is situated, and the circumstances of the case reported to the inspector.

18. The Governor shall keep a register of admissions and discharges, with particulars of parentage, previous circumstances, &c., of each boy admitted, and the disposal of each one discharged, and shall regularly send to the office of the inspector the returns of admissions and discharge, the quarterly list of boys under detention, and the quarterly accounts for their maintenance.

19. All books and journals of the School shall be open to the inspector for examination. Any schoolmaster engaged in the institution shall be examined by him if he deem it necessary. Notice shall be given to the inspector of the resignation or dismissal of the Governor or of the schoolmaster. A yearly statement of receipts and expenditure of the school, showing all debts and liabilities, and duly vouched by the Committee, shall be sent to the inspector in the month of January of each year.

20. The officers and teachers of the School shall be careful to maintain discipline and good order, and to attend to the instruction and training of the boys, in conformity with the above regulations. Every boy under detention in the School shall be required to obey the officers and teachers of the school, and to comply with the regulations of the Committee, and any wilful neglect, or refusal to obey or comply on the part of any such boy, shall be deemed to be an offence under the Industrial Schools Act, 29 and 30 Vic., cap. 118, section 32.

(Signed) W. INGLIS,
Her Majesty's Inspector of Reformatory and Industrial Schools.
November 28th, 1888.

Amended Rules approved,

(Signed) HENRY MATTHEWS,
One of Her Majesty's Principal Secretaries of State.
Whitehall, 8th December, 1888.

SCHOOL BOARD FOR LONDON.—UPTON HOUSE AND HIGHBURY TRUANT SCHOOLS.

DIETARY TABLE.

	Breakfast.			Dinner.					Supper.		
	Porridge.	Bread.	Beef, Mutton or Bacon.†	Soup.	Suet Pudding (boiled).	Fish.	Potatoes.	Bread.	Cocoa.	Bread.	Dripping.
1	2	3	4	5	6	7	8	9	10	11	12
	pt.	oz.	oz.	pt.	oz.	oz.	oz.	oz.	pt.	oz.	oz
Sunday	¾	6	6*	...	...	...	8	4	¾	6‡	½
Monday	¾	6	...	1	...	...	...	4	¾	6‡	½
Tuesday	¾	6	6*	...	...	...	8	4	¾	6‡	½
Wednesday	¾	6	...	1	...	...	...	4	¾	6‡	½
Thursday	¾	6	6*	...	...	...	8	4	¾	6‡	½
Friday	¾	6	...	...	...	12*	8	4	¾	6‡	½
Saturday	¾	6	...	...	12	...	...	4	¾	6‡	½

Ingredients

Porridge—2 oz. oatmeal, ¼ pint of milk, and ½ oz. sugar per child.
Soup—1 oz. peas or lentils, 1 oz. of rice or barley, 3 oz. of various vegetables, and 2½ oz.* of gravy beef per child.
Suet pudding—6 oz. flour, 2 oz. of suet, and 1 oz. treacle per child. Plum pudding to be substituted on alternate Saturdays, made of 4 oz. flour, 2 oz. plums, 2 oz. suet, and 1 oz. sugar.
Cocoa—½ oz of cocoa, ¼ pint of milk, and ½ oz. sugar per child.
Fish—Soup may be substituted when fish is dear or unobtainable.
Rhubarb—Rhubarb with sugar may be substituted for vegetables provided no extra cost is incurred.
Bread—112 oz. per week.
Green vegetables—When green vegetables can be obtained they are to be substituted for 4 oz. potatoes, provided no extra weekly cost is incurred.

* These weights are uncooked.
† Bacon may be substituted for beef or mutton on one of the meat dinner days in the week.
‡ The allowance of bread for supper for boys over 12 years of age is to be increased to 8 oz

Approved by the Managers, 27th July, 1898, and 17th May, 1899.

(Signed) A. E. GARLAND,
Clerk of the Managers.

Approved, 5th July, 1899.

(Signed) JAMES G. LEGGE,
H. M. Chief Inspector of Reformatory and Industrial Schools.

SCHOOL BOARD FOR LONDON.—CERTIFIED TRUANT INDUSTRIAL SCHOOL, UPTON HOUSE, URSWICK ROAD, HOMERTON.

TIME TABLE.

a.m.	
6·0—Boys rise, fold bedding and wash.	Talking not allowed.
7·0—Clean house and school.	Quiet conversation allowed.
8·0—Boys breakfast.	Talking not allowed.
8·40—Prayers.	
9·0—Distribution for School and work; division in School, remainder industrial work.	Necessary conversation.
12·0—Drill.	Talking not allowed.
p.m.	
12·50—Prepare for dinner.	Quiet conversation allowed.
1·0—Boys' dinner.	Talking not allowed.
1·30—Recreation.	
2·0—Distribution for School and work.	Necessary conversation.
5·0—Drill.	Talking not allowed.
5·30—Prepare for supper.	Quiet conversation allowed.
6·0—Boys' supper.	Talking not allowed.
*6·30—Industrial work.	Necessary conversation.
7·30—Prayers.	
8·0—Boys to bed.	Talking not allowed

* Singing lesson, Tuesday and Friday

Approved, 18th December, 1881.

(Signed) W. INGLIS,
H. M. Inspector of Reformatory and Industrial Schools
A. J. WALKER, Governor

SCHOOL

SCHOOL BOARD FOR LONDON—UPTON HOUSE CERTIFIED TRUANT SCHOOL, URSWICK-ROAD, HOMERTON, N.E.

The Managers, acting under the powers conferred upon them by Section 14 of the Elementary Education Act, 1876, and Section 27 of the Industrial Schools Act, 1866, have *Resolved* to grant a License to to live out of the School.

The License is as follows :—

BOY'S LICENSE.

No. day of 189

Name is licensed to live out of the School under the charge of his Parent or Guardian, of but this License is conditional upon the boy attending regularly as a Day Scholar, both morning and afternoon, at the School.*

* This School must be a Certified Efficient School, and willing to receive him.

Signed, on behalf of the Managers,

Notice.

This license is granted for three months, and will be revoked unless the boy regularly attends School, morning and afternoon.

The person in charge of this boy is to report whether the boy is regularly attending School. *Immediate Notice* is to be sent to the Governor of the School should the boy play truant or otherwise misconduct himself.

SCHOOL BOARD FOR LONDON—UPTON HOUSE TRUANT SCHOOL, URSWICK-ROAD, HOMERTON, N.E.

190

Sir (or Madam),

The Managers of the School propose to allow your son, to return o his home on Saturday next.

Will you please come, or send for him as soon as possible after 9 o'clock in the morning.

Please bring the following articles of clothing :—

The license is granted on the condition that the boy attends School regularly each week ; and, unless he does so, the license will be cancelled, and the boy brought back to the School for a much longer period.

I am, your obedient Servant,
ALFRED J. WALKER,
Governor.

Mr. (or Mrs.)

N.B.—Nearest Station, Hackney, L.N.R.

SCHOOL BOARD FOR LONDON—INDUSTRIAL SCHOOLS DEPARTMENT—CASES OF BOYS FOR TRUANT SCHOOLS.

MEDICAL CERTIFICATE.

Name of boy.
Is the boy generally sound and healthy?
Has he the use of his limbs, eyes, and ears?
Has the boy any defect of vision?
Are the eyelids healthy and free from granulations?
Is the boy subject to fits?
Is the boy suffering from rupture?
Has the boy had small-pox or been vaccinated?
Is the boy suffering from any cutaneous disease such as *ringworm or itch*?*
Is the boy's mental state such as to render him capable of receiving industrial training?

* NOTE.—It is particularly requested that a very careful examination be made before this question is answered.

(Signed) Medical Officer.

Date 190

SCHOOL BOARD FOR LONDON—UPTON HOUSE TRUANT SCHOOL, URSWICK-ROAD, HOMERTON, N.E.

RULES AS TO VISITING.

1. Boys may be visited once a month by their relatives *after they have been in the School one month*, provided their conduct has been satisfactory.
2. Visiting day is on Tuesday, between the hours of 3 *and* 4 *o'clock* in the afternoon.
3. Not more than *two persons* are allowed to visit each boy at one time.
4. No cakes, sweets, stamps, &c., are to be brought to or sent to the School, and no money may be given to the boys.
5. Boys who return to the School are not allowed to be visited, except in cases of serious illness, unless by special permission.
6. On no account are parents allowed to visit their children at the School if there is infectious illness at home.

A. J. WALKER,
Governor.

Approved by Managers, July, 1893.

CHAPTER XLV.

Permanent Industrial Schools of London.

[J. W. TURNER.]

The "Shaftesbury" Training Ship.—This Industrial School lies in the Thames, off Grays, Essex. It was certified in the year 1878 for 350 boys, and in June, 1899, it was decided that the numbers should not exceed 400. The Captain-Superintendent in his 1902 report says:—

"During this period 157 boys have entered and re-entered the Ship. The following are the offences for which the new boys were sent to the Ship:—Begging, wandering, associating with thieves, parents unable to control, non-attendance at school, stealing, residing in a brothel. 140 boys have been discharged or licensed out, leaving 372 boys on the books on the 26th March, 1902. The discharges and licenses have been as follows: To the Royal Navy, 10; merchant service, 65; army bands, 29; homes for working boys, 9; to friends, 23; transferred to other institutions, 2; died, 2; total, 138. Old boys reshipped, 31. The conduct, when we consider the offences for which the boys are sent to the Ship, continues very good. There are forty-five petty officers who receive money rewards of 1s. 8d. respectively, according to rating, every month; and, in addition to these petty officers, there are 236 boys wearing good conduct badges. *In August*, 1901, *leave of absence for five days was given to* 118 *of the most deserving boys, and all returned to the Ship punctually at the expiration of the holiday.* The great feature in the Ship's routine was the camping out in our play-field of the whole of the officers and boys from the 7th June to 31st July, during which time, being favoured with fine weather, the health of the boys improved greatly. Whilst the Ship's company were living under canvas the Ship was dry-docked at Tilbury for necessary repairs, and the hull below the water-line examined, cleaned, and painted after twenty-years' service in the river Thames. The bottom was found to be in a very good state of preservation, and the Ship is now fit for many more years of work. During the time the Ship was in dry dock the opportunity was taken of examining and repairing, where necessary, the moorings." The Government Inspector reports:—"The instruction in seamanship is good and is supplemented by practical experience in the tender, the "Themis." A half-decked sailing boat has been acquired for use in the river. A capital steering model has just been supplied which, with a compass, will be very useful in accustoming boys to the management of the helm. The palm and needle class does good work, and in the tailors' and shoemakers' shops there has been some effort to start theoretical instruction. A new boathouse has been built near the landing jetty, and the six boys of the carpenter's shop work there at boat-repairing, &c. . . . . The general physical drill is good, and the exercises are practised with energy and precision. A grand feature of the Ship is that there is always at work a squad of new or weakly boys requiring special attention. These go through a two-monthly course of exercises on Sandow's principles. *The results achieved in many cases are remarkable.* After boys have passed through this special class they join in the general physical drill, and take their places in the squads for drills with the cutlass, the musket, and the field-piece ashore . . . On two occasions boys have been recalled from their license and punished for serious faults. Damage to property, impudence, filthy language, bullying, and some minor faults account for the majority of the entries in the punishment book. The mark system is still in full force. . . . . The main object of the Ship is *to get boys to sea* and into army bands. Of late years an increasing measure of success has rewarded the exertions of the managers, and the record for last year is highly creditable."

The Board Inspector of Industrial Schools states:—"The general tone in school-room work is excellent. The health is satisfactory on the whole. The shoe shop supplies all the boys' boots; the tailors' shop does the mending of the clothes. There are twelve sailmakers, sixteen cooks, and eight stokers, and generally there is a *general preparation for sea life.*" Much attention is devoted to seamanship. Boys on entry are placed in the fourth class, or first instruction, and are examined quarterly with a view to advancement to the higher classes. The syllabus is as follows:—

SEAMANSHIP.

4th Class. First Instruction.	3rd Class. Second Instruction.	2nd Class. Third Instruction.	1st Class. Fourth Instruction.
Slight knowledge of names of spars, rigging, and parts of sails. Boat duty. Making clothes stops. Compass. Lead and line. Hammock drill. Coiling ropes. Bends and hitches.	A good knowledge of first instruction. Bends and hitches. Models and sail drill. Name of international code. Signal flags. Reeving running rigging.	A good knowledge of first and second instruction. Knots and splices. Anchor and cask. Grummets and cringles. Pointing and whipping ropes. Loosing and furling sails. Sending top-gallant masts and yards up and down. Reeving running rigging. Signalling by flags and semaphore.	A good knowledge of previous instructions. Fitting rigging, setting up the same. Use of palm and needle. Sailmaking. Making mats. Rule of the road at sea. Use of logline. Heaving the lead. Steering by compass and sails. Sailing a boat and the tender. Bending and unbending sails. Figures to denote the force of wind. Letters to denote the state of the weather.

Attached

Attached to the "Shaftesbury" is the tender "Themis," a top-sail schooner of 145 tons. During the summer months the "Themis," with three officers and thirty boys, cruises about the river Thames, and a voyage is generally made down the English Channel, touching at the various ports as far as Plymouth The school-work is conducted on the half-time system, and the curriculum embraces the 7th Standard in the Board Schools. The boys are instructed or engaged in the following trades:—Shoemaking, tailoring, sailmaking, cooking. The following Shipping Companies take "Shaftesbury" boys:—

The P. and O. Steamship Company.
The Orient–Pacific Steam Navigation Company.
The Atlantic Transport Company.
The New Zealand Shipping Company.

There are at present 54 boys serving in the Companies' ships, a number of whom have made several voyages, and have been advanced to the rating of ordinary and able seamen.

Observations during visit.—The Ship was visited by the Commissioner on December 3rd, 1902, and the following impressions on the management, &c., were noted. The "Exmouth," a sister training Ship intended for poorer boys, lies quite close to the "Shaftesbury." The boys on the latter Ship come from a better class as is evidenced by the high standard reached in the school-room. A system of rewards prevails. Red stripes on the sleeve of the coat indicate the position the bearer holds on the Ship. Each additional stripe carries increased pay and privileges. The winter uniform is a blue serge.

The shortest period of detention on the Ship is *eighteen months*, and this is only in the case of those boys who, when sent to the Ship, are nearly 14 years of age. As a rule boys are licensed out not later than 15 years of age. The Captain-Superintendent is opposed to a shorter period of detention on the grounds that it interferes with thorough reform. The hospital is on shore close to the Ship. A very large area of land, also close to the Ship, is available for various athletic games. The classes for shoemaking, tailoring, cooking, physical drill in small squads, theory of music, and scripture, were in active work at the time of the visit, and the whole Ship's company was seen partaking the mid-day meal —bread, cheese, and onions, the alternative course according to the Captain-Superintendent's discretion. The meal was much relished by the boys.

Attached to the staff is a *Shipping Agent*, whose duty it is to find positions in ships for eligible lads, to meet them when they return, to receive their money and regulate their allowance while on shore, and to take charge of their clothes. This supervision, over both land and sea apprentices, continues until the boys reach the age of 18 years. The authority over sea-going boys is granted by the Board of Trade. On the day of the visit four boys were passed in for the Royal Navy, a result which caused much delight to the Captain and staff. A doctor visits the Ship daily and a dentist weekly. The Examining Board for the Royal Navy *places great importance on the condition of the teeth* of boys who are candidates for this branch of service.

The examination for admission into the Royal Navy is a test of the physical condition of the candidates. The Captain's report is taken as to moral character and mental attainments. A high standard of morals is required for admission to the Royal Navy. Any lad guilty of thieving is debarred. The standard of admission into the Army is not so high. Corporal punishment is very rare, and when inflicted consists of a few strokes—not on hands—while solitary confinement is unknown although cells exist on the ship. The deck accommodation did not appear to be equal to that provided by the "Sobraon," and there was not that spick and span appearance about the "Shaftesbury" that one sees on our own training ship. At the same time it is only just to explain that the day of the visit was foggy, wet, and cold. The Thames was in no pleasant mood, and the surroundings were very cheerless. Several crews were out in the boats despite the unfavourable weather. The duties necessary for a seaman's life receive a great amount of attention, and the trades taught are intended to make the boys more efficient as seamen. A most commendable feature of the management is that of permitting the good conduct boys on the Ship to visit their parents once a year, and the privilege is enhanced when the period of visitation coincides with the Christmas vacation. *This privilege has never been abused.* The boys return to the Ship punctually on the expiration of their leave.

Ideal Training-ship for Boys.—The Captain-Superintendent was good enough to outline an ideal training institution for his boys. In the first place he would *do away with the Ship and house his boys in barracks on shore* near the coast. A ship has many drawbacks, viz.: (*a*) Insufficient space; (*b*) trouble through outbreaks of infectious and contagious diseases—this occurs even with the greatest vigilance; (*c*) continual expenses in the matter of repairs, &c., for which there is little to show. The "Shaftesbury" in 1902 underwent thorough repairs in a dry dock at a cost of more than £4,000. Speaking generally, the Captain says the ship system is expensive to maintain. He states that *the Admiralty are doing away with their training-ships and erecting barracks in which to house their men.* At Dartmouth, £250,000 is being spent in this way, and the old training-ship, the "Britannia," is to be dismantled. The Captain's opinion is that barracks will be built at all the naval ports, and that hulks will all soon be things of the past. Training brigs and masts and yards are all doomed, and in their place the training suitable for the ship of the day will be introduced. The steam tender will give boys the experience and preparation necessary for positions in modern sea-going ships.

Statistics.—The subjoined statistics of cost are from the latest report:—

THE "SHAFTESBURY" TRAINING-SHIP.

Average number maintained, 376.

	£ s. d.
Annual cost per head, including salaries	44 17 9¾ gross.
Do do do	36 13 11¼ nett.
Average weekly cost for provisions (officers)	0 11 5¼
Do do do (children)	0 2 6¼

(Expenses heavier than usual, owing to extensive repairs to the ship.)

Dietary,

Dietary, &c., "Shaftesbury" Training-ship.—Copies of the dietary table, leave of absence note, visiting note, and guarantee note in connection with the "Shaftesbury" are appended.

SCHOOL-BOARD FOR LONDON.—TRAINING-SHIP "SHAFTESBURY," OFF GRAYS, ESSEX.

DIETARY TABLE.

	Breakfast.				Dinner.										Supper.		
	Cocoa.	Bread.	Porridge.	Butter.	Beef.	Corned Beef.	Meat Pie.	Pea Soup.	Fish.	Suet Pudding.	Plum Pudding.	Rice Pudding.	Potatoes.	Bread.	Cocoa.	Bread.	Jam or Marmalade.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	pt.	oz.	pt.	oz.	oz.	oz.	oz.	pt.	oz.	oz.	oz.	oz.	oz.	oz.	pt.	oz.	oz.
Sunday	1	7	...	½	*6	...	...	...	...	...	8	...	8	2	1	7	1
Monday	...	7	¾	½	...	...	...	1	...	...	...	4	...	2	1	7	1
Tuesday	1	7	...	½	...	4	...	...	...	6	...	...	8	2	1	7	1
Wednesday†	...	7	¾	½	...	...	12	...	...	...	...	...	...	2	1	7	1
Thursday	1	7	...	½	*6	...	...	...	...	...	...	...	8	2	1	7	1
Friday	1	7	...	½	...	...	...	...	*12	...	...	...	8	2	1	7	1
Saturday	...	7	¾	½	...	4	...	...	...	...	...	...	8	2	1	7	1

Ingredients.

Cocoa—1 oz. of cocoa, ½ oz. sugar, and ¼ pint of milk per boy.
Porridge—2 oz. oatmeal, ½ oz. sugar, and ¼ pint of milk per boy.
Meat Pie—6 oz. mutton, 4 oz. flour, 1 oz. suet, 4 oz. potatoes, and 3 oz. various vegetables per boy.
Soup—1 oz. peas or lentils, 1 oz. rice or barley, with 8 oz. of carrots, turnips, &c., and 3 oz. of mutton per boy.
Fish—Soup may be substituted when fish is dear or unobtainable.
Suet pudding—2½ oz. flour and 1 oz. of suet per boy.
Plum pudding—2⅝ oz. flour, 1½ oz. suet, 1½ oz. plums, and ½ oz. sugar per boy.
Rice pudding—1½ oz. raw rice, ½ oz. sugar, and ¼ pint of milk per boy.
Butter—½ oz. for each child at a meal; dripping may be given in addition when obtainable from joints.
Salt and pepper—At discretion.
Rhubarb.—Rhubarb, with sugar, may be substituted for vegetables, provided no extra cost is incurred.
Green vegetables.—When green vegetables can be obtained they are to be substituted for 4 oz. of potatoes, providing no extra weekly cost is incurred.
Vinegar.—When corned beef or fish is given for dinner, vinegar may be served out at the rate of 1½ gallons per meal for the whole of the boys.

Note.—For boys while on the Tender "Themis," the allowance of uncooked beef is to be increased to 12 oz. each per day. Boats' crews may receive, in addition to the ordinary allowance, in cold weather, 8 oz. of bread and 3 oz. of marmalade, at the discretion of the Captain-Superintendent.

* These weights are uncooked. †Bread and cheese and onion dinner may be substituted for meat pie at discretion of Captain-Superintendent, viz. :—7 oz. bread, 3 oz. cheese, 3 oz. (about) onions.

Approved by the Managers, 28th June and 26th October, 1898.

(Signed) A. E. GARLAND,
Clerk of the Managers.

Approved, 1st August, 1898, and 29th April, 1899.

(Signed) JAMES G. LEGGE,
H.M. Chief Inspector of Reformatory and Industrial Schools.

School Board for London.
1249.
Training Ship "Shaftesbury."
Leave of Absence Note.

18 .

Boy's Name
From
To

Captain-Superintendent.

1249

SCHOOL BOARD FOR LONDON.—TRAINING SHIP "SHAFTESBURY," GRAYS, ESSEX.

LEAVE OF ABSENCE NOTE.

18 .

is permitted to be away on leave of absence from to inclusive.

Captain-Superintendent.

Section 34 of the Industrial Schools Act, 1866, is as follows :—

34. If any person do any of the following things (that is to say)—
First, knowingly assists, directly or indirectly, a child liable to be detained in a certified Industrial School, to escape from the school ;
Second, directly or indirectly induces such a child so to escape ;
Third, knowingly harbours or conceals a child who has so escaped, or prevents him from returning to school, or knowingly assists in so doing ;
Every such person shall be guilty of an offence against this Act, and shall, on summary conviction thereof before two justices or a magistrate, be liable to a penalty not exceeding two months, with or without hard labour.

6250.
School Board for London.
Training Ship "Shaftesbury."
Visiting Note.
Boy's Name
Date of Visit
Name of Visitor

Captain-Superintendent.

6250

SCHOOL BOARD FOR LONDON.—TRAINING SHIP "SHAFTESBURY," GRAYS, ESSEX.

VISITING NOTE.

You are permitted with friend to visit on between the hours of 1 p.m. and 4 p.m.

N.B.—This Note must be produced before being allowed on board.

To

Captain-Superintendent.

SCHOOL

SCHOOL BOARD FOR LONDON.—TRAINING SHIP "SHAFTESBURY," GRAYS, ESSEX.

GUARANTEE NOTE.

19 .

I, residing at hereby pledge myself responsible for the good conduct of my son, during his leave of absence, and do hereby guarantee his punctual return to the Ship at the time and on the day specified in his Leave of Absence Note. I also certify that there is no infectious disease about the house or neighbourhood.

Parent's Name.

The following certificate must be signed by either a clergyman, a doctor, or a schoolmaster.

190 .

I hereby certify that the home of Mr. is clean and respectable, and fit for the reception of while on leave from the training ship "Shaftesbury."

Clergyman, doctor, or schoolmaster.

Address.

The whole of this Form must be filled in correctly and returned by addressed to the Captain-Superintendent, and the railway fare enclosed. Postal orders must be sent, not stamps or post office orders.

Leave cannot in any case be granted until these conditions are complied with.

Train leaves Grays at ; return train leaves Fenchurch-street at .

Gordon House Girls' Home, Richmond Road, Isleworth.—In December, 1900, the Home Office certified the School with the Cottage Home for 70 girls. The 1902 report gives the following information :—

There are 70 girls in the Home. A distinguishing feature of the school is the large number of young children, four of them being four years of age. Classes in housewifery lessons have been re-started, and are a great help in the training of the girls. During the winter a course of lessons in "First Aid" has been given to the elder ones. They have shown great aptitude in the practical side of the work. As the school grows older the girls are of much more use in the making of their own garments. The elder ones are taught to cut out, fix, and make clothing, becoming thoroughly acquainted with the use of the sewing machine. The weekly washing, ironing, mending, and darning, in addition to some branch of housework to be done daily, make the little lives here very busy ones.—Amy E. Challenger, Superintendent.

The Government Inspector reports :—

It is impossible for anyone with experience of industrial schools to over-rate the value of the training courses. They not only quicken the intelligence, they give children an interest and pride in their work. The Swedish drill given to the girls is thoroughly good, and the excellent results on the bearing and gait of the girls remain as striking as ever. Attention may be called to the healthy way in which the girls have been trained to amuse themselves in the garden. It would be well if in all schools of this kind it were recognised that really useful recreation is largely a matter of training. It is always a pleasure to inspect this school, the children are so bright and well-mannered, and evidences that they are well cared for so abundant.

The Board School Inspector reports :—

Number for which the school is licensed	70
Number of children in the school	70
Number of London children	70
Number of whole-timers in school	65
Number of London children who are whole-timers in school	65

The walks per week are of about two hours each ; from one to two hours' play per day. Some of the girls have their own gardens. Each girl has a locker for her dolls and other toys. Fortunat a e the little "waifs and strays" gathered into Gordon House.

The following statistics of cost of maintenance, Gordon House Girls' Industrial School, are from the 1902 report :—

Average number maintained	68		
Annual cost per head, including salaries	£42	1	5 gross
,, ,, ,,	34	0	8½ nett
Average weekly cost for provisions (officers)	0	11	5
,, ,, ,, (children)	0	2	10½

Efficiency of Schools and Disposal of Children.—In concluding these remarks on the Industrial Schools of London the final paragraphs in the latest report of the Chairman of the Industrial Schools Committee are very significant, and are as follow :—

The Committee have given much attention to the satisfactory disposal of the children upon their leaving the Schools, for it is obvious that unless great care is exercised in this respect the children will turn out badly, the instruction and training which they have received will, in a large measure, be lost, and the money which has been expended upon them will have been spent in vain.

It is most important that children should be placed in situations which afford prospects of future advancement and an ultimate means of livelihood, even at comparatively low commencing wages, rather than that they should be placed in unskilled employment, such as errand boys, shop boys, and van guards, in which the initial remuneration is comparatively high. These latter posts are easy to obtain ; but, on the other hand, they rarely lead to permanent adult employment ; the lad in a few years has to make way for younger boys at lower wages, and he probably drifts into merely casual labour, and may even degenerate into the ranks of the so-called "Hooligans." For this reason the Committee have discouraged, as much as possible, the practice of licensing boys to the latter class of situations ; and they are glad to find that the managers of schools also are now generally resorting to them as a last resource for those boys who are very dull, or who have some slight physical defect which unfits them for better positions of greater responsibility. The disposal of girls is less difficult, as they are easily placed in situations in domestic service, in which they have good prospects of earning high wages, and of securing good, comfortable homes.

In conclusion, it should be pointed out that of late years public opinion with regard to industrial schools has considerably advanced. The Government, as well as the contributing authorities, now exact a much higher standard of education and of industrial training, and also require an amount of material and personal comfort for the children greater than was formerly thought necessary or even desirable. To these demands the managers have responded in a manner as remarkable as it is gratifying, with the result that the schools at the present time have attained a degree of efficiency in all directions such as was scarcely even contemplated by the most sanguine amongst those who were engaged in the work of industrial schools in years gone by.

This state of things is eminently satisfactory, inasmuch as the more we raise the moral, mental, and physical condition of the children entrusted to our care, the greater will become their self-respect and self-reliance, the more will their characters be strengthened and improved, and the better men and women will they become to encounter and surmount the dangers and difficulties by which they will be met in their career through life.

22nd October, 1902. JAMES WILSON SHARP, Chairman.

He (Mr. James Wilson Sharp) says further :

I am pleased to report that the Truant Schools of the Board continue to do excellent work, and fully justify their existence by the degree of success which they attain in curing truancy. About one-half of the children are permanently cured by a first detention, and, of the remainder, about one-half are cured by a second detention. This result is very sfactory. There appears to be, however, a small proportion of boys who have such a rooted antipathy to attending school

school that they remain persistent truants, notwithstanding the efforts which are made to induce them to attend, and in spite of repeated detention in a truant school. The Governor of the Highbury Truant School has pointed out that, upon their first admission, these boys are generally absolutely ignorant, and that practically the whole of the instruction they ever receive is given during their residence in a truant school.

The pressure upon the Board's Truant Schools has considerably relaxed during the last two years. This result, in my opinion, is due to four causes :—

Firstly—To the continuous and strenuous endeavours of the School Accommodation and Attendance Committee and its staff of officers to increase the regularity of attendance at ordinary schools.

Secondly—To the Elementary Education Act of 1900, which raised the maximum penalty for non-attendance from 5s. to £1.

Thirdly—To the increased general school accommodation which enables attendance at a Day school to be rigidly enforced in most parts of London.

Fourthly—To the absence of extreme pressure upon the truant school accommodation, which makes it possible for the revocation of a boy's license to be carried into effect immediately upon the recommencement of truancy, instead of its being necessary to wait for several weeks or months, as was the case formerly.

The value of the work done at the Drury Lane Day Industrial School was so marked that the Board felt it to be desirable to establish schools upon the same lines in other parts of London.

The children on license from this School make an almost perfect attendance at the ordinary schools.

I am convinced that a very large proportion of children are sent to Industrial Schools as a direct consequence of the indifference, immorality, vagrancy, or vice of their parents. For many of these evils, overcrowding in unhealthy slums is distinctly responsible. Large numbers of persons of different sexes and of various ages are often huddled indecently together in small and insanitary tenements. Children reared under such unfavourable conditions can scarcely fail to become loafers and criminals. If, however, they are removed from their evil surroundings they are saved from such fate and are enabled to grow up honest and respectable men and women.

It has been objected that we have no right to provide so well for these children, to give them so good an education, or to take so much trouble in their ultimate disposal, inasmuch as the children of many honest and upright people do not receive such advantages. I contend that such a theory is fallacious. So long as luxury and extravagance are avoided, it is the interest, no less than the duty, of the community and of the State to provide as well as possivible for these children, to educate them, to train their characters, to provide them with wholesome food, with comfortable clothing, with sanitary buildings, and with sound physical training, in order that they may leave the school in a fit condition to fight the battle of life.

The experience which has been gained during the last thirty years has proved that a comparatively small number are failures, in spite of bad hereditary influences, in spite of the temptations to which the children are exposed upon leaving school, and notwithstanding the endeavours of parents to resume their hold over them, in order to profit by their earning. In many instances, indeed, they do exceptionally well, become good citizens and heads of households, and reflect credit upon themselves and upon their training. I maintain, therefore, that the work and expenditure are not only justified by the results to the individual children, but that they are of immense advantage to the community at large.

It is a great and noble work, and enlists our warmest interest and sympathy. The object which we seek to achieve is worthy of our best and most earnest endeavours. Let me, then, express the fervent hope that in the educational legislation which is projected nothing will be done to maim or curtail the usefulness of the work connected with Industrial Schools. Rather let it be consolidated and strengthened, so that the good which has been effected in the past may be continued and increased in the future.

General Statistics in reference to Industrial, Truant, and Day Schools.—The following statistics are deemed of importance as showing the thoroughness of the Divisional Committee's work :—

PARTICULARS of cases brought before Committees and of admissions to Industrial Schools, Truant Schools, and Day Industrial Schools, 1902.

INDUSTRIAL SCHOOLS.

	Boys.	Girls.	Total
Total number of cases brought before Committee	1,487	248	1,735
Sent to Industrial Schools by Board	674	159	835
Do do other authority	74	2	76
Discharged	.....	.....	486
Bound over	.....	.....	108
Birched	.....	.....	73
Sent to the Workhouse	.....	.....	32
Do Reformatories	.....	.....	21
Out on license, returned to Truant Schools	.....	.....	26
Referred to Divisional Committees	.....	.....	25
Fined	.....	.....	7
Out on license, returned to Drury Lane	.....	.....	5
Sent to Voluntary Homes	.....	.....	9
No further action taken	.....	.....	3
Variously disposed of	.....	.....	6
Undisposed of at Lady Day, 1902	.....	.....	23
Total	.....	.....	1,735

TRUANT SCHOOLS.

Total number of cases brought before Committee	.....	.....	640
Sent to Truant Schools	.....	.....	577
Not sent to Truant Schools, being nearly 14 years of age	.....	.....	18
Medically unfit	.....	.....	3
Otherwise disposed of	.....	.....	26
Still under consideration	.....	.....	9
Resumed attendance at day school	.....	.....	7
Total	.....	.....	640

DAY INDUSTRIAL SCHOOLS.

Cases brought before Committee	152	27	179
Sent to Day Industrial Schools	140	24	164
Sent to a Parish School	.....	.....	1
Over age	.....	.....	4
Fined	.....	.....	1
Sent to ordinary Industrial Schools	.....	.....	4
Undisposed of	.....	.....	
Total	.....	.....	179

CHAPTER XLVI.

CHAPTER XLVI.

Other Reformatory Schools—Enlgish and Foreign

[J. W. TURNER.]

In addition to the institutions already described, the undermentioned schools were inspected :—

The Ecole de Réforme, for boys, Les Croisettes, Lausanne.
The Ecole de Réforme (girls), Moudon, Lausanne.
The Reformatory, Bastö, Kristiania.
The Philanthropic Home, Redhill, Surrey.

The Ecole de Réforme, Les Croisettes, Lausanne.—This is a reformatory for boys guilty of criminal offences, usually stealing, in the Canton de Vaud, Switzerland. It is situated in a most delightful agricultural district, about two miles from Lausanne. The well-tilled grounds are 60 acres in area. There are forty boys in attendance, from 10 to 20 years of age. The buildings are on the barrack principle—that is, the dormitories are under one roof. The school-room, the workshops, the bedrooms, the corridors, are all scrupulously clean. The white composite walls, not unlike granite, so noticeable in the public buildings in Lausanne, tend to give this institution a remarkably clean, bright appearance. Each boy has a fair-sized room to himself, supplied with a straw bed on a wooden bedstead, a small mat, and a little table, and in the bath-room, which is provided with hot and cold water, he has his little cupboard in which he keeps his comb, brush, looking-glass, soap, and towel. The discipline with regard to work is very severe, but the general appearance of the institution was neither that of a reformatory nor a prison. The boys all seemed well fed and well cared for, and there was nothing either in the dress they wore, or in their personal appearance, to mark them off as criminals or members of a reform school.

Manual training in woodwork and the cultivation of cereals and vegetables (practical largely), are the principal occupations of the boys. The cheerful little schoolroom is well equipped with modern furniture. The Swiss look well after the physical condition of all grades of pupils in all circumstances. Their weathersheds are as healthy as their schoolrooms, and often as beautifully ornamented. In the School there is a morning session from 7 to 10, and an afternoon session from 1 to 4. In connection with the physical training of the boys an inclined board is much used. This board is not unlike a wide wooden shutter about 5 feet long. When in use it is placed on the floor of the room, being raised some 5 or 6 inches at one end. On this inclined plane the boy reclines and stretches himself. It is better for the boy to use this contrivance rather than to throw himself on the ground, when he comes in from the labour of the field. Some of the authorities state that it is a corrective to the stooping acquired in the fields. A great majority of the youths leave the school at the age of 16 years, and take up positions found for them by the civil authorities of the Canton.

The Commissioners are much indebted to Colonel Pingoud, Prefect of Lausanne, for his kind offices on the occasion of this visit.

Ecole de Réforme, Moudon.—Moudon is a small town, lying in a charming valley, not far from the city of Lausanne. At the time the visit was made the school had only twenty-three inmates, ranging from 10 to 20 years of age. Regular class teaching as in the Ecole Primaire is given, together with the usual industrial occupations for girls—sewing, cooking, laundry work, and, in addition, vegetable gardening. All Swiss children are taught the dignity of work and the value of regular employment. The lady principal and staff take their meals with the girls. The buildings are prison-like in their environment, but there is evidence that the child life is a happy one, and the ladies in charge are to all appearances kind-hearted and humane. One thing pleasant to note is the absence of any uniform to mark or degrade the pupils or lead them to be looked upon as sinners. The aim of the school is to reform the girls by treating them with kindness and by removing everything that would tend to single them out for notice. As a rule the girls are apprenticed out at the age of 16.

The Bastö Reformatory.—The Bastö Reformatory School for Boys is situated on Bastö, an island in the Kristiania Fiord, about 50 miles from the city of Kristiania. The island, which has a sandy surface, is 600 acres in area, two-thirds being forest-land, chiefly pine, and one-third arable. There are 102 boys in the little settlement, which is given up entirely to the work of juvenile reformation. The country of Norway is divided into school districts, and each district appoints its own board of management. The board consists of seven members, and of these the State appoints two, a judge and a doctor of medicine; the remaining five, one of whom must be a lady, are elected by the people of the district. These are empowered to investigate all cases in their district of children leading a criminal life or neglected by criminal or other parents, and to send them to this or any other reformatory. This particular institution is considered of the most severe type, and is entirely supported by the Government. The system of management prevailing here is on the home or family principle. The Superintendent's house, the offices, the chapel, the class-rooms, and the dining-room, are in the centre of the settlement, and radiating from this, at a distance of about a quarter of a mile each, are three homes which are occupied by the 102 boys. The classification in the various homes is strictly on an age basis—the youngest, under 12 years of age, in one

one home; those up to 14 or 15 in another; and the oldest members by themselves in the third home. The pupils in the three homes work and act separately, each under its own master and assistants, both in school, the workshop and the grounds, and only come together at church service, at meal times, when each home has its particular division in the great dining hall, and on the parade ground, where each has its own section for drill purposes. The Superintendent is in close touch with the master of each home, and pays frequent visits daily. The age division gives the best results from the standpoint of morality. The shortest period of detention is two years, but incorrigibles may be detained to 21 years of age. The three school-rooms open out from a corridor, and are cheerful and well lighted. Three and a-half hours daily are given to the more important branches of elementary class-work. The work-rooms for the different trades are nicely built and well placed. The quarters for the officers are, like some of the buildings in the centre of the settlement, of stone and cement. The main buildings are lit with electricity. The kitchen is fitted with modern apparatus. The boys assist women cooks, and take turns to wait on one another at the dining table. They also wash, iron, and mangle their own clothes, taking the work in relays. The bath-rooms are not of the best construction. The dormitories are not hygienic—those occupied by the senior home are very small cubicles, and the ventilation is very defective. In deference to the wishes of the senior boys the cubicles were not abolished. There is certainly more privacy and a greater feeling of ownership with the cubicles, but these are small matters when compared with the injury likely to accrue from sleeping in a vitiated atmosphere. The chief occupations are gardening, butter-making, tailoring, carpentering, shoe-making, household work. The Superintendent believes in keeping the boys well employed, and hence hard work is the rule of the Institution. Corporal punishment is inflicted, but kindness and tact are preferred to the stronger coercive measures. Sympathy is the key-note. The Superintendent appeals to what is good in the boy's nature and shows a spirit of trust. He leads his boys to do right by appealing to their better nature. He considers that his personal contact and his interest in their moral welfare, evidenced by regret or sadness on his part when they fall from a standard set up between master and pupil, will prove a better means of getting what is good out of a boy than any amount of flogging or harsh, unsympathetic, treatment. His management may be briefly summed up in the terms sympathy, trust in boys, kind, big-hearted, tactful manner, beaming over with love for his work. He is no believer in the mark system; but he gives rewards at the end of the quarter on reports of the home masters and his own observations. A reasonable time is given to recreation and relaxation. There is a good gymnasium. The boys are licensed out about the age of 16. If they are sent back to the school through bad conduct they are detained till 21 years of age. The Superintendent is a man of wide and varied experience. He has visited for his Government all the important reformatory schools in the United Kingdom, Europe, and America, and has been engaged in the work of teaching for nearly 20 years. He is a strong advocate for the home system. His work is appreciated by his Government, and what is more he is loved by his boys.

The Philanthropic Home, Redhill, Surrey.—The school dates from 1788. The property, 260½ acres, is owned by the Philanthropic Society, of which the King is patron. There are 300 boys in the Home, who live in five separate houses. The five families have little intercourse with each other. Each house has its master and matron, and the warden of the Farm Schools, the Rev. M. G. Vine, B.A., is the head and director of the whole institution. The boys spend their time partly in school and partly at work. Each boy goes through a course of agricultural labour, and later on is given the opportunity of learning a trade. The chief means of reformation are religious influence, personal kindness, exact justice, education, and constant employment. At the expiration of their term of detention, or earlier if their conduct merits such a reward, the boys are sent, as far as possible, to employment found for them at home or in the colonies. A special watch is kept over every boy for at least four years after his discharge from the school. Boys are admitted to the Farm School, on judges' or magistrates' orders, after conviction of crime; or upon His Majesty's conditional pardon granted to those sentenced to penal servitude; or by transfer from other Reformatories. To be eligible for admission, a boy must be from 12 to 16 years of age, of sound bodily health, capable of receiving mental instruction, and fit for agricultural labour. It is strongly urged that when the age permits, the full term of five years' detention be given to every boy, or in the case of older boys till 19 years of age. The Director in one of his recent reports, referring to magisterial reluctance in sending deserving cases to reformatories for treatment, says, "It does not pay to treat juvenile crime with undue leniency . . . . I am convinced that the outbreak of street ruffianism of the last few years was almost due to this unwise leniency or reluctancy in dealing with young delinquents. Industrial schools should be sooner resorted to, and then in time reformatory schools may come to be no longer needed, except for much older cases, for young men and not children." On the question of punishment the Director expresses himself thus:—"I do not think we shall ever be able to do without punishment, especially corporal punishment, for there are certain offences which carry with them as an antidote a very necessary bodily correction, a sort of *argumentum ad hominem*, which is very wholesome."

Dietary Scale, &c., Redhill.—Copies of the time table, dietary table, occupations of the boys of Redhill Philanthropic Home, are given.

TIME-TABLE (WEEK DAYS).

	Summer.	Winter.		Summer.	Winter
Rise	5·30 a.m.	6 a.m.	Work	1 p.m.	1 p.m.
School or work	6 ,,	6·30 ,,	Recreation	5·30 ,,	5·30 ,,
Breakfast and recreation	8 ,,	8 ,,	Supper	6 ,,	6 ,,
Chapel (Church of England on grounds)	9 ,,	9 ,,	School and recreation	7 ,,	7 ,,
School or work	9·30 ,,	9·30 ,,	Prayers	8·30 ,,	8 ,,
Dinner and recreation	12 noon.	12 noon.	Bed	9 ,,	8·30 ,,

Band each day, according to class. Gymnasium classes—Mornings, 10 to 12 a.m.; Evenings, 7 to 8 p.m. Drill—(General) Monday and Thursday, 1 to 2 p.m.; (Special) Tuesday, 1 to 2 p.m. Half-holiday on Saturdays, Bank Holidays, and special days. On Sunday the hours of service in the School Chapel are—Holy Communion, 8·30 a.m.; Matins, litany, and sermon, 11 a.m.; Evensong and sermon, 6·30 p.m.

About an hour is devoted each Sunday to religious instruction in school, and half-an-hour each week day.

DIETARY

DIETARY TABLE.

Day.	Breakfast.	Dinner.	Supper.
Sunday	Bread, 8 oz. Milk, ¾ pint, or cocoa, 1 pint.	Meat, 6 oz. Bread, 4 oz. Vegetables, 16 oz. Baked suet pudding (20 oz).	Bread, 8 oz. Butter, ¾ oz. Milk or Cocoa, as at breakfast.
Monday	Do	As Sunday.	Do
Tuesday	Do	Do (or fish 1 lb.)	Do
Wednesday	Do (or as Saturday).	Baked suet pudding (20 oz).	Do
Thursday	Do	As Sunday.	Do
Friday	Do	Bread, 12 oz. Cheese, 4 oz. Onions, 4 oz.	Do
Saturday	Oatmeal porridge, 1 pint (6 oz.) Bread, 4 oz. Milk, ¾ pint.		

In winter on two meat days, 4 oz. are allowed for soup, with 8 oz. bread and vegetables, and on the other two meat days 8 oz. meat are supplied. Coffee is served on Sundays, and jam allowed in lieu of butter once a week. Tea and cake are supplied for supper once a month, extra, under special rules.

BOYS' RATIONS PER WEEK.

Meat (without bone, uncooked)	24 oz.	Vegetables	4½ lbs.
Suet	2 ,,	Sugar	3½ oz.
Bread	8½ lb.	Cocoa (when milk is less than 10½ pints)	5¼ ,,
Flour	1¼ ,,	Cheese	4 ,,
Butter	5¼ oz.	Oatmeal	6 ,,
Milk	10½ pints.		

OCCUPATIONS OF THE BOYS.

Field, 196; cow-house, 12; cart-house, 4; stable and garden, 8; tailors, 19; shoemakers, 14; carpenters, 14; blacksmiths, 4; bakers, 3, bricklayers, 3; laundry, 3; house, 18; chapel, &c., 2. Total, 300.

Summary.—No reform can begin at the top, and as the reforms the Commissioner proposes to recommend must depend upon regular and full school-attendance as an initial condition, some new principles must be introduced into the present Public Instruction Act of New South Wales. Compulsory education in its full, complete, sense must become a live and educative force before the higher developments of public education can be hopefully undertaken. The basical improvements, reduced to cardinal issues, are as follows:—

1. The abolition of a minimum attendance.
2. The provision of adequate means to secure full and regular attendance, and of corrective influences to such an end.

The present Amending Bill before Parliament contains all the essential provisions for effecting the improvements in question. The Bill abolishes the period of default, and provides for Truant Schools. Until this measure becomes law nothing can be attempted in these all-important directions. The Commissioner's immediate recommendations are subjoined:—

1. Abolition of minimum attendance so as to deal with default from day to day.
2. Establishment of one class of Truant Schools on such a broad basis as to include the best features of these distinct types of schools at present in vogue in London. This is practically met by the present Bill, inasmuch as the period of detention is left to the Minister; it can be for years, or for shorter periods, or simply for daily attendances, as may be warranted by the circumstances of each case.
3. Establishment of Special Courts for the hearing of juvenile cases. A special Act should be passed for this purpose, unless provision can be incorporated in the present Public Instruction Amending Bill.

Most of the administrative details must be provided for in Regulations, and the more important of these are comprised in the following:—

1. Division of the State into districts solely for the working of the school attendance provisions.
2. Instructions to Teachers and Attendance Officers as to their respective and mutual duties.
3. The specification of definite lines to govern the junctures of caution and prosecution, and the issue of exemption certificates.

The Commissioner's report contains all the necessary data in regard to these matters, and he will be prepared in due course, when the Act has been amended, to assist in the compilation of such regulations as he has indicated.

CHAPTER XLVII.

CHAPTER XLVII.

School Hygiene, Buildings, and Premises.

[G. H. KNIBBS.]

1. *Importance of School Hygiene.*—The reach of a vigorous and intelligent public opinion on matters of hygiene can be estimated only with difficulty. It is obvious, however, that public health, and as a consequence, national energy and ability, are deeply affected thereby; and that if such an opinion is to be created, its origin must be with the child and his surroundings. His mind then plastic, and his character only in process of formation, makes it possible, through him, to totally transform popular hygienic opinion and tradition, and to do so even in one generation. The *primary* school, therefore, can be made, through precept and example, the fitting instrument of so desirable a transformation, and public habit can be so affected and public consciousness so aroused by means of the school and of its influence, that the present very indifferent national estimate of the importance of hygiene will be totally changed for the better, and thus cleanlier homes and habits become characteristic of our people. Apart from the effect on feeling and opinion, which of course are the bases of action, the actual condition of the child in school is a matter of no slight moment, either as regards his health, or as regards the efficiency of his education.

"School hygiene," says Dr. A. Combe, "is quite a modern science. Before the middle of the 18th century the health of children and the physical education of the adolescent, were completely abandoned to chance and left to the ignorance and prejudice of parents."[1] That this is still only too true of our State, needs hardly to be said, and we have as yet done nothing adequate to put our State schools in a hygienic condition, comparable, say, to that of the schools of Switzerland.

It will be conceded that *compulsory* attendance at schools carries with it a serious responsibility in regard to their condition, apart from any broader view as to the wisdom of safeguarding public health and of developing national ideas in regard to hygiene. Speaking on this point, Monsieur J. Clerc, State Councillor of Neuchâtel, in a discussion on the aim of the Folk-school of Switzerland, says:—"The school then ought, *in the very first place, to assure the health of the pupil.* This is a truth which, it must be recognised, has penetrated more and more the Swiss people and the Swiss authorities,"[2] a fact evident enough to any visitor of the, in this respect, unsurpassed schools of Switzerland.

2. *Origin of School-hygiene.*—A word or two on the history of the hygienic movement in schools may not be out of place. It was perhaps Jacques Ballexserd, author, in 1762, of a work on physical education,[3] and in 1772 on the mortality of early life,[4] who first created something like a definite recognition of the significance of the subject. Ballexserd greatly influenced Rousseau, whose "L'Emile," appearing in the year last-mentioned, viz., 1772, constituted an epoch in the development of pædagogic ideas touching this subject among others. These two authors, having given such impulse to the consideration of the hygiene of childhood, it had but to develope. In America, systematic researches were commenced through the influence of the remarkable works of Henry Barnard as early as 1838. These were followed by similar studies in Switzerland, among which those of Dr. Fahrner, of Zurich, may be mentioned as eminent. The Canton of Schaffhouse passed laws for school hygiene as early as 1852. In 1867, by his renowned work published in that year, Dr. Guillaume, of Neuchâtel, drew general attention to the matter, and commanded for it a still wider recognition, and one more in keeping with its intrinsic importance to pædagogy and pædagogical effort; and *to-day it is fully recognised as a part of any intelligent treatment of educational systems.*

3. *Relationship of Pædagogy to Hygiene.*—The concern which pædagogy should have for hygiene, Duval puts very clearly when he says: "It is necessary that school hygiene and pædagogy, formerly irreconcilable enemies, and even to-day marching together but half-heartedly and with bad grace, should move together in complete accord. It is only by such union that the physical, moral, and intellectual development of the child can be achieved in a normal and harmonious way. *Only through this fruitful alliance of hygiene and pædagogy can the magnificent hopes, which have been born in every heart by the tremendous development of primary instruction, be realised.*"

Dr. A. Combe, before referred to, also defines very happily the relationship which should exist between the two. He says: "It is not by means of reciprocal concessions, agreed to without conviction on the one side, and accepted as mere make-shifts on the other, that the beneficent harmony of hygiene and pædagogy can be established. *It is necessary that all teachers and all school authorities of whatever degree, should understand school hygiene and be interested therein. It is necessary also that they all should apply*

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[1] L'hygiène scolaire en Suisse, par le Dr. A. Combe, p. 5, Lausanne, 1898.

[2] L'École populaire en Suisse et son rôle actuel au point de vue hygiénique, moral, économique, e tsocial. par M. le Conseiller d'Etat. J. Clerc, Neuchâtel. "But de l'école populaire"; page 252, Lausanne, 1896.

[3] Sur l'éducation physique de l'enfant, 1762.

[4] Sur la mortalité du premier age, 1772.

apply themselves to the serious study of hygienic questions, and end by being penetrated with their importance;" and speaking of the practical means of reaching a deeper appreciation, he adds: "A national exhibition of school hygiene ought to assist marvellously the obtaining of so desirable a result. In no place could or ought interest to be better awakened; no better occasion could be offered to teachers to see, examine, and study the advances so frequently realised in school hygiene.

In a real and very important sense, the hygienic elements of school-life, of schools and their equipment, seen by the Commissioners during their tour, constitute an hygienic "exposition" of the most complete kind. And it may be said that in respect of almost every element of the subject, we have, much, indeed we have almost *everything*, to learn. It is proposed, therefore, to dwell at considerable length upon it, and in doing this to draw largely from Swiss sources, for in the Commissioners' judgment the Swiss school-hygiene ranks as high as that of any other place in the world. By way of illustrating the point, the Genevese Regulations as to school-hygiene, dated 28th January, 1898, may be quoted, and also their Regulations for the sanitary inspection of schools, dated 24th December, 1888.

4. *Swiss School-hygiene.*—The Regulations translated from official documents are as follows:—

GENEVESE REGULATIONS AS TO HYGIENE IN SCHOOLS (28TH JANUARY, 1898).

Art. 1.—The plot destined for a school-building must be as central as possible, airy, of easy and sure access, away from every source of noise, and remote from all unhealthy or dangerous establishments. It must be at least 100 metres (about 110 yards) from any cemetery. The soil shall be rendered wholesome by drainage.

Art. 2.—The disposition of the buildings shall be determined by the position, configuration, and dimensions of the plot of land, the free view of the sky, and especially the distance of neighbouring structures.

Art. 3.—In such communes as have the mayoralty and the school in the one building, the two services shall be wholly separated. No service, foreign to the school, may be installed in school buildings without the authority of the Department of Public Instruction.

Art. 4.—In every school-group, the various schools should have distinct entrances, and, if possible, these should not be contiguous. The placing of the recreation-yard of the infant-school in the immediate neighbourhood of the primary classes should be avoided.

Art. 5.—A school-group should not exceed 500 pupils.

Art. 6.—The caretaker's apartments ought to be arranged as a lodge at the main entrance.

Art. 7.—Every school-building shall be provided of a recreation-yard and a gymnastic hall.

Art. 8.—The area of a recreation-yard shall be calculated at the rate of about 4 square metres (43 square feet) to each pupil. One part shall be covered so as to form a shelter in case of bad weather. The ground shall be sand, or else covered with fine gravel. Paving or cementing may not be used except for pathways or walks. The levelling of the ground shall be so arranged as to insure the proper flow of the water falling thereon.

Art. 9.—The class-rooms on the basement ought to have their floors 0·60 metre (2 feet) at least, above the external ground level. Class-rooms may not be installed in such places as are ground-floors on one side and below the ground on the other, unless these localities have two faces completely free and the others isolated by the level plots.

Art. 10.—If the floor is not placed above spaces, it shall be put upon a platform, or upon a stratum of impermeable material.

Art. 11.—Each class-room shall have an independent entrance. The gates must not open directly either upon the street or upon the yards.

When the class-rooms are provided with lobbies, these ought to have a breadth of at least 1½ metre (5 feet), and should receive air and light directly.

Art. 12.—The flight of stairs giving access to class-rooms should have a minimum breath of 1½ metre (5 feet). The treads should have a breadth of 0·28 to 0·30 metre (11 to 12 inches), corresponding to a rise of 0·15 to 0·16 (5¾ to 6¼ inches). In no case shall the access be mere ladders.

Art. 13.—The class-room shall be of rectangular form, and its area calculated in the ratio of 1·20 square metres (13 square feet) per pupil.

Art. 14.—The lighted faces of the school-buildings should be sufficiently distant from neighbouring buildings, so that in the class-rooms of the lowest story, even the pupils furthest from the windows may get the direct light of the sky; and so that the eye, placed level with the table, can still perceive a vertical extent of the sky of at least 0·30 metre (12 inches) measured on the window.

Art. 15.—The lighting shall be unilateral and come from the left of the pupils, or bilateral, with a predominance of daylight coming from the left.[2] In case of need, the lighting can be completed by demi-windows placed behind the pupils and as near the ceiling as possible.

Art. 16.—The windows shall be rectangular, as large as possible, and shall be separated by narrow mullions. The window-sill shall be weathered, and lie about 0·80 metre (2 feet 8 inches) above the interior floor. The embrasures shall be widened in such a manner that the daylight shall enter the angles of each class-room. The underneath of the lintels of the windows shall also be as near as possible to the ceiling. The glazed surface shall be preferably equal to a third and not less than a fourth part of the surface of the class-room.

Art. 17.—Upon the non-lighted faces there may be bays for the aeration of the room, or for its insolation during recreation and in the absence of the pupils. There must, however, not be bays for lighting in the front of the pupils. In order to intercept direct sunlight (insolation) or its reflection, the windows shall be provided with blinds of thin material.

Art. 18.—The rooms for drawing or for sewing may be lighted from above.

Art. 19.—The height of the ceiling shall not be less than 3½ nor more than 4 metres (11½ to 13 feet.)

Art. 20.—The ceiling shall be white with a faint shade of yellow, and the walls of a colour a little less bright.[3]

Art. 21.—The ceilings shall be flat and in one, and there should not be a cornice round the walls. The angles formed by the meeting of the walls or partitions with each other or with the ceilings shall be rounded with a radius of 0·10 metre (4 inches.) *All the interior surfaces of the walls shall be covered with smooth material, allowing it to be frequently washed and disinfected.* The bottom ought to be provided with a plinth in faience (tiles) or cement.

Art. 22.—The floor of the class-rooms shall be in *hardwood parquetry*, bedded as much as possible in bitumen.

Art. 23.—*The school-room shall be cleaned every day.* The cleaning shall be by the *damp method*[4] (sawdust, dusters, &c.). It shall be scoured at least three times a year.

Art. 24.

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[1] The *italics* are not in the original.

[2] The Commissioners think it should also come slightly from the rear.

[3] The Commissioners believe it to be established that pale green is the best colour for the walls. See reference to Dr. Combes ideas of hygiene.

[4] This is hygienically of great importance.

Art. 24.—The stoves ought to be sufficiently large to give, without overheating, a good warming to such class-rooms. The metal stoves should have a double envelope and be ornamented. Cast-iron stoves with direct fire are prohibited. The stoves shall be provided with a water-reservoir for evaporation.

Art. 25.—Arrangements shall be so made as to assure thorough ventilation to every part of the class-rooms. Pure air should be conducted immediately from the outside. The orifices of access and escapement should have a sufficient sectional area.

Art. 26.—The cabinets (closets) and urinals must be isolated from the rest of the building by good doors, etc., and must be provided with water and ventilators. The drains should be separately ventilated, and so constructed as to be perfectly water-tight and hermetically sealed. The walls and the floors of the cabinets and urinals should be of impermeable material. Every angle should be rounded.

Art. 27.—Every school-building shall be installed with lavatories in sufficient number, and provided with soap and towels.

Art. 28.—For artificial lighting, the best sources of light are electric incandescent lamps. If gas or petroleum is used, it is necessary to have one lamp of circular flame (argand) for every four, or for every six pupils as a maximum. The flame ought to be about 1 metre (3 feet) above the table or the desk, enclosed in a chimney provided with a shade of appropriate form in metal with polished interior. The gas flames known as bats-wing ("à papillon") are prohibited in school-rooms. A lamp with reflector will serve to illuminate the black-board.

Art. 29.—School furniture. The school-rooms ought to be provided with the Mauchain type of furniture or some other presenting the same advantage. (This means with adjustable seats and desks.)

Art. 30.—The distance between the seat and the table shall be negative; that is to say, the table shall slightly overhang the seat. The height of the seat in relation to the table ought to be such that the forearm of the child seated, is horizontally placed upon the desk when he lets his arm fall. *The seats ought to be provided with a back designed to serve as a rest for the body when the child is not writing.* The height of a seat shall be calculated so that the feet of the scholar rest flat upon the floor.

Art. 31.—The inclination of the desk ought to be such that the place of the paper is sensibly perpendicular to the visual ray.

Art. 32.—The "black-board" shall be slate or slated. It shall be so placed as to avoid reflecting light.

Art. 33.—The pads used for cleaning the board shall be suppressed, and shall be replaced by wet sponge.

Art. 34.—*Slates shall be prohibited.*

5. *Swiss Regulations regarding sanitary inspection.*—Sanitary inspection in Switzerland is not merely nominal. There is a real recognition of what good sanitation means, and consequently the matter is treated with a thoroughness to which we have not yet attained. The Regulations are as follows:—

GENEVESE REGULATIONS CONCERNING THE SANITARY INSPECTION OF SCHOOLS (24TH DECEMBER).

Art. 1.—The sanitary inspection of public or special schools is placed under the orders and surveillance of the Director of the Health Bureau. (Statute, Art. 3.) This inspection is specially exercised in regard to primary and infant schools

Art. 2.—The Canton of Geneva is divided into twelve school-districts (according to a table given).

Art. 3.—The first district is entrusted to the Director and the physician associated with the Bureau of Health. In all the other districts the sanitary inspection is made by a physician nominated by the Department of Justice and Police. The municipal authority of the town of Geneva supervises the sanitary visitations of the infant schools.

Art. 4.—At least two general visits take place annually in the infant and primary schools—one in January, the other after the longer summer vacations.

The medical inspectors of the schools are bound to make supplementary visits in these establishments in their districts every time that they are required to do so by the Director of the Health Bureau.

Art. 5.—The medical inspector must control the hygienic state of the class-room from the point of view of light, of heating, of ventilation, of furniture, of cleanliness. He will go to the local-annexes, vestibules, yards, gymnastic and reunion halls, cabinets (w.c's), installation of water, etc.

Art. 6.—Each child is to be individually examined.

Art. 7.—Every child presenting symptoms of a contagious malady is to be sent away from the school. The medical inspector will immediately address a letter of advice to the parents, containing the reasons of the sending away of the pupil. The pupil shall not be admitted again except on presentation of a medical certificate certifying that his re-entry may take place without bad consequences.

Art. 8.—The medical inspector is bound to deliver the above certificate gratuitously to the children of his district who present themselves at his place at the days and hours of consultation.

After each inspection a report is made according to the following formula:—

Sanitary visit of School Date

A. Locality, lighting, heating, school furniture, cabinets and urinals, yards, gymnastic halls, meeting halls, water installation.

B. Class No. 1.—Temperature; 2.—No. of children on roll; No. of children present; No. of children sent away; 3.—Diseases noticed; 4.—Observation.

Signature of medical inspector.

This report is sent directly to the Health Bureau, which transmits it to the Department of Public Instruction to the municipal authority, and to the Inspector of Primary Schools in the district.

Art. 10.—The masters must regularly exercise a strict superintendence in regard to the cleanliness and state of health of the children confided to them.

Art. 11.—The medical inspector will send to each master an instruction containing a list of the contagious diseases and the description of the first symptions of them.

Art. 12.—If in the interval of the medical inspector a master believes that he recognises in one of the pupils the symptoms of a contagious disease, he will send him provisionally away from the school, and at once advise the Director of the Health Bureau, the Medical Inspector, and the Chief Inspector of the district.

The Director of the Health Bureau will direct that an inquiry be made, and make known to the Instruction Department, to the Communal authority, and to the Inspector, the result of this inquiry and the measures taken.

As concerning the pupils, the process is otherwise, and follows the method fixed by Arts. 7 and 8.

Art. 13.—In serious cases the Director of the Health Bureau may direct the closing of one or several schools, and inform the communal authority and the Public Instruction Department.

Art. 14.—(Repeal of certain dispositions).

6. *Local hygienic standards defective.*—It is now obvious, and certainly these Regulations indicate clearly enough, that Swiss ideas of hygiene are seriously entertained; and in regard to the element fo cleanliness alone, even in the old buildings, it may be said that the schools of our State bear no comparison; nor do our schools compare favourably with those of America. In regard to airiness, convenience, lighting

lighting, sanitary fitting, playgrounds, general appearance, internal arrangement, ventilation, and in means for moderating or increasing temperature, our schools are hopelessly behind; and, in fact, such schools as we here have are, class for class, very poor indeed compared with the schools of Switzerland, or with those of the United States, which are recently constructed.

This is not only in matters which effect the external appearance, but the comfort and health of teacher and pupil, as well as the possibility of profitably employing the school hours.

The truth is that our public standard here is very low as compared with some parts of America, with Switzerland, St. Petersburg, Finland, Norway and Sweden, and indeed almost the whole of Europe, excepting perhaps Italy; and even in regard to Italy it should be pointed out that no public school, even in Sydney, is in any way comparable to the last built public school in Turin.

From the Continental and American points of view our schools are badly built, unhygienic, and poor, and as the matter is one of great importance it is necessary to treat the question of hygiene very thoroughly in this report. It is practically immaterial whether one takes the best American public schools or the Swiss public schools as a model; they are both worthy of their peoples. Dr. Combe, before quoted, says: "The Swiss people may well be proud of their school-buildings. Wheresoever one may be travelling in our country, whether in the cities or villages, in townships or in hamlets, when one finds on the road a house more beautiful, richer, more spacious, better situated than the rest, one may be sure that it is a school building at which he is looking.

"The construction of fine schools is one of the prepossessions of all the authorities of our country Unhappily a knowledge of school hygiene cannot be demanded of the municipal authorities of the smallest villages, and very often these authorities are more concerned about the façade than about the schoolroom and its orientation, and they do not take sufficient account of the hygienic conditions, which should be fulfilled in the schoolroom where the child passes a great part of its existence."

Remembering even these supposed improperly orientated schools, one might indeed be satisfied if they replaced the very best schools in our own State. *The fact is, that we have nothing approaching them.* They stand as a splendid monument of Swiss estimate of the value and dignity of education, and in unfortunate contrast with our own. It is impossible to view the Swiss schools without a vivid admiration of the people who deem education worthy of such an effort, for both in respect of beauty, completenes, and hygiene, they are incomparably superior to the schools in this State.[1] And this is no exaggeration, but the sober truth—a truth we shall do well to take into our very serious consideration. Such schools as those of Switzerland must inevitably leave their impress upon the instincts, habits, and tastes of the nation for good. One cannot help realising that our estimate here of the importance of the scholastic surroundings of our children and the estimate of Switzerland are wholly dissimilar. "Is this difference one of any moment?" may well be asked. The answer is, that an intensely practical people like the American has seen fit to follow in the footsteps of Switzerland and are well satisfied with the result.

7. *Outline of systematic school hygiene.*—Systematic school hygiene embraces three main elements, viz.:—(A) That concerning the school itself; (B) that concerning the scholar who frequents it; (C) the inspection of both of these from a hygienic point of view. The following outline will exhibit this more fully:—

SKETCH OF SCHOOL HYGIENE.

A *Concerning school.*	B. *Concerning scholar.*	C. *School-inspection.*
A 1. School premises—(i) locale; (ii) building; (iii) yards.	B 1. School maladies—(i) non-contagious; (ii) contagious.	C 1. General.
2. School equipments—(i) furniture; (ii) laboratories, etc.	2. School-work—(i) conditions; (ii) overwork.	2. School grounds, etc.; building, etc.
3. School material.	3. Physical culture—(i) gymnasium; (ii) military drill; (iii) games—both from standpoint of physical culture.	3. Scholar.

A 1 (i). School locale.—(a) Localisation of the school premises; (b) natural features of suitable plot; (c) character of its soil, drainage; (d) necessary size and area; (e) provision for future development.

A 1 (ii). School Building.—(a) Forms and dimensions of building; (b) orientation of principal façade; (c) construction—materials, disposition, etc.; (d) school-rooms—dimensions, cubic and floor space, colour of walls; (e) adjuncts—corridors, vestibules, cloak and hat rooms; (f) lighting—by windows, artificial; (g) ventilation: (h) heating and cooling; (i) lavatories and latrines; (j) douches and bathing rooms; (k) gymnastic hall; (l) cleaning.

A 1 (iii). School-yards and Courts.—(a) Courts and yards; (b) gardens and shade trees, etc.; (c) provision for physical exercise, and for wet weather.

A 2 (i). School Furniture.—(a) Black-boards; (b) school benches; (c) school maps, etc.

A 2 (ii). School Laboratories, &c.—(a) Physical and chemical laboratory; (b) school museums; (c) school libraries and reading rooms.

A 3. School Material.—(a) Abandonment of slates; (b) hygienic care of material; (c) school dispensary.

B 1 (i). Non-contagious Maladies.—(a) Defective sight, hearing, etc.; (b) general physical defects; (c) anæmia, caries, adenoid growths, etc.; (d) brain diseases.

B 1 (ii). Infectious, Contagious, and Parasitic Maladies.—(a) Minor infectious, contagious, and parasitic maladies found in school; (b) serious infectious and contagious diseases; (c) prophylaxis as regards all forms of infection and contagion.

B 2 (i). Conditions for School-work.—(a) Lighting; (b) ventilation, heating, and cooling; (c) position of scholars at work; (d) school furniture.

B 2 (ii). Overwork at School.—(a) Physical and mental fatigue; (b) school hours; (c) home-work.

B 3 (i). Gymnasium.—(a) Physical exercise generally; (b) gymnastics for boys and girls; (c) equipment and care of gymnasium.

B 3 (ii). Military Drill.—(a) Ordinary drill; (b) military operations.

B 3 (iii). School Games.—(a) Provision for school games: (b) games and their supervision.

C 1. Inspection in General.—(a) School hygienic inspector; (b) qualification and function; (c) duties devolving upon directors and teachers.

C 2. Inspection of School-building, grounds, etc.—(a) Locality; (b) school-building; (c) school grounds.

C 3. Inspection of Scholar.—(a) Physical fitness for ordinary school duty; (b) disease; (c) educational statistics.

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[1] And, indeed, of Australia.

It will be noticed that sometimes the same subject appears under two headings. It is naturally convenient to treat it under either, the two relations being simultaneously discussed. It will, however, be impracticable to discuss the subject exhaustively in this report; consequently the above outline will not be implicitly followed, but the details taken as may seem convenient, and no attempt will be made to discuss them at all.

8. *Choice of site for school.* A 1 (i) (a).—Little can be added to the direction of Art. 1 in the Genevese Regulations. The directions in the different cantons are much the same, viz., that the schools shall be situated either on dry plots, or on plots that can be thoroughly drained; the sites shall, moreover, be airy, of free and easy access, away from all noisy, unhealthy, and dangerous establishments, and shall not be near cemeteries. The immediate surroundings used for gymnastic exercises, drill, or school games and recreation, should be of the same character.

(b) *Position of school plot.*—The site should, wherever possible, be a commanding one, and worthy of a noble building, even if there be no intention to erect it for the next century, for it is certain that such sites will ultimately be required. In many countries the public school, though rarely ornate, is noble in its architectural character, and beautifies the city or town in which it is found. It would be well to remember that this State is only in its infancy, and that the school is one of its institutions, the dignity and importance of which must inevitably advance with its development. To-day, in many countries, the school, from its lowest to the highest form, has already attained to a very high place, and the school-house, as already said in the case of Switzerland, is to be found among the noblest of the buildings. *That should hereinafter be true also of this country.* Our opportunity to make the necessary provision is, of course, the present time, and in view of the fact that we have over and over again suffered the limitations of want of foresight, it is desirable that we should take care, in our appropriations for school purposes, to satisfy not merely the conditions indicated by our present needs, but that we should look ahead at least one century.

(c) *Soil and drainage.*—The character of the soil is satisfactory, provided it admit of good foundations and thorough drainage, and if the subsoil be such as cannot be injuriously affected by industrial or other establishments.[1]

(d.) *Area of school plot.*—A plot of a minimum of 8 square metres (about 86 square feet) per pupil is exacted by the ordnance of the Swiss Federal Council of 16th April, 1883, concerning the gymnastic teaching to boys of 10 to 15 years of age; this, for a school of say 500, would be a rectangular plot of 200 feet x 215 feet for the gymnastic exercise alone. And this is the *minimum;* outside of this, provision for the school-building and its adjuncts must also be made. Where the school has a kindergarten department, it should have rooms for small classes, and actual gardens to assist the children in nature-study, etc., and for them recreation grounds separated from those of the primary classes.

(e.) *Provision for future school development.*—Provision for the future ought really to be of two kinds, viz., for schools immediately required and their development, and schools that will be needed in the far-distant future. The world-wide estimate of what schools ought to be, is such that future appropriations for school areas should be on a far more liberal scale than in the past; and it would be well to over, rather than under, estimate our future needs. We are certain to be stunted if we neglect this matter. When school areas are to be obtained only through costly resumptions of land that has become valuable, there will be hesitancy as to acquiring a sufficient area.

Assuming that no school ought to have more than 1,000 pupils, we may say that 5 acres may be regarded as an absolutely minimum provision—say a plot of land about 650 feet x 330 feet. This probably would be sufficient whenever the school lands are adjacent to the park lands of the town in which they are situated, and there does not appear to be any reason why the parks should not invariably be contiguous to the school area. On the contrary, such an arrangement is eminently desirable, and it would afford splendid opportunities for the military evolutions of cadets. Where such an arrangement is not possible the school area should be larger. It is quite certain that the generation that makes noble provision in this respect will be recognised in the future as having risen to dignity in its conception of the future educational needs of the State; and the liberal provision will never, and can never, be regretted. In London it has already been keenly realised that the acquirement of extremely valuable sites for school purposes, however costly, is inevitable; and it will not be long before their experience is repeated in Sydney.

9. *Form and dimension of school buildings.*—A.1., ii (a). In few places has the question of the best form for school buildings been so systematically and thoroughly studied as in Switzerland, and, recently, in the United States. There is, however, a very decided consensus of opinion the whole world over, since nearly all the recently-built schools substantially follow the same principles in their construction. This question of form obviously involves a reference to what may be called the class-room requirements of a school.

The past practice of New South Wales of having a row of classes in a very long room is practically unknown, except in England, and, as far as modern schools are concerned, it is abandoned there also. In the opinion of all educationists of recognised authority, *such an arrangement is a very bad one.* Obviously mental concentration on the part of the pupils is made thereby nearly impossible; the teacher cannot get into touch with his pupils as he can in a single room; and the only thing that can be urged in its favour, are *convenience of supervision by a head master, and a poor economy.* The matter may be dismissed, therefore, as not requiring further consideration, for no one would now advocate such an arrangement in a school that was intended to reach a high degree of efficiency[2].

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[1] In the ordinance of 30 December, 1890, for Zurich, it is declared that: "Le bâtiment scolaire doit être . . . éloigné de tout établissement industriel pouvant infecter l'atmosphère ou le sous-sol et dont le voisinage est dangereux au premier chef pour la santé."

[2] See *L'école populaire Suisse*, Genève, 1896, p. 224.

The rooms to be provided in a completely equipped school are the following, and such rooms are found in all modern school buildings where efficient teaching is aimed at, and where that is not sacrificed to economy. The proper shape for building will be considered in section 10:—

1. Each class-group should have a class-room; more than one room, therefore, may be required for the whole of the pupils of one grade.
2. In addition, there should be a large room for manual work for boys.
3. Similarly, a work-room for girls.
4. A large hall for gymnastics.
5. A large hall for general meetings, reunions, etc.
6. A laboratory for physics, astronomy, etc.
7. A laboratory for chemistry.
8. A museum of natural history.
9. A library.
10. A reading-room.
11. If cooking be taught, one or two kitchens will also be required.
12. A pantry and store-room.

For lower-grade schools Nos. 6, 7, and even 8 may be altogether; so also may Nos. 9 and 10 be in the one room.

Such provision as has just been indicated is obviously very different from what has heretofore been thought necessary; this, however, is simply because there has, so far, been no adequate attempt to teach the elements of science, nor to equip the schools of our State in a manner comparable with those of Europe and America.

(b). *Orientation.*—Although orientation is a matter of some importance, school buildings have generally been erected without regard to the cardinal points, their position being decided merely by the street directions, etc.; unfortunately there is not yet absolute agreement among hygienic authorities as to this question. Those of France claim that—for the northern hemisphere, of course,—the principal façade should face to the *north*, that being the only position which avoids the direct rays of the sun, and gives an equal light, while the hygienists of other countries absolutely reject such an orientation. Three important cantons in Switzerland, viz., Berne, Vaud, and St. Gall, expressly prohibit such a position. A *west* orientation—*i.e.*, the façade facing west—is unanimously rejected because of the heat, and of the changing and disagreeable light, and is allowed in only a single canton of Switzerland, viz., Fribourg. The objection to this orientation would of course be the same for the southern hemisphere. An *east* orientation is exacted by Aargau, Berne, and St. Gall, and is interdicted by no canton. A *south* aspect is recommended by no less than ten Swiss cantons, viz., the two Appenzells, Aargau, Berne, Fribourg, Neuchâtel, Thurgau, St. Gall, Vaud, and Zurich. This would correspond to north for this hemisphere. A *south-east* orientation, corresponding to north-east here, is advocated by Koch, a Zurich architect, and is strongly recommended by five cantons, viz., one of the Appenzells, Aargau, Basel-Town, St. Gall, and Zurich. Restating these *for this hemisphere*, these results are:—

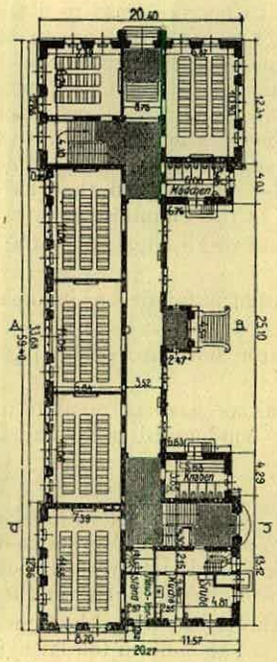
Orientation.	Comments.
South.	Advocated by French, otherwise rejected; sometimes expresssly prohibited.
West.	Rejected by all authorities.
North.	Strongly recommended, except by French authorities.
East.	Permitted; nowhere strongly objected to.
North-east.	Nowhere strongly objected to; sometimes strongly advocated.

Bearing in mind that there is practically great difficulty in adhering to any single position, it is necessary to point out the limits of proper orientation rather than the best position, which after all may be greatly modified by local circumstances, such as the prevailing direction of wind and weather. The advantages of the north, east, and north-east aspects are that, although insolation of the rooms exists, it occurs early in the day, viz., at a time when it is either beneficial or least injurious. The question of the proper orientation of buildings in latitude 35° south, which will therefore apply fairly well, as a mean, to all parts of this State, and of insolation at different times of the day and year, have been treated by one of the Commissioners in connection with the whole theory of city-design.[1] Making use of these results, it would appear that the maximum advantage is obtained with north-east or northerly orientation; and any orientation lying between east and north will be satisfactory for this State.

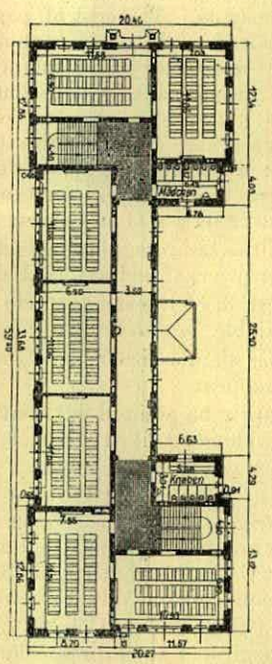
10. *Construction of building, and material &c.*, A. i, ii (c).—It is unnecessary to discuss the question of merely temporary school-buildings, constructed of wood for example, excepting to observe that more attention should be paid to the comfort of pupils, for as much as their educational progress depends very largely on their physical comfort in the school. In regard to the generalities of construction, t may be pointed out that schools should not imitate barracks as regards their form—that is to say, in no case should a large building of many storeys be erected as a school-building. At Basel there is a school of twenty-four, at Aargau one of thirty-six, and at Chaux-de-Fonds, one containing more than forty classes. Such buildings are now deemed too large by the great majority of Swiss authorities. This at once suggests limits as to the number that can be aggregated in a single school-building, a number which has hereinbefore been placed at 1,000. The Genevese Regulation, Art. 5, Sect. 4, that a school-group shall not exceed 500, has already been noted. The one building could, of course, contain more than one group; the idea of separation is for better control and discipline generally. Several types of buildings have much to recommend them, viz., the building round a square courtyard shaped thus, □, of which there are several fine examples in German cities; the ⊓-shaped and ⊓⊓-shaped buildings, of which also there are many fine examples; and finally a long straight building. The first has, of course, two parts necessarily subject to adverse criticism with respect to orientation, and the second and third at east one part; with, however, special utilisation of these parts for other than ordinary class-rooms, the

[1] See Sect. 7. The theory of city-design, by G. H. Knibbs, F.R.A.S., etc., Journ. Royal Society, Vol. XXXV. p. 72–78

the fundamental objections fall through, and all forms can be very satisfactorily employed. In Germany, the interior courtyard is glazed. The form which most strongly commends itself to the Commissioners is, however, the long building with small wings at the end, and a long corridor running along the whole length of the class-rooms, etc. The following plans and view will give some idea of the character of schools suggested. It will be observed that the quantity of light is all that could be wished.



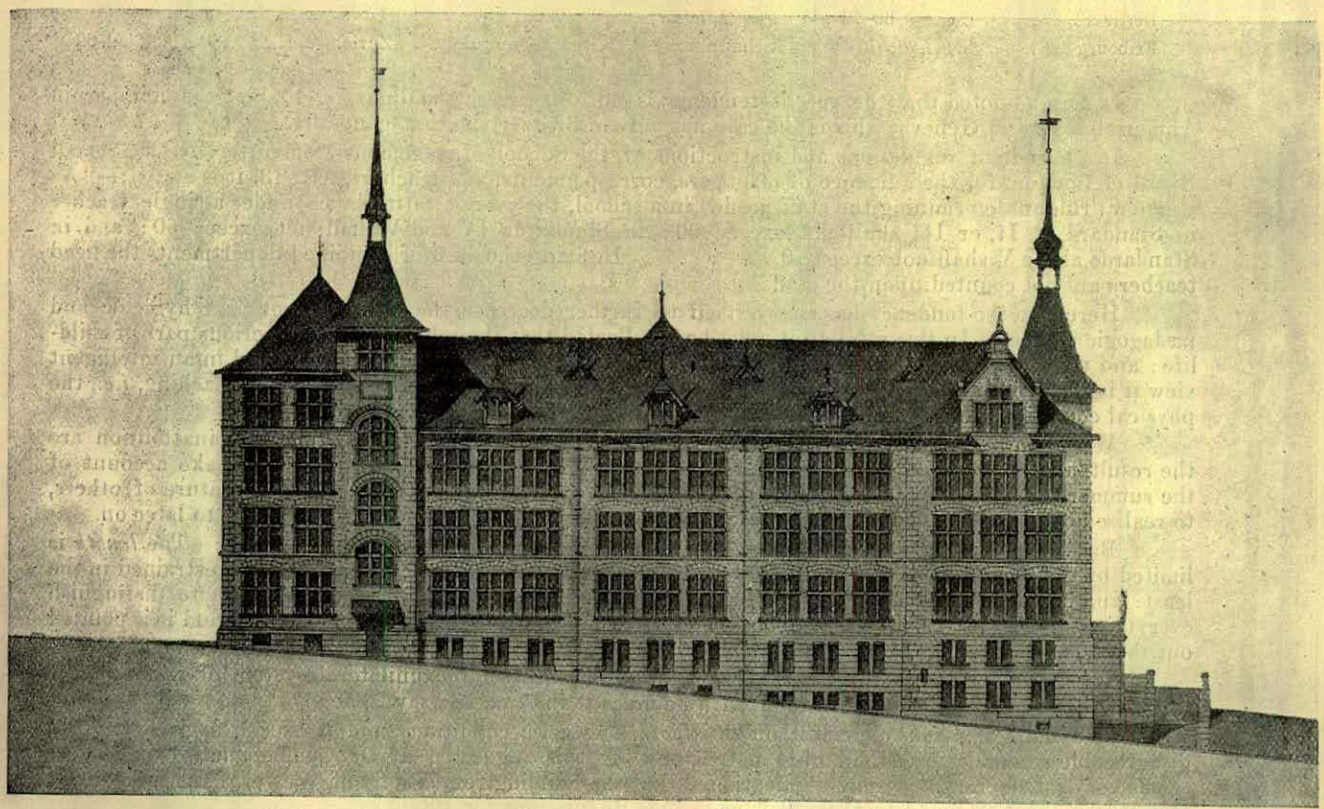
Grundriss des I. Stockes.
1 : 500.
(Plan of 1st floor.)



Grundriss des Erdgeschosses.
1 : 500
(Plan of ground-floor.)

THE PRIMARY SCHOOL AT KLINGENSTRASSE, ZURICH, SWITZERLAND.

Building cost £17,500. Twenty-four rooms.



SOUTH-EAST VIEW OF THE PRIMARY SCHOOL AT THE BÜHL, ZURICH, SWITZERLAND.

Building cost £21,000. Thirty-three rooms. Two other buildings besides the one shown.

11. *Materials used in construction of schools* (c), continued.—In regard to material of construction, it may be stated that *walls* may be of stone or pressed bricks. In some places very permeable materials, as for example, porous bricks, porous stone, etc., are prohibited for sanitary reasons.

The roofing may be tiles or slate, but should not be galvanised iron except for temporary structures.

The flooring ought to be in *seasoned* hardwood. The ordinary system of flooring in this State is the reverse of satisfactory hygienically; *parquetry* alone prevents the entry of dust into the grooves, and admits of really proper cleaning. For corridors, etc., there now exist very fine concretes and cements, closely imitating marble. The cost of parquetry is not felt to be too great in Europe; all the modern schools are so floored. Where it cannot be used, pine, thoroughly saturated on the surface with hot paraffin, is fairly satisfactory and tolerably impermeable, and can be kept clean. With our present consciousness, or rather want of consciousness of hygiene, these matters may appear of light moment: that feeling does not exist in Switzerland, and is rapidly disappearing elsewhere, at least in all places where hygienic researches are made the subject of careful consideration. A point to which attention may again be directed, is that schools kept as they are in Switzerland are *splendid object-lessons in hygiene*, and cannot fail to leave their impress on the people. It may be again noted that hardwood parquetry is prescribed in Art. 22 of the Genevese regulations, see Sec. 4 of this chapter.

Art. 21 of the same regulations, directs the rounding-off of all angles of walls: this is an excellent provision both for internal and external angles.

The suggestion of the same article of a plinth or wainscot in faience, or in one of the very beautiful cements now available, is also an excellent one.

The ceilings should either be of metal or fibrous plaster, both are perfectly safe: the old plaster ceiling should disappear.

It need hardly be pointed out that rough walls such as we have in many of our schools here, and pine floors with wide, dust-filled grooves, would be strongly condemned in Switzerland as inconsistent with good hygiene.

12. *Schoolrooms and their Dimensions.* A 1 (ii) (d).—The dimensions of schoolrooms obviously depend upon the number of pupils that are to be admitted to a class. The practice in regard to this is very variable, but the principle that small classes are to be preferred is universally admitted: it is obvious that a greater amount of individual attention can be given to the pupils whenever the class is small.

Writing in 1898, Dr. A. Combe, an eminent Swiss authority on school hygiene, says:—"In regard to *teaching*, a schoolroom however spacious it may be, ought not to contain too large a number of pupils. To exceed fifty pupils is to exceed the powers of surveillance of the best endowed master.

"In relation to *hygiene*, the number of fifty pupils appears to us also to represent a maximum, for the respiration and perspiration of fifty children rapidly bring about a dearth of oxygen, an excess of carbonic acid, and vitiation of the air. Unfortunately this number is too often exceeded in Swiss schools."

The following table will shew the number allowed in some of the Swiss cantons:—

Appenzell Ext.	40	*Geneva*	40	Schwytz	80
,, Int.	no rule	Glaris	70–60	Soleure	80
Aargau	70	Grisons	no rule	St. Gall	70–80
Basel City	54	Lucerne	70	Thurgau	80
Berne	60–70	*Neuchâtel*	50	*Vaud*	50
Fribourg	70	Schaffhouse	no rule	Zurich	50–60

It may be noted that the recent tendency is not to exceed the limit of 40, viz., the number in Appenzell Ext. and Geneva; this is the case not only in Switzerland, but generally.

In the code of regulations and instructions of the School Management Committee of the School Board of London, for the guidance of managers, correspondents, and teachers, Art. 13, it is stated:—"As a general rule in determining the staff needed in a school, the average attendance under a single teacher in Standard I, II, or III shall not exceed 60; in Standards IV and V shall not exceed 50; and in Standards above V shall not exceed 40. . . . . In fixing the staff of combined departments the head teachers are not counted upon the staff."

Here also the tendency has shewn itself to further decrease the numbers, both for hygienic and pædagogic reasons. In this relation it must be recollected that the school-life is the serious part of child-life; and the future of the individual, and therefore of the nation, depends upon it; and in an intelligent view it is therefore absolutely necessary to secure such conditions as admit of *efficient* teaching, *i.e.*, the physical conditions for the pupil and for the teacher must be favourable.

When classes are large, and the hygienic conditions are indifferent, lassitude and inattention are the result, and both pupils and teachers are in a bad way for progress. One need only take account of the summer temperature and conditions of some of our schools, and of the winter temperature of others, to realise how imperfect is their pædagogic efficiency. This last question will be referred to later on.

Beside the limits for a class above indicated, there are others which may be noted:—The *length* is limited by the vocal conditions; that is, for many hours teaching, the voice ought not to be strained in the least: and it is limited also by the visual power of master and pupil, for it is necessary to distinguish everything that is written on the blackboard. The Swiss limit is 9·50 metres, say 31 feet, and it is pointed out that there is some difficulty in seeing blackboard work at 8·50 metres, say 28 feet.

The *breadth* is limited by the lighting conditions, and with the unilateral system of windows, the lighting is not sufficiently good if the breadth be more than 7 metres, say 23 feet.

The limits of *height* depend upon satisfactory acoustic conditions, and if excessive give rise to a disagreeable resonance. A limit of 4 metres, or 13 feet, is suggested by Dr. Combe, and 13 or 14 feet seems very satisfactory. It may be mentioned that the building regulations of Western Australia direct that the height shall be 14 feet, see B 1, page 114, Regulations for 1900.

There

There exists a considerable diversity in ratio of height, length, and breadth in Swiss schools, as the following table shews—the values are given in metres:—

Canton.	Height.	Length.	Breadth.	Canton.	Height.	Length.	Breadth.
Appenzell Ext.	3·0–3·6	8·4	6·2	Neuchâtel	3·2–4·5	9·0–10·0	6·2–6·5
Aargau	3·5	10·0–11·0 !	8·0–9·0	Schwytz	2·7–4·0	12·0	9·0
Basel City	3·8–4·0	9·6	6·3	Soleure	3·0–3·5	10·0–11·0 !	7·0–8·0
Berne	3·4–3·5	9·0–10·0	6·8	St. Gall	3·3–3·5	10·6–11·5 !	6·8–7·2
Fribourg	2·5	?	?	Thurgau	3·0–3·5	10·0–11·0 !	7·0–8·0
Geneva	3·5–4·0	8·0–11·0 !	6·0–7·0	Vaud	2·8–4·0	7·5–11·0 !	6·0–7·0
Glaris	3·0–4·0	9·0–10·0	7·0–11·0	Zurich	3·5–3·9	9·0–11·0 !	6·0–8·5
Lucerne	2·7	?	?				

The lengths of 11·0 metres (36 feet), or more, is excessive; these are marked "!" on the above table. All recent construction has been in the direction of having higher class-rooms. Soleure alone had in 1873 only 6 schools out of 170, with a height of over 3 metres (10 feet) for its class-rooms; in 1891, it had 64 out of 248; and in 1896, 96 out of 308 schools. Very recent buildings all exemplify the greater heights.

The floor-surface per pupil is a matter to which school hygienists have given some considerable attention. The following table gives in English measure the practice of several countries:—

Floor Surface per Pupil.

Country.	Square feet.	Canton.	Square feet.	Canton.	Square feet.
Prussia, Saxony	6·5	Appenzell Ext.	14·5	Neuchâtel	12·9–14·0
Wurtemberg	6·5	Aargau	12·9	Schwytz	8·1
Hesse, Bavaria	8·6	Basel City	11·8–14·6	Soleure	10·8
Alsace	8·1	Berne	10·8	St. Gall	10·8–14·5
Spain	8·1	Fribourg	18·3	Thurgau	10·8
Baden	9·7	Glaris	8·6–26·9	Vaud	16·1
Austria	12·9	Lucerne	8·6	Zurich	10·8
England	10·0	West Australia	(min.) 11	New South Wales	8·0

Just as the height of modern school-rooms has increased, so also has the floor space. For example, in Soleure, in 1873, only 37 out of 179 schools had more than 16·1 square feet per pupil, in 1891, 91 schools out of 248; and in 1896, 140 out of 308; in percentages these are 21, 37, and 45 per cent.

In a country like ours where the heat is great in summer, and especially where it is also humid, it is desirable to be liberal in our estimate of space per pupil. If now we allow 16 square feet, or 1·5 square metres, that will give agreeable rooms. For example, taking 40 pupils as about the proper number to be aggregated in a single class-room, one obtains say

Area.	Length (from master to back of class).		Breadth (from windows across class).		Height.
660 sq. ft.	30 ft	by	22 ft.	by	14 ft.

This is a ratio very nearly of 3 : 2 : 1, which will at once be recognised as very agreeable; in fact, it would be well, in the Commissioners' opinion, if these simple proportions were adhered to as the ideal proportions of class-rooms. From forty to forty-five pupils could be aggregated in such rooms; and there is no doubt in the Commissioners' minds that *such a number should not be exceeded*, and cannot be exceeded without impairing efficiency. Were it not that the expense of education is thereby greatly increased, still smaller classes would be better; but it is obvious that there is a practical limit, soon reached in any scheme of public instruction. Classes of the size indicated can, with better equipments than those now existing, be made manageable.

Colour of Walls.—In order that the school-room shall be well-lighted, it is necessary that the walls shall be light-toned, but tinted with colour as soft, agreeable, and reposeful as possible to the eye. The following are the colours used in some of the Swiss Cantons, where the matter has received careful consideration. All the colours are oil-colours:—

Canton.	Colour.	Canton.	Colour.
Appenzell	Light-green.	Lucerne	Light tint.
Aargau	Light-blue, or grey.	Neuchâtel	Blue-grey, or sea-green.
Basel-town	Yellow, or light-blue.	Schwytz	Light-blue, or green.
Berne	Pale blue, or yellow.	Soleure	Pale sea-green.
Fribourg	Light-grey.	Thurgau	Various light tints.
Glaris	Light-grey, or white.	Vaud	Pale-grey.
St. Gall	Light tint.	Zurich	Various light colours.

Professor Marc Dufour, of Lausanne, strongly commends pale-grey. Any pale colour is really satisfactory, but pale-green seemed to the Commissioners to be, from every point of view, the best, and to be the most restful colour for the eyes. The paint should be of very good quality, so as to admit of washing, when deemed necessary.

13. *Vestibules, Corridors, Cloak and Hat-rooms, etc.* A 1 ii (e).—Two attractive features of almost all modern schools are the fine vestibules and wide corridors, the latter running along the whole course of the class-rooms. For the width of corridors 10 feet is regarded in many places an absolute minimum; in Basel 13 feet, in Geneva 16·4 feet. The Commissioners recommend 15 feet as a *minimum* for the best grade of schools; this width for corridors is compatible with good hygiene; it should never be less than 10 feet.

Neatly-furnished

Neatly-furnished cloak and hat-rooms are invariably found in modern schools, and the arrangement in this respect is vastly superior in Europe and America to what it is even in the most recent and best-appointed public-schools in this State. Whether these vestiaries be recesses off the corridors, or special rooms, as they generally are, and, as is preferable, they should be so arranged that the cloaks and hats are quite safe, and are not liable to injury; the condition of our State schools generally, as is well known, is not satisfactory in this last respect. The care taken of hats and garments is really part of the people's education, and is not unimportant in establishing them in thrift, in hygiene, and in good behaviour. Good hygiene also demands that the hats, cloaks, etc., shall be kept separate.

14. *Lighting, Natural and Artificial.* A1 ii (f).—The question of the proper *direction* for rays of light to enter a school-room has been very carefully studied. Light coming from windows in front of the pupils is absolutely rejected by all hygienic authorities. It prevents pupils seeing the master and blackboard, etc., properly; it greatly fatigues the eyes, and *such lighting ought never to exist in any school whatever.*

Light from the rear only is equally disagreeable and injurious for the master, and, for the pupil, it projects his own shadow on to his work. High rear windows are not so objectionable, and may, with caution, be used to provide some light where necessary. *This defect of strong light from the rear of the class exists even in our most recently-built schools.*

Light from above is excellent for certain purposes, *e.g.*, for reading, for oral exercises, etc. It is, however, disagreeable for drawing, writing, and similar exercises where the shadow of the pupil's head is thrown, more or less, upon the paper. It gives rise to considerable heat in summer, and, in the few places where snow falls here, it would be occasionally inconvenient in winter. In regard to other directions, authorities are, to some extent, divided. Some advocate—

Unilateral lighting, viz., from one side, the *left* of the pupils.
Bilateral lighting, viz., from both sides, the *right* and *left* of the pupils.
Rectangular, or from two sides, the *left* and *back* of the pupils.
Multilateral lighting, viz., from *all sides*.

Each of these will be discussed.

Unilateral lighting, which, since the right hand is used, must come from the side which does *not* project the shadow of the hand on the paper, viz., the left, has been recommended by Trelat, an eminent hygienist. It is good with very large and high windows, but, in dull weather, rather handicaps pupils remote from the window, *i.e.*, to the right of the class, facing the master.

In *bilateral lighting* it is usual to have a predominance of light from the left, the balance from the right. This has been advocated by Gariel, Javal, and Ferraud, in France, and by Förster and Rembold in Germany. In this system, the objects of the room throw shadows of different intensity, depending on their distance from the two series of windows. This variation of shadow-intensity is said to so solicit the eye; through the play of the two sets of rays, as to develope fatigue, and lead to myopia. For this reason Liebreich, in 1874, rejected bilateral lighting.

Multilateral lighting is arranged with a maximum from the left, less from the right, and a minimum from the rear. It gives a considerable quantity of light, but also several shadows, which are said to be objectionable.

The best form of lighting is undoubtedly that which has herein been called *rectangular*. This gives a considerable quantity of light, and, when the rear-windows are small, and sufficiently elevated, they are not seriously objectionable to the majority of masters. The preponderance of the light coming from the left, and at an angle less inclined to the horizontal than that from the rear, which is more nearly vertical, seems to give, on the whole, the most satisfactory results, and it is found that fewer pupils suffer from myopia in schools so lighted than in those which are unilaterally lighted, other things of course being equal.

For this reason the *rectangular* system should have the first place, the *bilateral* the second place, in the lighting scheme for schools. In the rare instances where the high windows are disagreeable to the master, suitable blinds will overcome the difficulty.

It is obvious that in large schools, as in a long series of class-rooms, unilaterial lighting is often all that is possible for a majority of the rooms.

15. *Quantity of Light*, (f) contd.—The quantity of light admitted depends of course upon the number and size of the windows provided for a room of given dimensions, and the obvious relation which suggests itself is the *proportion of glazed-surface to the floor-area.* As in various countries, however, the floor-area per pupil varies, another relation is suggested, viz., the *glazed-surface per pupil.* Both these relations have been employed; but the former is clearly the better one. The range of the ratio is very large. For example, the area of the glazed-surface being 1, that of the floor-surface for various places is—

Place.	Floor-area.	Place.	Floor-area.
Canton of Vaud	3	Germany	5
,, Fribourg.....	4	Austria.....	4 to 6
,, Geneva, St. Gall	4 to 5	Russia	6
,, Soleure	7 to 8	W. Australia min.....	6·1

In regard to the other measure, it may be noted that it is equally variable. In Vaud, for instance, it ranges from 0·12 to 0·40 square metres per pupil (1·3 to 4·3 square feet). In France, about 0·16 square metres (1·7 square feet) are demanded, and in America about 0·26 (2·8 square feet).

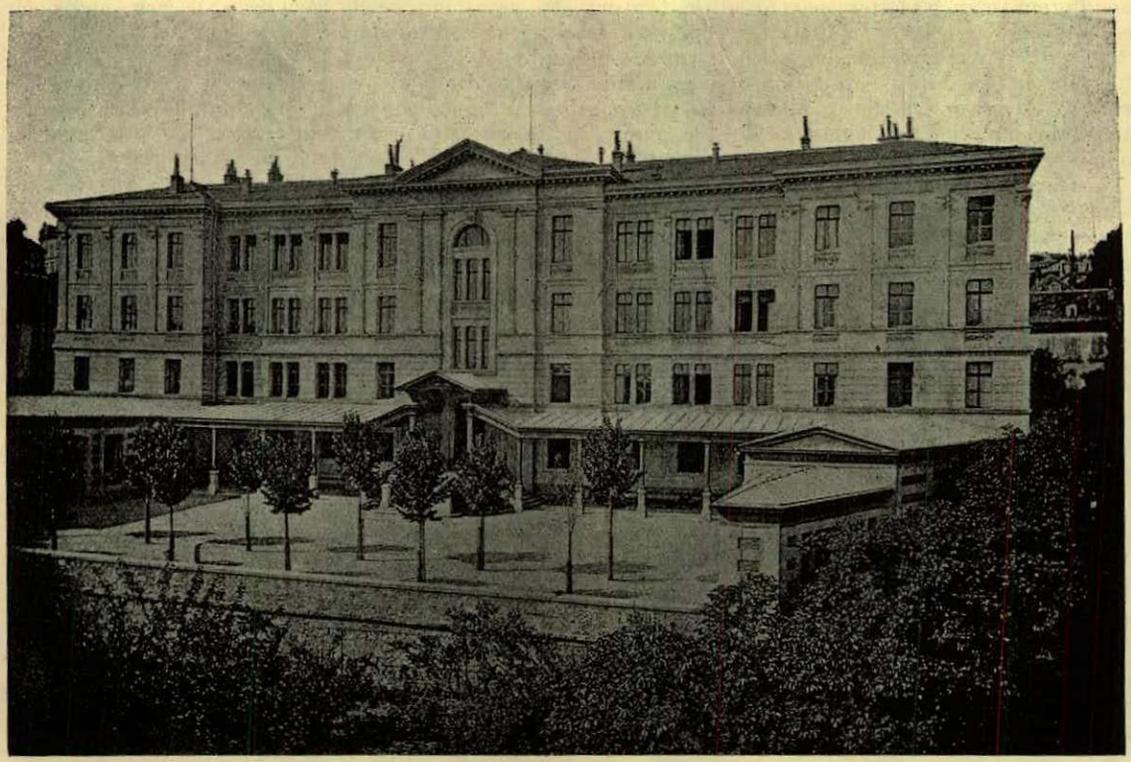
If the dimensions of the school-room (see section 12) be—length, 28 feet; breadth, 21 feet; height, 14 feet—and the number of pupils 42, one will obtain 14 square feet floor-area per pupil, *i.e.*, a square of 3 feet 9 inches side, and of course if necessary two-thirds of the area of the side wall can be pierced for the unilateral light. The appropriation of only one-third, however, for this purpose will, though giving a less ratio than is asked for in the Canton of Vaud, give more than is deemed necessary in America.

It

It is for most purposes undesirable that the light should enter nearly horizontally; it should rather fall at an angle inclined about 35 degrees with the horizontal; hence the *upper part of the windows should be as near as possible to the ceiling.* Swiss practice is to allow a distance from the ceiling of 0·10 to 0·30 metres, *i.e.*, from 4 to 12 inches.

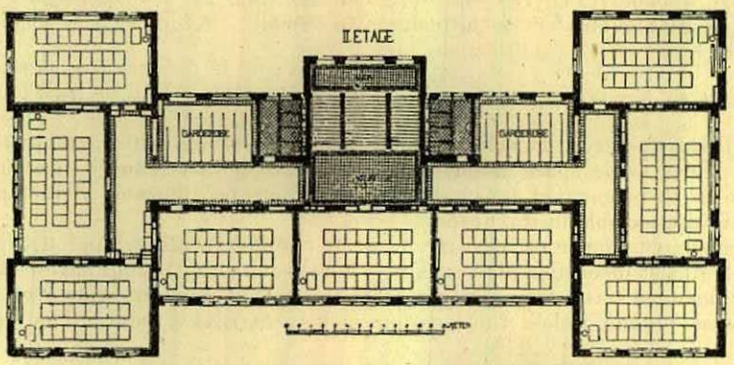
In regard to the *form* of the windows, it may be noted that the full semicircular top, and also the Gothic top, are interdicted in Switzerland; so also are Venetian shutters, and any form of blind that obscures the upper part of the window from which place the light is most valuable. The schools of our State are often defective in this respect.

The *rectangular* form for windows seems to the Commissioners much the best, and there is no doubt that the Swiss schools have a noble appearance, due largely to their simplicity of outline, the absence of meretricious ornament, and the absence also of everything detrimental to their efficiency. A glance for example at the façade of the superior school at the Derrière-Bourg in Lausanne will indicate



ECOLE SUPÉRIEURE COMMUNALE, DERRIÈRE-BOURG, LAUSANNE, SWITZERLAND.

what is meant. *In the Commissioners' judgment no more appropriate style or type of building than the better class of Swiss schools exists.* See the attached plan, which also will give some indication of the lighting of Swiss schools.



Grundriss des II. Stockes.
(Plan of 2nd Floor.)

THE GIRLS' SCHOOL AT THE HIRSCHENGRABEN, ZURICH, SWITZERLAND.

In regard to *artificial lighting*, there is no doubt that the incandescent electric light is hygienically the best. The oxygen-exhaustion by gas-flames, and the combustion-products, are deleterious elements in that and similar forms of lighting.

In some classes of schools only diffused light is suitable. In such cases the light is reflected upward on to the ceiling by a hemispherical reflector, which at the same time cuts off the direct light. This was seen in Sweden, and in America; and for Art-schools an eminent authority in Stockholm—Baron von Cederström—strongly commends it.

16. *Ventilation, Heating, and Cooling.*—A. 1.ii (g) and (h). There can be no doubt that if school rooms are to thoroughly serve their purpose, *the questions of their ventilation, heating, and cooling must receive in this State a greater degree of consideration when school buildings are being constructed than hitherto.* As soon as the air in a room is poor in oxygen, the vitality of pupils is reduced; they become drowsy: so also when heat is excessive. The discomfort moreover in winter, in the colder parts of the State, is sufficiently acute to be not merely disagreeable, but to greatly impair the school-work. Our practice of introducing fire-places as a remedy is wholly unsatisfactory. These various adverse conditions press with exceptional force upon the pupil, for whose benefit of course the school exists; and though he has some relief through his activity, even the master himself is subject to some limitation through them. The school-pupil being subject to the usual discipline, has to endure the discomfort as best he may, to the prejudice of his scholastic-effort, and also to his liking for school. These things of course do not matter, so long as a people believe that education is unimportant, but as soon as it is recognised as a serious factor in our national future, then everything promoting the efficiency of schools stands on quite a different plane. Here again we see the tremendous influence of public intelligence. Europe and America are not as indifferent to such matters as ventilation, heating, etc., as we practically have been and are; and when one compares our schools in these respects with those of the continents mentioned, one can hardly find an appropriate expression which will not appear exaggerated.

To turn first to the question of *ventilation.* In this State we trust largely to mere convection currents. More or less air is allowed to pass in through so-called ventilators, and the variations of gravity through the heating of air by the pupils do the rest. Certainly in the warmer weather the windows are also utilised.

The vitiation of air in inhabited rooms arises from the diffusion of the expired air, the volatile products of skin exhalations, the gaseous emanations of the alimentary canal, and the distribution of dust with its various contents, many of which are by no means innocent of danger. Although the carbon dioxide in air is by no means the most important impurity therein, it is often sufficiently constant in its relation to the real organic poison, the anthropotoxine in expired air, to be taken as a basis of comparison in lieu of this volatile ptomaine itself.

Huscher is said to have shewn that even in one hour the maximum rate of vitiation of the air is attained, and health is menaced. Breiting, who made researches in the schools of Basel, found that the carbon dioxide was quintupled in one hour, and Kranzfeld, that it was tenfold in three hours. It is at once evident that the larger the school-room the better it is for the pupils, and that the *cubic space per pupil* is an important hygienic factor. In some of the Swiss Cantons regulations about this matter exist. The following table will give some idea of the necessary space required:—

CUBIC SPACE PER PUPIL IN SWITZERLAND.

Locality.	Cubic feet.	Locality.	Cubic feet.	Locality.	Cubic feet.
Appenzell Int.	141–171	Geneva	141	St. Gall	106–176
Aargau	148	Glaris	71–238	Thurgau	106–124
Basel (City)	141–212	Neuchâtel	159–198	Vaud	173–212
Berne	141–176	Schwytz	78–106	Zeurich	124–141
Fribourg	150	Soleure	106	New South Wales	100

In actual practice, Soleure, however, is greatly increasing the cubic space, as the following statistics will show:—

Year	1873.	1881.	1896.
Total schools	179	242	308
From 106–141 cubic feet	37=21 %	66=27 %	70=23 %
Above 141 cubic feet	51=28 %	113=47 %	180=58 %

The rule in France is 5 cubic metres, = 176 cubic feet; West Australia is the same. Erismann, an American authority, demands 141–176 for young children, 212–247 for adolescents. The New South Wales requirement of 100 cubic feet is altogether too small. Adopting the school-room suggested hereinbefore, one has:—

Room.	Pupils.	Cubic feet per pupil.
(28 x 21 x 14) ÷	42 =	196

This relation is satisfactory. In schools which are very cold in winter, and at the same time not hot in summer, the above cubic space might occasionally be slightly reduced, inasmuch as it is more difficult to warm a room in proportion to its largeness. The total allowable reduction of cubic space would, however, not be appreciable in this respect.

The most elementary scheme of ventilation is by opening windows and doors, a scheme fairly satisfactory even with almost insensible air currents. Since each class should have 5–10 minutes recreation interval between lessons, it is a fitting opportunity to have all windows wide open. In fine weather this should be *invariably* done, unless the weather is also extremely cold. The practice is general throughout Europe.

In order to overcome the difficulty during wind and rain, and also in cold weather, various schemes have been invented, as for example, movable panels, glass venetians, etc. The latter are glass strips which rotate about their horizontal axis, so that they can all be opened or closed together at will, as much as is requisite. These devices so turn that the current of fresh air is directed against the ceiling, and not directly on the children. In Switzerland mere ventilation gratings are not employed. In some parts of Switzerland ventilating conduits are used for the summer ventilation.

The supply-conduit of pure air from the outside to the class-room for summer is generally arranged so that the entrance of air is at the lower level of the class-room, and the conduits of efflux carry away the vitiated air from near the ceiling.

Summer ventilation can be much improved by fans, driven electrically, by water turbines or otherwise, and also the disagreeable *heat can thereby be much moderated.*

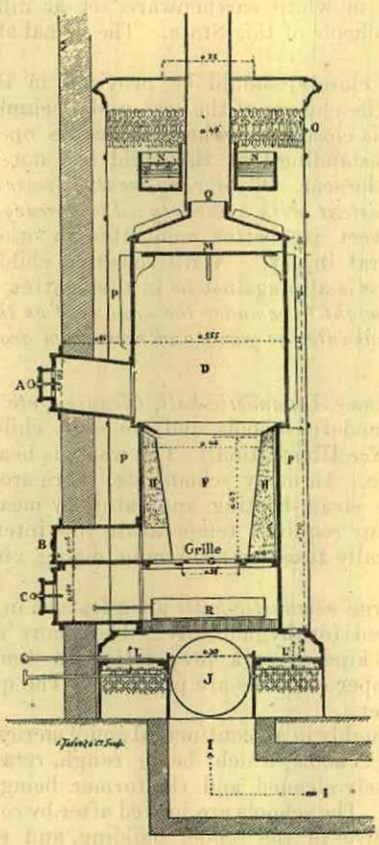
This is a matter which would go far to make the school work in our climate more constant in its pædagogic value.

17.

17. *Heating* (continued).—In cold weather, and particularly in the colder parts of the State, the opening of windows is more or less dangerous for pupils ; and, moreover, when they feel the cold to be unpleasant, their mental concentration is greatly diminished, and as a consequence the school work falls off in pædagogic value. *Winter ventilation* ought then to be different from summer. When children are able to move about, cold is a matter of indifference; when, however, they are kept, as during their school-tasks, physically inactive, this is no longer true. Mental effort involves a withdrawal of the blood from the body generally to maintain the cerebral activity, and therefore the temperature condition should be adjusted artificially, unless one decides to be reckless, both as regards the health of the child and the efficiency of the school, since both are prejudicially affected.

In every cold country where practical pædagogy has systematically availed itself of scientific research, this matter of warming the class-rooms has received attention. The simplest arrangement is *the heating-stove for local heating*, suitable for small schools.

The *ordinary stove* is never used. In the first place, it is dangerous; it borrows its oxygen from the room itself ; it heats the vitiated air of the class-room without introducing pure air ; and it is possible under certain circumstances for deleterious gases to escape into the room. For these reasons, the open fire, and the ordinary cast-iron heating-stove, *ought to be absolutely interdicted*, as it is in Switzerland, and almost everywhere.



SCHOOL STOVE.

A. Charging-door. B. Cleaning-door. C. Ash-door. D. Bell-cover. F. Hearth. G. Grating. H.H. Lining of fire-proof bricks. I. Canal supplying *external* air. J. Valve regulating draught. L.L. Slides regulating the access of air to be heated. N. Reservoir of water for evaporation. O. Openings to allow heated air to escape into room. P.P. Passages where the air is heated. Q. Flue. R. Ashpan.

The proper ventilating-stove heats and supplies to the room only pure air; its radiated heat can never be intense and unpleasant; and the supplied air has a *proper degree of humidity*. This last matter is not unimportant. Rietschel, Falk, Denecke, and many others have shewn that the relative dryness of the heated air occasions to both master and pupil considerable discomfort and weariness, which, however, is not the case when the proper amount of humidity is supplied. The ventilating-stove with mantle is so arranged that it may be supplied with coke, cleaned, and regulated from the corridors. The air-supply is from the outside of the school buildings, and is led in by a suitable conduit; the combustion products do not enter the room, but are carried away in a proper flue ; the apparatus has a water-vessel for giving moisture to the air. (*See* Illustration.)

A somewhat larger apparatus is the faïence-stove, which heats slowly, conserves its heat twice as well as iron, has a conductibility thirty-three times less, and gives up the heat stored therein but slowly, and will give only a moderate heat. Neither of these stoves is dangerous.

Before the opening of the schools, the air is allowed to circulate in the double envelope of the stove, which makes the heating more rapid and economical ; the external air is supplied at the time of entry into the school.

For

For larger schools three methods of central heating are used, one by means of hot water, another by means of hot air, and a third by means of steam. The water method need not be considered. When heated air is used it is supplied to each class-room, and forces out the vitiated air. This method combines heating and ventilation. Where the steam-heaters are used, the heating and ventilation are independent.

In large schools of 500 or more pupils, the installation of heating and ventilating apparatus is very thorough, at least in the greater part of Europe and America. In many places the supply to each room is controlled automatically by a thermostatic contrivance. In many cases the temperature of each room in the school can be ascertained in the furnace-room; every room has its thermometer let into the wall, and can be viewed from the exterior of the room, and in a few cases the heat can be regulated from the room itself.

18. *Lavatories and Latrines.* A 1 (ii) (i).—Modern schools in Switzerland and America, and also in many other places in Europe, are splendidly furnished as regards their lavatories and latrines, and, from the hygienic point of view, are themselves an education in hygiene, and clearly indicate the superiority of their sanitary ideas to our own. Such objects as the tin-dishes seen in Sydney schools are conspicuous by their absence. Generally, the washing basins are white earthenware; sometimes, but rarely, enamelled-ware. The bench is often of marble, and in all cases should be of impermeable material. Wood and porous substances are not hygienic. There should be two basins for each class of forty-two pupils. Clean towels should be *frequently* provided: *the promiscuous use of towels is, however, unhygienic.*

Urinals of the usual kind in white earthenware, set at different heights, are preferable to the slate slabs commonly seen in the schools of this State. The urinal should be practically odourless. Two per class will be sufficient.

Latrines (water and other closets) should be provided in the ratio of two seats for each class. One ingenious system is to make the closure of the seat and opening of the door interdependent, so that when the door is opened the seat is closed, and when the seat is open the door is closed. This prevents entrance to the "cabinet," notwithstanding that the child has not closed the door, and, *vice versa*, the child cannot leave without closing the seat. *The arrangements in some of the schools in this State which admit of no individual privacy are inconsistent with a due regard to decency, and ought to be no longer tolerated.* The evils that it is supposed to avert are better combatted in other ways; and the depressing of the sense of decency is a positive moral injury. With sensitive children it is often physically injurious. The consensus of opinion elsewhere is also against us in this matter.

The lavatories and latrines ought to be under the same roof as the school; with hygienic arrangements this is far preferable to their removal into the yards and recreation grounds.

19. *Douche and Bathing-rooms, Gymnastic-hall, Cleaning, etc.* A 1 ii (j), (k), and (l).—Shower-baths are a feature of very many modern schools, and generally children are compelled to bathe once in a given period, usually a week. (*See* Illustration.) The water is heated by steam in winter, and supplied always at an agreeable temperature. In many schools also there are large and well-appointed swimming baths. These are cemented, have steam-heating apparatus, by means of which steam is passed into the water, so that it can be raised to any required temperature in winter. The baths are provided with the usual paraphernalia for systematically teaching swimming, diving, etc., and are an excellent feature, both hygienically and physically.

Splendidly equipped and large *gymnastic-halls* are a feature in almost all modern schools in Europe and America. These are well cared for hygienically. The floors are sometimes of wood, sometimes of elastic material, as for example, a kind of cork preparation, to diminish the liability of injury through shock, and for special exercises proper cushions are provided. The question of physical culture, however, is referred to more fully hereinafter.

Cleaning is done very thoroughly in all continental and American schools. The walls are not merely kalsomined brick, common in our schools, which, being rough, retains the dust, but are smooth. The floors and furniture are scrupulously cleaned, and the former being generally parquetry, are free from crevices filled with all sorts of dust. The schools are looked after by *concierges*, or caretakers, who generally do their work excellently. They live in the school building, and seem as a rule to strongly identify themselves with its interests. This system is undoubtedly the only way to have the school in the best order, and when schools and grounds are properly kept, there is abundant work for a *concierge*.

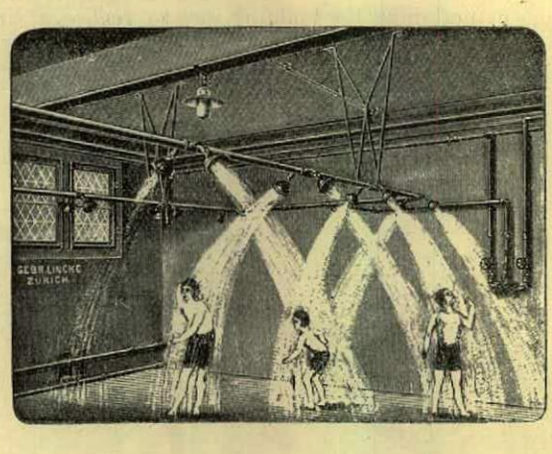
20. *Courts and Yards.* A 1. iii. (*a*). As already stated, the recreation yards are calculated in Geneva at the rate of at least 4 square metres, say 43 sq. feet per pupil. All school hygienists are agreed as to the great importance of places for games and recreation generally, and in Switzerland generally 8 square metres, that is, double the above quantity is now fixed, as the normal allowance per pupil. The Canton of Aargau requires this amount; so also does the Canton of Schwytz, but the latter for boys only. A rather curious fact in Switzerland is that it is in the country parts where the land is cheapest that the school yards are generally smallest. The Swiss idea, we see, therefore, is to devote a plot of from, say, about 200 feet each way to about 300 feet each way, as a recreation ground for 1,000 pupils. This seems little enough.

21. *Gardens and Shade-trees, etc.*—(*b.*) School gardens are absolutely required for properly developed kindergartens, and much interesting material for instruction, and many things to excite the powers of observation, are in this way immediately to hand. *Nature-study* can commence in this way at the earliest age. These gardens would be attended to by the caretaker. In summer, in this State, shade trees are almost a necessity, and it is possible to have a large part of a playground so completely covered, that the whole of the ordinary play may take place in the shade. Where there is no one to look after school grounds, deciduous trees are troublesome, but where the school grounds are taken care of, the objection fails, and the deciduous trees have the advantage that they allow the inroad of sunlight in winter. A splendid example was seen of this method of dealing with part of a recreation yard at the k.k. Friedrich's Gymnasium, near the Zoologischer Garten, at Frankfort. The plane-trees (*Platanus orientalis*) are trained with an upright stem for about 10 feet, and then all branches are trained horizontally

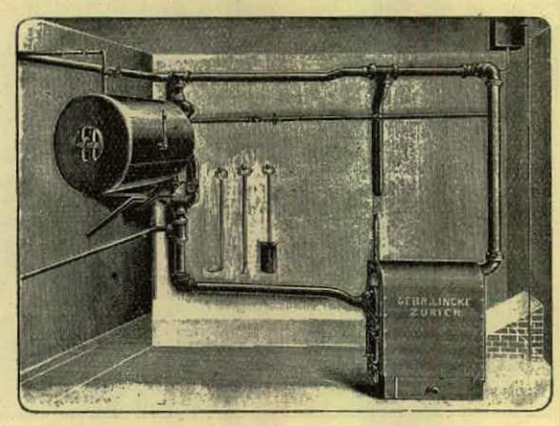
horizontally so as to form a horizontal stratum of foliage, constituting a perfect shade in the summer months,[1] but, since the trees are bare in winter, allowing also the full play of sunlight when it is really needed, viz., in the winter months. Such recreation grounds stand in startling contrast to some of our own; but, here and there, this State has plots connected with its schools that could easily be made *excellent*. In the Commissioners' opinion, an insufficient use is made of shade trees in our recreation grounds.

If small gardens were made a feature of every school ground, opportunities for object-lesson teaching, for nature study, and for the study of natural history are afforded. This, however, is treated elsewhere.

22. (*c.*) *Provision for Physical Exercise, and wet weather, etc.*—In appropriating land in the future for schools, it will be well to remember that large areas give far better opportunity for physical exercise, gymnastic and military drill, and free games; and to realise also that in order to secure the greatest advantage, provision must be made for wet weather. In this climate, the latter need be but moderate,



School Shower-bath.



Boiler, etc., for the School Shower-bath.

SCHOOL AT THE BÜHL, ZURICH, SWITZERLAND.

since we have so large an amount of fine weather; still, it should exist, and, therefore, a part of every play ground should be covered in. It is well also, in school grounds of anything like normal size, that part should form lawn, part should be asphalted, and part may be of such earth as will form a good surface, and not become hard, so that a sufficient variety of play may be possible, and the pupils regard the conditions of school life as among the most agreeable in their existence. This is a state of things which, though too little realised here, is realised in many parts of Europe and America, and, perhaps especially, in Switzerland.

For kindergarten plots, the only asphalted parts should be the walks or paths; lawn and garden should be the chief features, and the little ones may then play with much more safety.

All these things help to reinforce the rural power of the school, and when it is agreeably situated, properly orientated, and has suitable recreation grounds, child-life will stand in a better way of profiting by what the school has to bestow. 23.

[1] One is reminded of the Groves of Academus.

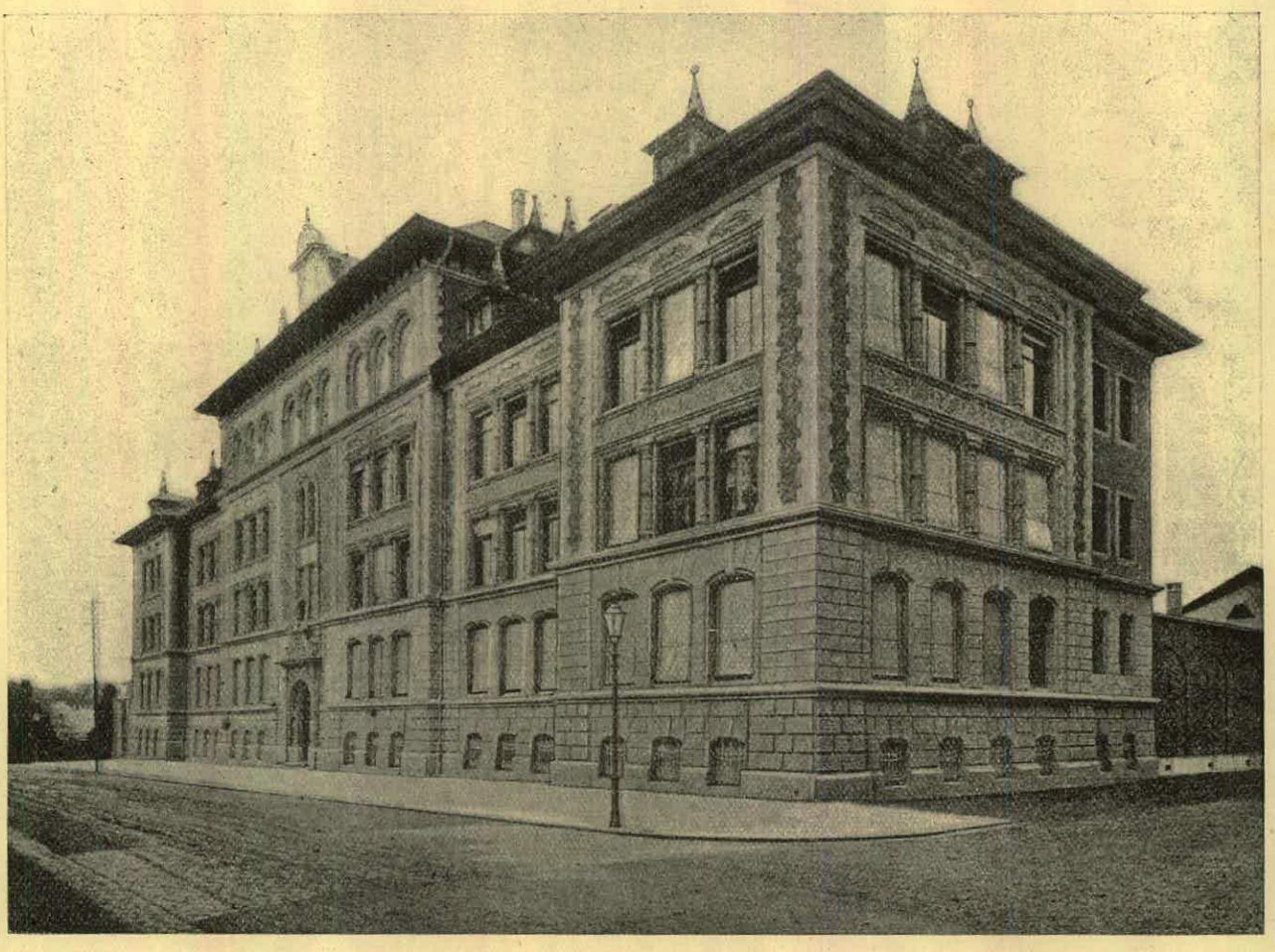
23. *Illustrations of School Buildings.*—Swiss schools, and, in general, modern European and American schools, are so incomparably superior even to the most recently-constructed schools here, that to get any real idea of them photographs are necessary. For that reason, representations of several schools, with some descriptions underwritten, are here added.

Drawings of their ground plans are also essential to illustrate the proper methods of school-building. It is impossible to visit even one of our most *modern* schools without feeling how much we have to learn, and how deplorable it is that the school-building is not in accord with the results of systematic study of the question, in the light of modern pædiatry.

A drawing of a suitable warming-stove has previously been given. Complete drawings of a school, and of proper heating and ventilating apparatus, are, perhaps, a little outside the scope of the report.

A systematic statement of the Commissioners' conclusions will be set out at the end of Chapter XLIX, hereinafter.

24. *Girls' School at Monbijou, Berne, Switzerland.*—The fine building in the illustration hereunder is the finest Girls' School in Berne. Its site was chosen with regard to quiet, and it is agreeably situated with regard to general surroundings. The length of the building is *north and south*, so that for most of the rooms light is received from the *east* side. The two rooms for *drawing* are lighted by windows on the *north*. The principal aim in designing the building was to realise a simple, bright, and convenient



GIRLS' SCHOOL, MONBIJOU, BERNE, SWITZERLAND.

Cost, £34,600. Rooms designed to seat thirty-six pupils only.

disposition of the class-rooms, access to which is had by a fine corridor running longitudinally along the building. In general appearance the schoolhouse was intended to express a noble simplicity, such as would make it serve as a means of æsthetic education (doch als ästhetisches Erziehungsmittel wirken). The ventilating and heating arrangements are very perfect, and the whole place is kept scrupulously clean. The dimensions of the rooms in metres[1] are:—

Rooms.	Floor Area.	Cubic Space.	Cubic Space per Pupil.
6·60 x 9·75 x 3·6	= 64·35 square metres	= 231·66 cubic metres	6·43
7·20 x 8·90 x 3·6	= 64·08 ,, ,,	= 230·68 ,, ,,	6·40
8·70 x 7·80 x 3·6	= 67·86 ,, ,,	= 244·29 ,, ,,	6·78

Each room is designed for thirty-six pupils, and is lighted by three windows (1·60 x 2·70 = 4·32) x 3 = 12·96 square metres—the ratio to floor space being therefore 1 : 5. The

[1] Add about 10 % to the measurement in *metres* and the result will be *yards*.

The rooms for *drawing* are, in dimensions, 11·58 x 8·63 = 99·93 square metres, and have four rooms on the north side (1·90 x 2·70 = 5·13) x 4 = 20·52 square metres—the ratio to floor space being about the same as before (1 : 4·87).

The *furniture* in the rooms for drawing consisted of eighteen double drawing-tables with movable seats, three model-tables, large presses, two large glazed presses for plaster models, etc.

The laboratory for practical instruction in Physics and Chemistry is very finely equipped both as regards convenience for laboratory practice and in respect of apparatus.

The *natural history* room is equally well developed, and has a fine and well-supplied museum.

In the *school-kitchen* are gas, and wood and coal stoves, so that the pupils may learn both methods of cooking. The equipment is very complete.

There is also a *laundry*, and close thereto an *ironing* room, with gas-heaters for the flat-irons.

The *bathroom* has ten closed cabinets of 2·20 metres high; by pulling a chain one gets a shower-bath—the temperature of which can be adjusted as required.

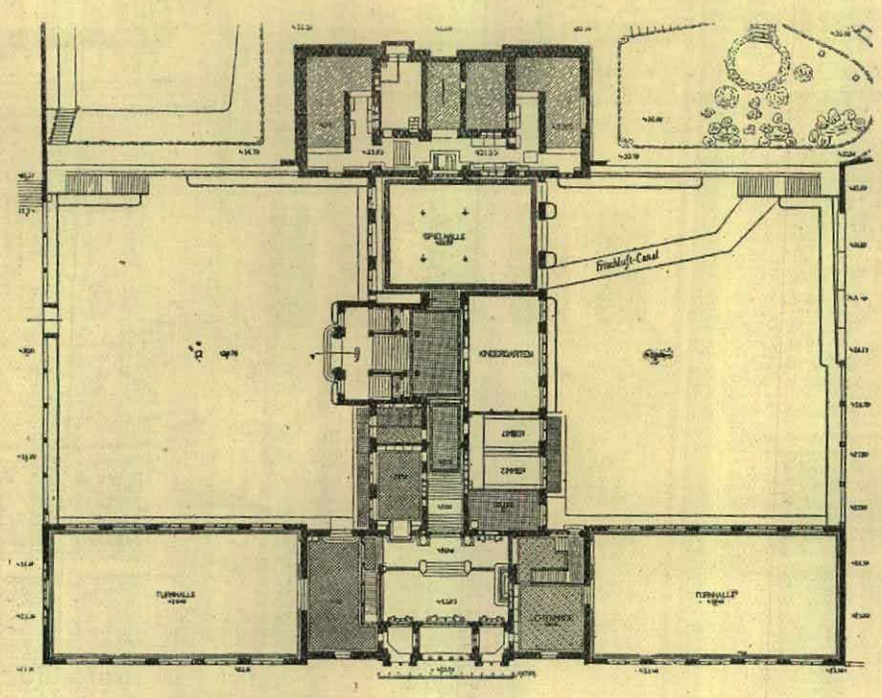
The *dressing*, *toilet-rooms*, *vestiaries* (cloak-rooms), etc., are all excellently arranged.

Near the kitchen is a comfortable *dining-room*.

The school has a large asphalted play-room (Spielhalle), the dimensions of which are in metres:—10 x 30 x 5 = 300 square metres = 1,500 cubic metres, and a *gymnastic-hall* (Turnhalle)—14 x 28 x 8·50 = 392 00 square metres = 3,332 cubic metres.

In the basement there is a *boiler and heating-room*, and the *fuel-room* belonging thereto, and under half of the gymnastic-hall, a store-room.

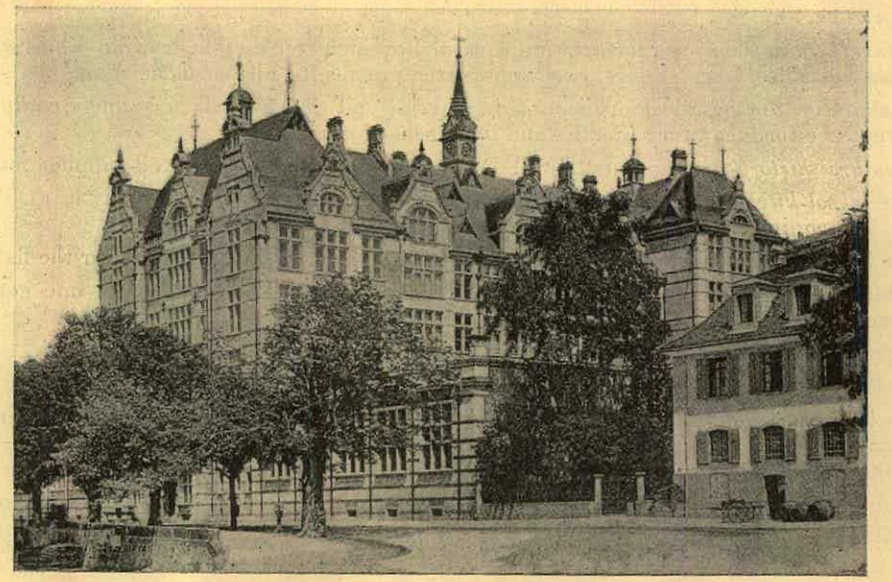
25. *The Girls' School at the Hirschengraben, Zurich.*—The finest school-house in Zurich is the Girls' School at the Hirschengraben. It was erected in 1893 at a cost of about £32,800; the ground plan being shewn in the illustration hereunder. In selecting the site the conditions previously outlined, viz., in section 8, were attended to. The building contains twenty-three class-rooms, three work-rooms, a room for drawing, a large and beautifully designed conference hall, a chemical laboratory, a museum, a



THE GIRLS' SCHOOL AT THE HIRSCHENGRABEN, ZURICH, SWITZERLAND.

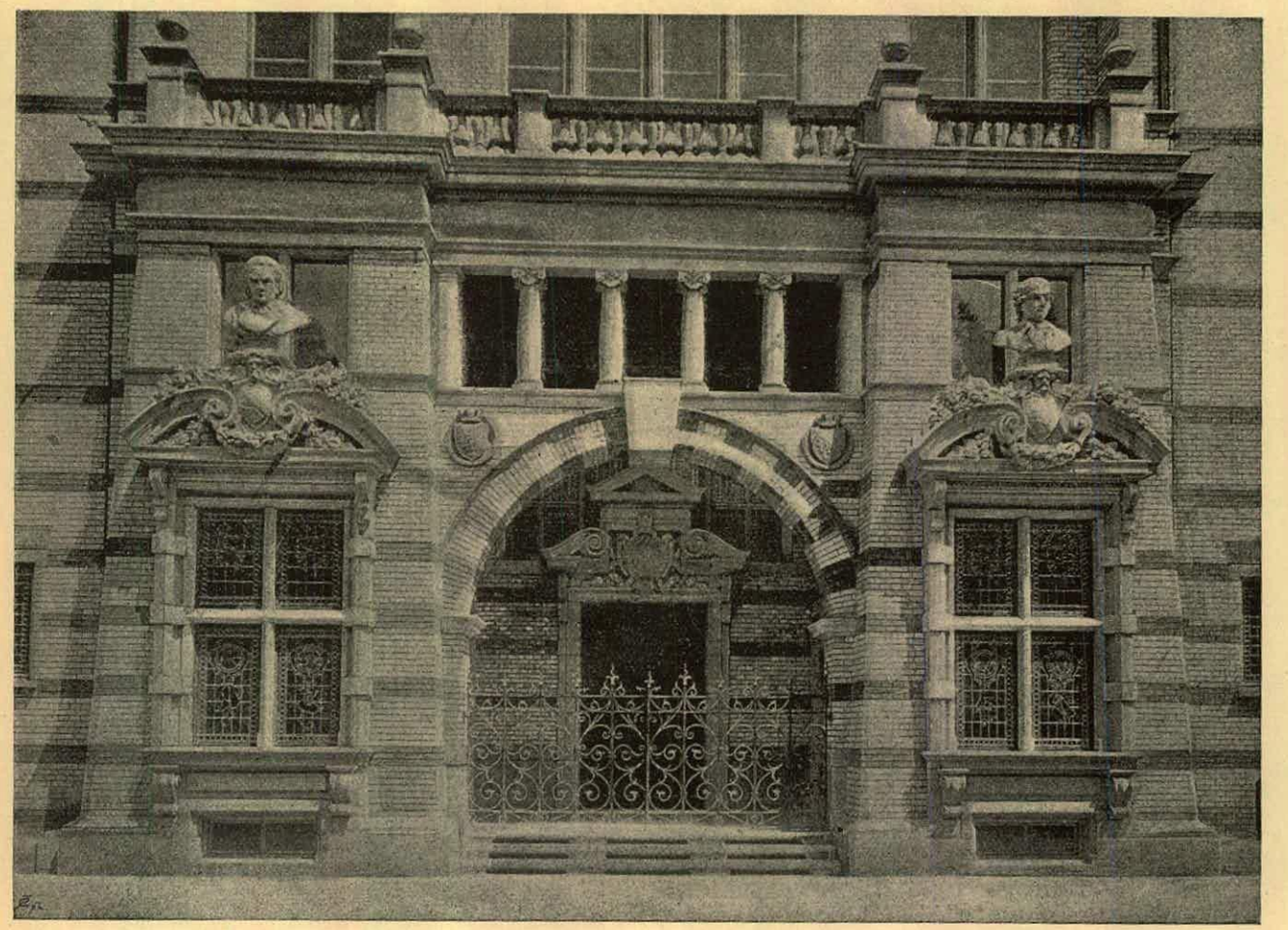
Ground Plan, etc.

library, two children's rooms, two teachers' rooms, a large bathroom, a large play-room, two very fine gymnastic halls, and the caretaker's residence. The cost of the gymnastic hall was about 17s. 6d. per cubic metre, or, say, 6d. per cubic foot. The entrances are very handsome—the chief entrance being from the Hirschengraben, and the other from the north-west playground.



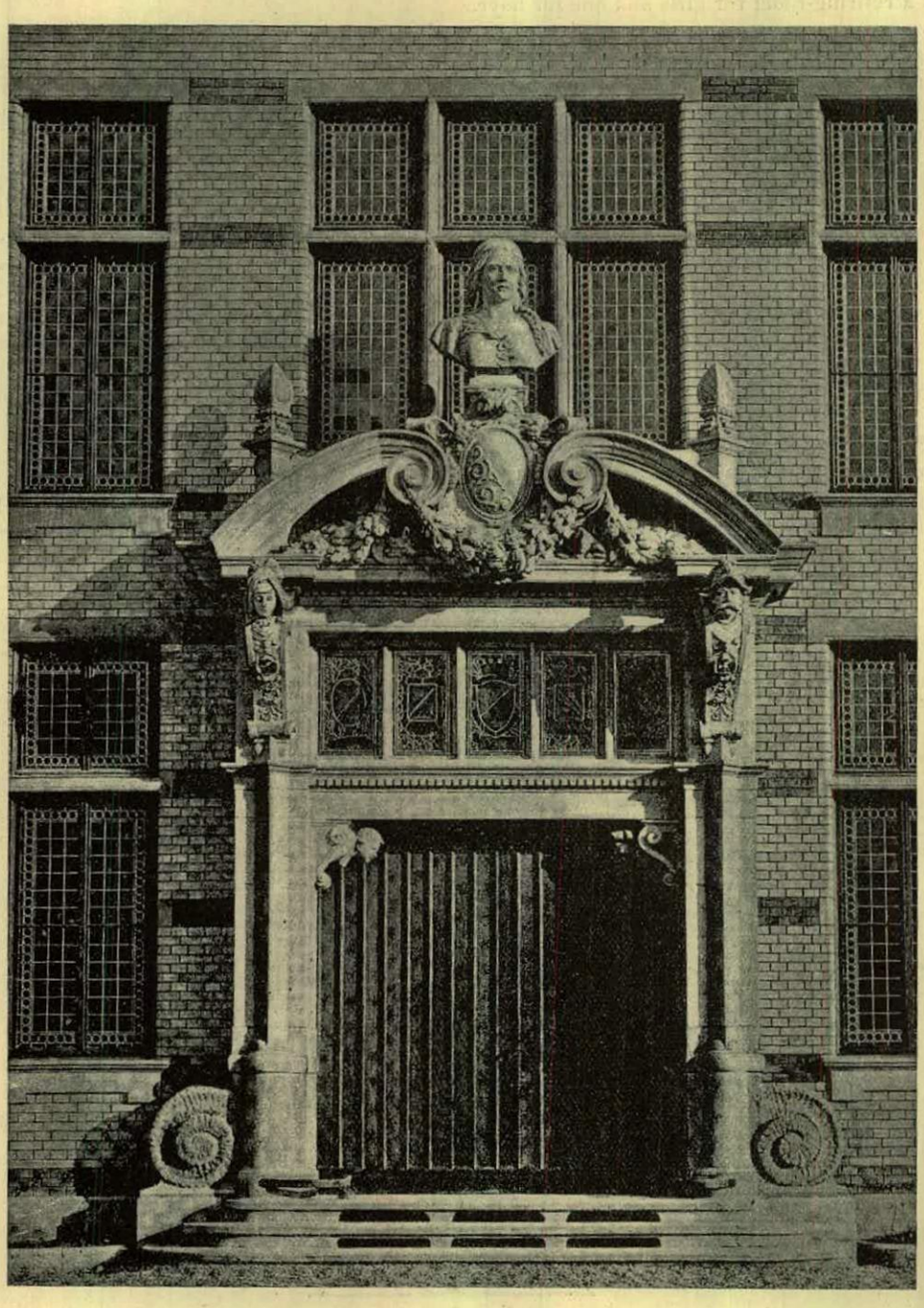
Südost-Ansicht.

DAS MÄDCHENSCHULHAUS AM HIRSCHENGRABEN.



MAIN ENTRANCE TO GIRLS' SCHOOL AT THE HIRSCHENGRABEN, ZURICH, SWITZERLAND.

Cost of Building, £32,800. Rooms, 33. No Fees are paid by Scholars.



GIRLS' SCHOOL AT THE HIRSCHENGRABEN, ZURICH.

Entrance at the North-west Playground.

27. *Primary School at the Bühl, Zurich.*—The view shewn in section 10 is the south-east view of the primary school at the Bühl in Zurich, erected at a cost of £21,200. Here there exist, on the one plot, a primary school and a secondary school, separated by a large gymnastic building.

The primary-school building has twenty-three class-rooms, three work-rooms, a school workshop for carpentry and joinery, etc., a modelling-room, a school kitchen, a museum, a teacher's-room, a bathing-room, a caretaker's residence.

The adjoining secondary school has eighteen class-rooms, two rooms for drawing, a work-room, a hall for singing, etc., a museum, a teacher's-room, a bathing-room, a caretaker's dwelling.

The Gymnastic building contains two gymnastic halls, two class-rooms, two work-rooms, and for each hall a retiring-room for girls and one for boys.

28. *König Wilhelms-Realschule, Stuttgart.*—The Realschule (real school) of Stuttgart is an example of a school built in a somewhat confined and awkward area. It has eighteen class-rooms for the lower and five for the upper division, a festal hall, four rooms for drawing, one room for physics and one for chemistry, and so on, and also a gymnastic hall. These are distributed as follows:—

Basement.—Caretaker's-room and dwelling, professor's work-room and library, two library-rooms, a general room, a lavatory.

Ground floor.—Eight school-rooms, one room for drawing, one teacher's-room.

First floor.—Eight school-rooms, one room for drawing, one rector's-room with registrar's-room, one assistant's-room, one teachers'-room.

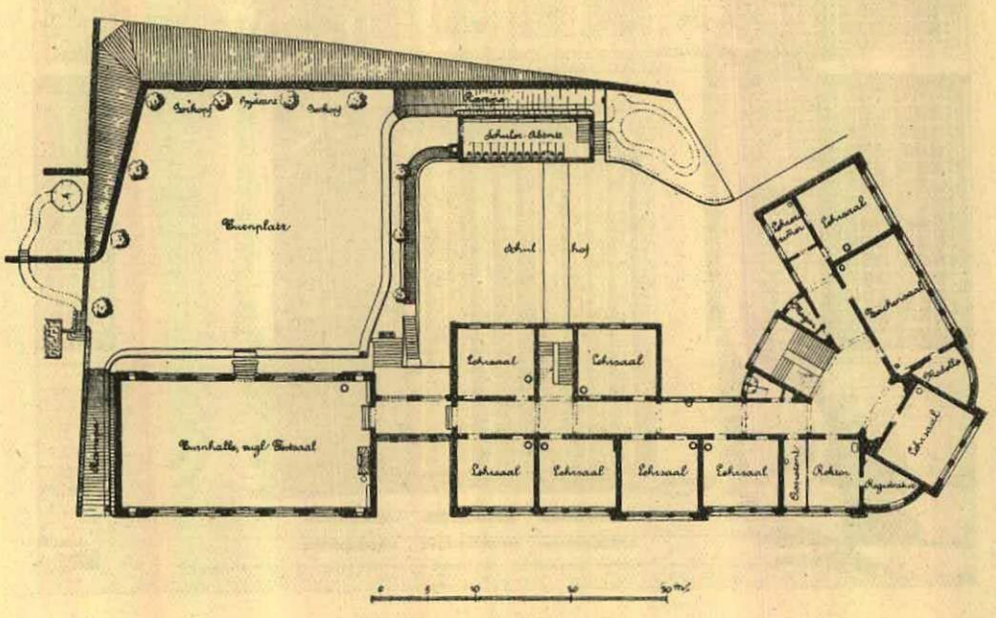
Second floor.—Five school-rooms, one room for drawing, one conference-room, one chart and map room, one lecture-room for physics and chemistry, with apparatus cabinet on one side, and on the other a chemical laboratory.

Third floor.—One music-hall, one apparatus-room for scientific material, one room for models, etc.

These rooms are 4·5 metres high.

The gymnastic-hall is 26 x 13 x 7·40 metres.

The *heating* of the building was the first experiment in gas-heating. The Karlsruhe school gas-heater, with self-acting regulator (Boehm system) was used. Each school-room has one heater, the rooms for drawing, music, and physics, two each. The rector's and assistants' rooms are furnished with gas-heaters in the form of fire-places.



Massstab, 1:750.

FIRST FLOOR—KING WILLIAM'S REAL-SCHOOL, STUTTGART, WURTEMBERG.

Ventilation.—The air is always filtered, entering ordinarily, or in passing to the gas-heater during the winter period.

Lighting.—Each school-room has two arc-lamps for *indirect* lighting. The gymnasium has two large arc-lamps. Besides these, the rector's and some other rooms have incandescent electric light.

The whole cost was about £25,850.

29.

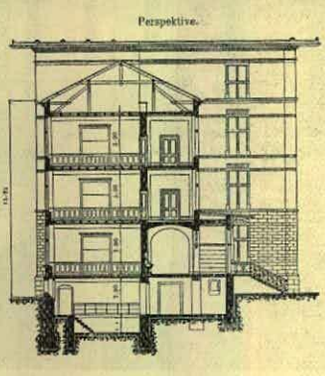
29. *A Swiss School Kitchen.*—The illustration hereunder represents the school-kitchen in a school at Wolfbach, Zurich, Switzerland. It is fairly representative of the modern equipment of a Swiss school, for the teaching of one branch of domestic economy. Much the same thing was seen in Holland, the equipments in Amsterdam and the Hague being very complete. In many places there are both gas and ordinary stoves.

30. *A Belgian Normal School.*—The Etablissement des Ursulines, Wavre Notre Dame, near Malines, Belgium, shewn in the following illustrations, is a normal and middle school for girls, having accommodation in all for about 1,000 boarders.

Fig. 1 represents one of its chapels. Figs. 2 and 3 are two views of its splendidly equipped science apparatus room, and museum of natural history. In Fig. 3 one may notice the "tellurium" and "planetarium," telescopes, phonographs, camera, etc., besides a large quantity of physical apparatus. Fig. 4 is a "dortoir" (dormitory) on the Belgian system. Fig. 5, the toilet-room. Fig. 6, the kitchen and its very complete equipment, where it may be mentioned the walls are covered with white glass tiles, it having been found that, when cleaning is taken into account, they are the most economical.

The refectory tables are white plate-glass and white marble. In future, all additions will be white glass.

All floors are in parquetry as in Switzerland, waxed, and scrupulously clean; and all walls are varnished.



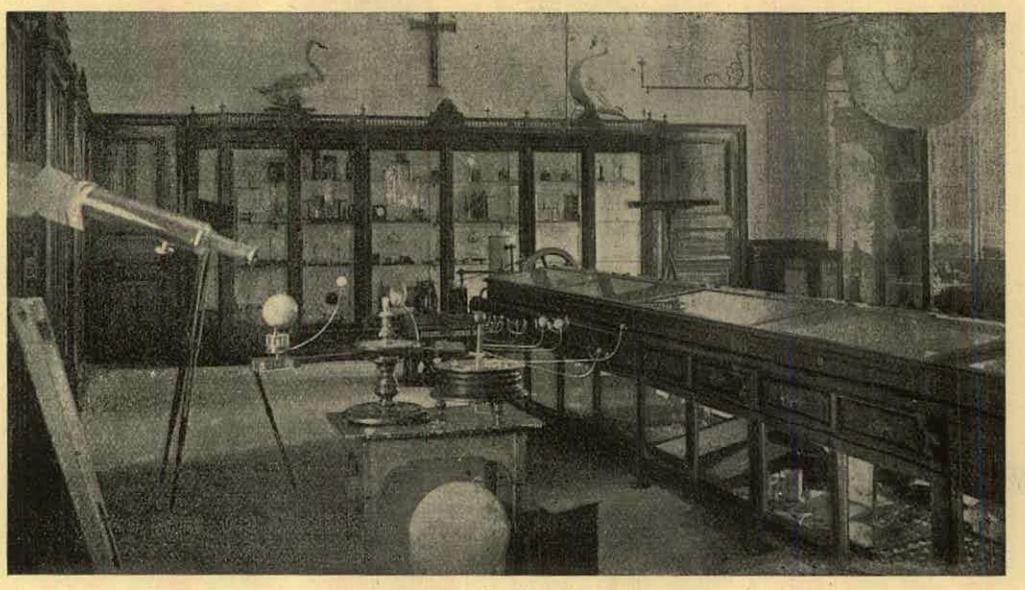
Schnitt. 1:600.

DAS PRIMARSCHULHAUS AN DER KLINGENSTRASSE.

THE PRIMARY SCHOOL AT KLINGENSTRASSE, ZURICH, SWITZERLAND.

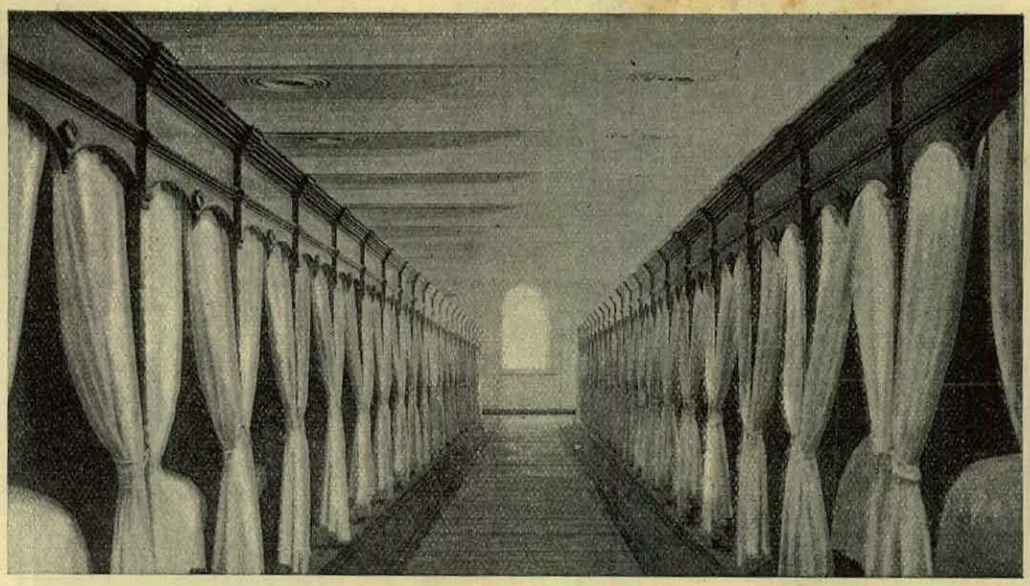
(1) Chapel.

(2) Science Apparatus-room.

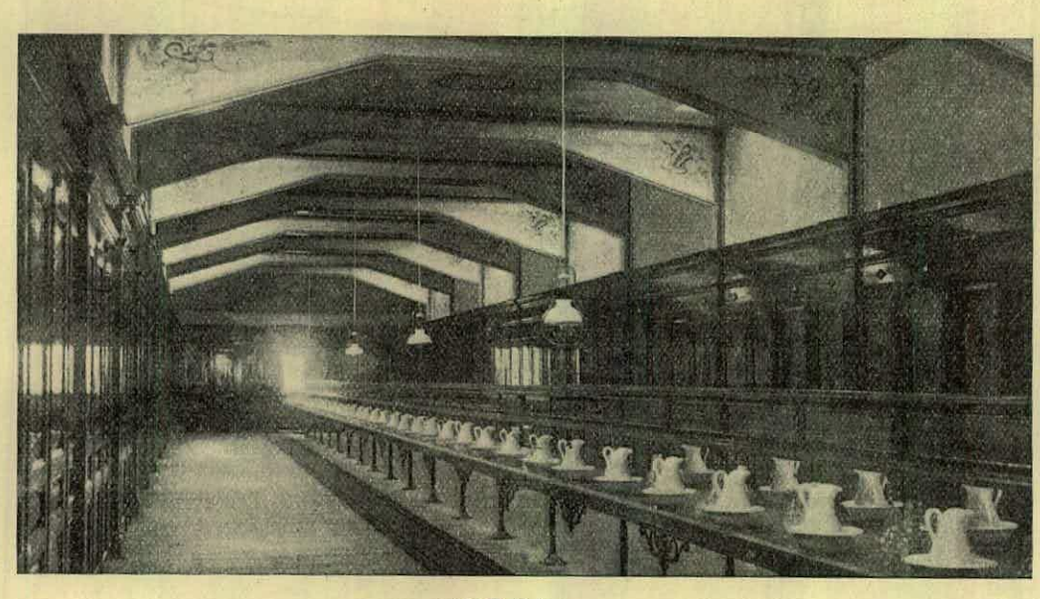


(3) Science Apparatus-room.

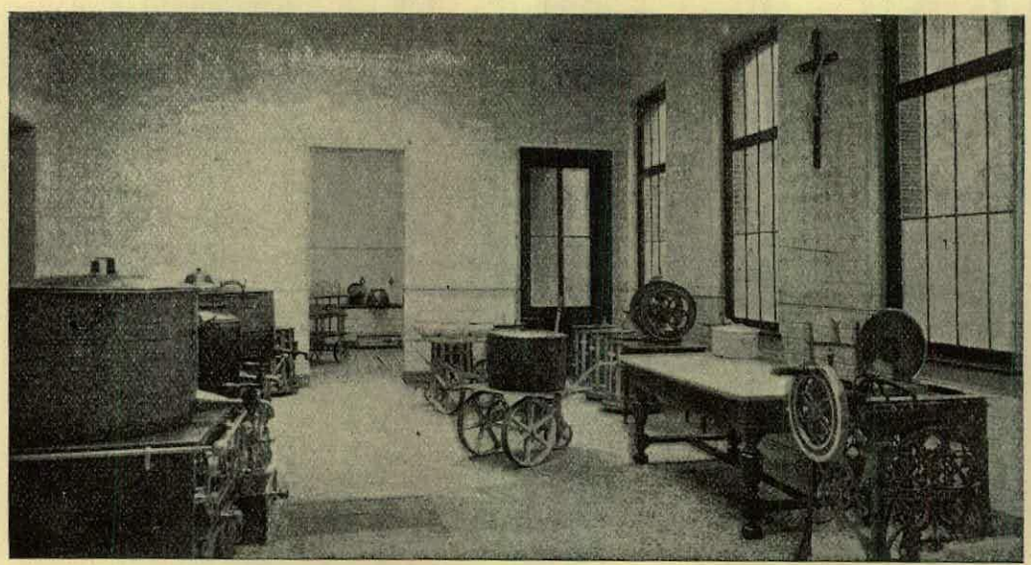
ETABLISSEMENT DES URSULINES, WAVRE NOTRE DAME, NEAR MALINES, BELGIUM.



(4) Dormitory.



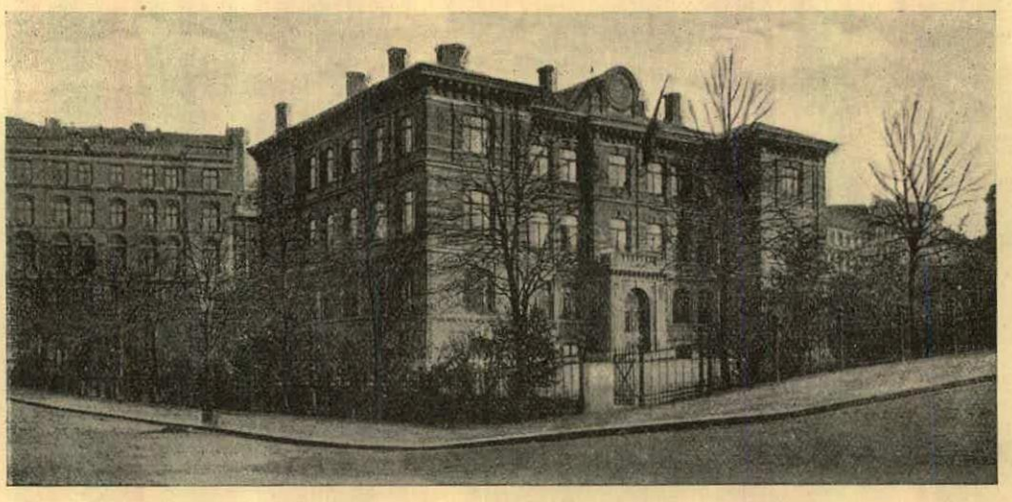
(5) Toilet-room.



(6) Kitchen.

ETABLISSEMENT DES URSULINES, WAVRE NOTRE DAME, NEAR MALINES, BELGIUM.

31. *Elementary Girls' School in Sweden.*—The illustration hereunder is that of an elementary school for girls at Gothenberg, in Sweden. The folk-schools of Sweden are noble buildings, and in their general design and internal arrangement are not dissimilar to the Swiss. The modern buildings are particularly fine.



ELEMENTARLÄROVERKET FÖR FLICKOR GÖTEBORG.

CHAPTER XLVIII.

CHAPTER XLVIII.

School Furniture and its Hygienic Importance.

[G. H. KNIBBS.]

1. *Introduction.*—The furnishing of a school may be considered in two distinct relations, viz., the pædagogical and the hygienic. It has, however, been already seen that pædiatry and pædagogy are really so inter-dependent that there will be some advantage in passing freely from either aspect of any question considered to the other, This must excuse all alternation between pædagogy and hygiene in this chapter.

For a great many years past a degree of attention has been given to the matter in Europe, and especially in Switzerland, such as places all other parts of the world under very great obligations for the thorough manner in which the pædiatrical researches have been carried out. A little later, it will be necessary to more fully refer to them.

Proceeding consistently with the order indicated in the sketch of the subject-matter of school hygiene, it becomes necessary in referring to *school furniture* to deal first with the so-called "black-board." In passing, it may be said that, inasmuch as the purely pædagogical aspect of school equipment has already been considered, the present discussion will, in the main, be hygienic.

2. *School black-boards*, A 2 1 (*a*).—In order that the pupil's eyes may be in no way fatigued, the black-boards used in school should invariably be *dull black*, and they should be so lighted and arranged as to avoid all troublesome reflection. In some schools strong artificial light is projected by means of a reflector on to the board in dull weather, the direct light being screened from the eyes of the pupil by the reflector itself. It will be remembered that in Article 32 of the Geneva Regulations (*see* Section 4 of the preceding chapter), it is prescribed that the black-boards should be of *slate*. The slate is undoubtedly preferable to wood, both from the point of view of convenience and hygiene. The best material, however: is *ground-glass* with a black backing.[1] Writing on the ground-glass is very much easier, faster, better, and the glass is also better for hygienic reasons. A convenient accessory is an endless band of "*toile ardoisée*," a sort of black cloth on which one can write as freely as on slate. This passes over two rollers and has some advantages, especially for secondary instruction. In America a green writing-board was seen.

3. *The History and Theory of School-seating* (*b*).—The desks and seats commonly seen in the public schools of this State—and this applies to the equipments of schools recently built quite as much as to old schools—are an anachronism. *They imply an absolute disregard of the progress that has been made in the serious study of the whole matter, and their replacement by proper furniture is very desirable*, in connection with a thorough overhaul of all schools, and their rearrangement with regard, as far as possible, to the demands of hygiene.

Some account of the progress made in this subject is necessary, in order to arrive at a definite understanding of our position in relation thereto.

In 1841, Henry Barnard, of America, published a memoir upon "School Architecture," in which he shewed the inconvenience and injuriousness of badly-designed school furniture. Later, Dr. Fahrner, of Zurich, viz., in 1863, attracted public attention in Europe to the same question, and it is to the influence of Fahrner, perhaps even more than to that of Barnard, that recent progress is due.

School-desks, systematically considered, ought, as far as pædagogy is concerned, to answer to the following requirements:—

(1.) They should be so arranged as to allow each child to take his place without disturbing other children.
(2.) Their manipulation and alteration ought to be noiseless, and without danger to the child's fingers, etc.
(3.) They should be provided with places for books, note-books, ink, pencils, etc.
(4.) They ought to admit of easy supervision by the master.

From the hygienic point of view, the conditions to be satisfied are:—

(5.) They ought to enable the pupil during writing, drawing, etc., or during rest, to take up a position which is normal as regards his vertebral column, and as regards the distance of the eye from the paper.
(6.) They ought to be proportioned to suit the bodies of the children that occupy them.
(7.) They ought to be made without sharp edges, or points which could wound the child.

From the standpoint of convenience, etc., they ought to be:—

(8.) Light, movable, so as to admit of easy shifting from place to place, and so as to facilitate sweeping and cleaning.
(9.) They ought to be simple, firm, compact, cheap.

One of the most important of these conditions is what may be called the *anatomical*, and for the following sketch in regard thereto we are indebted to Dr. A. Combe's paragraph on "Les conditions anatomiques de la position assise," which freely translated is as follows:—

In the sitting position, the body, sustained by the vertebral column, rests upon the two ischia. The ischium having very nearly the form of the stave of a cask, it follows that the human being when sitting may be well compared to a rocking-horse—that is to say, it is in a position of unstable equilibrium; consequently it is necessary to have another point of support. In front, this may be afforded by the thighs; hence this position may be called the "*forward-sitting position.*" The fulcrum may also consist of the point of the sacrum; this latter may therefore be appropriately denominated the "*backward-sitting position.*" We

[1] *See* Section 21 hereinafter for further reference to this matter.

We proceed to examine successively the two positions in respect of their anatomical conditions, and to see what modifications they impress upon the physiological functions of the human organism. It is sufficient for this purpose to clearly call to mind the reciprocal relationship between the vertebral column and the viscera, and to remember that the vertebral column, our support, lies in the middle of the back, and that the viscera, viz., the thoracic and abdominal organs, lie in front of it.

Forward Position.—In the forward-sitting position the weight of the head and of the thoracic and abdominal organs necessarily drag the body forward.

The first movement of a child sitting in that position is the bending of the head. Held in place by the muscles of the nape of the neck, the head draws the thorax with the vertebral column so that through the weight of the thoracic viscera, and in proportion as the muscles of the back become more and more fatigued, the vertebral column is incurved, or curved forward.

This bending movement is accentuated still more by the weight of the abdominal viscera. Then the muscles of the back and the nape of the neck become so fatigued that the child involuntarily seeks another point of support, and then it is that he commences to lean upon his elbow or elbows, which, instinctively, he puts up on the table.

Such are the anatomical conditions of the "forward-sitting position." Let us now examine the consequences which flow from them. The forward position brings about :—

(*a*) First, by bending of the head: a reduction of the distance between the eyes and the paper on the desk, the consequence of which is temporary myopia. This myopia may become definitive from the nearness becoming habitual.

(*b*) Secondly, through the bending of the back : a diminution of the thoracic cavity by the approximation of the chest-walls causing difficulty of respiration and circulation.

(*c*) Thirdly, by bending the lumbar region : an increase of abdominal tension is caused, impeding the movements of the stomach and intestines, and thereby making digestion difficult.

(*d*) Fourthly, by leaning upon the elbows and the two fore-arms : an elevation of the two scapulæ is produced, and they are obliged to sustain the weight of the body.

(*e*) Finally, when the muscles of the scapulæ are fatigued, the child leans his chest against the table in order to support himself. This augments still more the difficulty of the respiratory movements.

That is not all. The child, unhappily, often prefers to lean upon a single arm, or upon a single fore-arm. This last position is even worse than the other, for it produces an elevation of the scapula on one side only, and inevitably brings about a lateral deviation of the vertebral column.

In short, the forward position, which is forcibly brought about wherever benches or seats without backs are provided, or with backs that are too vertical, causes an incurving, and even a lateral deviation, of the vertebral column ; it causes, also, an abnormal and difficult action in respiration, circulation, and digestion ; it provokes too great an approximation of the eyes ; it ought, therefore, never to be tolerated in schools where it is possible to do otherwise.

Backward-sitting Position.—In the backward-sitting position, the three points of support, viz., the ischia and the sacrum are fixed and immovable, the viscera and the vertebral column are in equilibrium ; no compression is produced in the cavities of the body. This position would be ideal if it could be maintained. Unfortunately the sacrum is an insufficient point of support when the body is lightly inclined backwards, consequently, a back to the seat with a slightly backward inclination is indispensable.

4. *Application of the theory of posture in sitting to the dimensions and form of school-desks.*—The above expresses the view of a physician of the Schools of Lausanne, an able authority in pædiatry. It is well to remember that children spend a great deal of their time in the school ; that their articular framework is far more plastic than in adult life ; and, further, that the adult consciousness is no adequate gauge of the need of children, or of their subjective impressions, unless that consciousness is informed by properly qualified research. The main results of pædiatry have been accepted by all persons who have taken the trouble to acquaint themselves with its subject-matter, and have been widely acted upon throughout Europe and America, much to the advantage of the young life in their school-houses.

There is but one general rule to be followed, and that is the very obvious one that *the furniture ought to be proportioned to the pupil's body ;* but in translating this into practice, considerable difficulty arises from the fact that the height of children, even of a given age, varies so greatly. It varies also with race and climate. For particular ages the mean is found to vary in Switzerland, even as between one Canton and another. There is still another difficulty, viz., the great variation in the relative length of the trunk and limbs ; even difference of mere condition affects the result, the seating of thin children being sensibly different from fat ones.

The measurement which, better than all others, gives what is required, and which best escapes the difficulties arising from these varied relations, *is the height of the elbow above the seat* upon which one is resting. This even does not escape all difficulty, because children have been known to grow 4, 5, and 7 centimetres ($1\frac{1}{2}$ to $2\frac{3}{4}$ inches) in a year—that is, during the time they are assumed to remain in one class.

With a view of facilitating the placing of the children, the seats in each class may vary a little above and below the mean for the age, or they may be made *adjustable*, so that the children can be distributed properly according to their height. In order to assist this, especially when the desks are not adjustable, the door of the school-room has a graduated scale in centimetres from 90 to 180, say, from 2 feet $11\frac{1}{2}$ inches to 5 feet 11 inches. The height of the pupil can then be seen at a glance, and the school-tables indicate pretty well where he is to be placed.

The school-desks consist of the following parts :—the *table*, the *seat*, the *back* of the seat, the *foot-rest*, and the *repository* for the books. The dimensions and relative positions of each of these will be considered.

5. *The Desk-seat.—The height of the seat* should be such that when the foot is flat on the floor, the leg and thigh form a right angle. When the seat is *too high* the legs swing, and their whole weight falls on the popliteal space (the cavity behind the knee), where vessels and nerves exist that soon give rise to an intolerable irritation, to escape which the child slides himself forward, and is thus prevented from holding himself erect.

When on the contrary the seat is *too low*, the thighs bear against the abdomen, the legs making an acute angle with them, a very fatiguing position ; and then the child extends his limbs so as to rest them; he is, of course, thus deprived of the support of his feet.

It is necessary to observe that in the case of girls the height of the seat should be between 1 and 2 centimetres (say, $\frac{1}{2}$ to $\frac{3}{4}$ inch) less than for boys, on account of the thickness of the clothing.

The *breadth* of the seat from back to front is determined by the length of the thigh. It is agreeable to have the front third of the thigh free, consequently the breadth of the seat is made only two-thirds of the length of the thigh. If the seat be too narrow, some degree of injury to the child very rapidly occurs ; if too wide, the anterior part presses on the nerves and vessels of the popliteal space, and, hindering the circulation in the legs, gives rise to a sensation of discomfort. The front of the seat also should be rounded, to avoid the same discomforts.

The

The *form of the seat* should be slightly convex upwards in front, concave upwards in the rear; this so as to prevent the tendency to slip thereon, and to give the sensation of repose. Many authorities urge that a slight backward inclination be given to the seat for the same reason, thus ——, or, better, ⌒.

6. *Back of seat.—Seats without backs ought to be absolutely prohibited*, and the testimony of hygienists is uniform on this point. They are an offence against the physique of the rising generation, which remark is also true for improperly shaped backs; and a reasonable regard for the future of our people, to say nothing of the moral responsibility involved when we compel attendance at school, demands that this matter should be corrected.

There are several types of *backs to seats*, viz., what may be called the *sacral*, *lumbar*, and *dorsal types*.

The *sacral back* is, of course, a very low one, corresponding to the region of the sacrum, and admits of complete freedom of movement for the body and arms. This was supposed to assist in keeping the vertebral column erect, but experience has shewn that the leverage against the pelvic support is too slight, and it therefore gives rise to the forward-sitting position with all its disadvantages.

The *lumbar back* is higher than the sacral, and reaches as far as the base of the dorsal column. Like the sacral back, it also admits of considerable movement of the vertebral column, but not supporting the back, it does not permit the child to rest his fatigued muscles.

The *dorsal back* rises in some seats as far as the point of the scapula, in others as far as the spine of the scapula. *It ought never to be higher than this last*, otherwise it will impede the arm-movements by its reaction on the scapula. This last form of back is the one to be preferred.

According to Kocher, the most agreeable shape of seat-back is that which is *slightly inclined to the rear*, and is also *slightly convex in the lumbar-dorsal region*, the curve being made to correspond with that of the vertebral column; and the Commissioners have not the slightest doubt that experience has confirmed this opinion. If the back be erect, the child will become fatigued, and will either take the forward position with its attendant disadvantages; or leaning against the back, he will slip forward in his seat, and adopt an attitude also injurious as regards his physical development.

The same thing happens in school-seats in which a simple tranverse bar, in the superior dorsal region, replaces a complete back, as in seats one sees in many other places as well as in some schools.

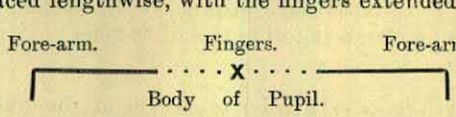
When the back of the seat is too much to the rear the pupil will either not use the back at all—and the disadvantages of the forward position reappear, or else he will feel so immobile that his arm-movement, depending then wholly on his muscular effort, will be difficult.

The seat and back ought, therefore, to take the form roughly illustrated in the diagram,[1] viz.:—

7. *Foot-rest.*—When the seat of a school-desk has a proper height, a *foot-rest* is neither necessary, nor, on the whole, is it desirable; for, impeding to some extent the movement of the legs, it limits the freedom of movement of the pupil. It also constitutes, especially if narrow, a sort of foot-scraper; and mud and dust tend to accumulate under it. Wherever it is introduced, it ought to have a breadth front to rear, of, say, 10 to 15 centimetres, or, say, 4 to 6 inches, so that the whole sole of the foot may rest thereon. A narrow bar of wood is not comfortable.

Since the seat and its back are inclined in properly constructed seats, the foot-rest should also be inclined, so that the function of the nerves and vessels in the popliteal space shall not be impeded.

8. *Table.*—The *length of the table* for a school-desk is determined by the space occupied by the two fore-arms of the pupil placed lengthwise, with the fingers extended thus:—



that is, from elbow to elbow. This would be from, say, 50 centimetres for a little child, to about 90 centimetres for an adult, or, say, from about 20 to 36 inches For school children the range, therefore, would be, say, from about 60 to 70 centimetres, or from 24 to 28 inches.

Where the highest pædagogic efficiency is desired, a single table for each pupil is by far the best condition; but with forty-two pupils in a class, this would involve the class-room being rather large, certainly greater than 28 feet by 21 feet, as previously mentioned. It is customary, therefore, in the majority of schools, to have a single school-desk for each two pupils, and to make its length from 120 to 140 centimetres, say, from about 48 to 56 inches in length. With these double tables, there would be ample space for the aisles between the desks, so that pupils may enter and leave their seats easily, and without creating disturbance; further, all the places are easily supervised by the master. The question of the seating for schools of the highest class, and the dimensions of class-rooms in connection therewith, will be reverted to hereinafter.

When the table is at right angles to the line of sight, the whole field of vision thereon, a book for example, involves practically the same degree of accommodation in the crystalline lens of the eye. Hence, for *reading*, the slope of the table, as a simple measurement will easily shew, should be about 30°. For writing and drawing, such an inclination would, of course, be inconvenient; and it is necessary, therefore, to approximate more closely to the horizontal. A slope of one-half the above, viz., about 15°, has been very widely adopted as a compromise, and a small portion of the table, most remote from the pupil, is also made quite horizontal. This arrangement gives about 35 centimetres (13¾ inches) as the distance from the eye to the work, which, being about the normal distance, produces a minimum of fatigue, and is in every respect satisfactory. The custom of fixing a fillet at the lower edge to prevent such articles as books, etc., falling off, is not well conceived, because in certain positions of the arm the projection gives rise to a compression of the nerves and vessels of the fore-arm. If, however, the fillet be central and short, it is unobjectionable.

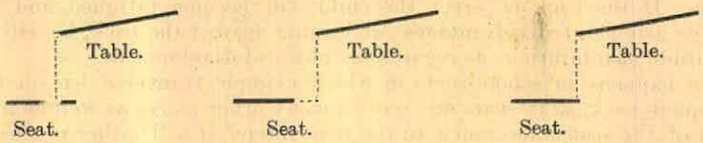
9. *Height-relation between seat and table.*—The two important elements defining the relative position of seat and table are obviously the *height* and *distance* between the two. Fahrner, in his discussion of the question, called the former the "*difference*," *i.e.*, the difference of absolute height; and he called

[1] In the illustration the back is inclined too much to the rear.

called also the distance between the verticals at the nearest edges of the table and seat, the "*distance*." The "difference" ought to be the distance from the ischium to the elbow, when the humerus is hanging vertically, and is easily ascertained, on seating the pupil with his humerus vertical and his fore-arm horizontal, by measuring downward to the seat. Its correctness, also, is easily verified by seating him a little distance from the table with his hand, palm downwards, flat thereupon. Then, if the "difference" be normal, the fore-arm should be horizontal, the humerus being vertical. The table-height may *very slightly* exceed the "difference" so determined.

Apart from the sensation of comfort to the body, there are certain effects on the eyes to be considered. When the table is too high, and the books, etc., are consequently too near the eye, there is a tendency to myopia; on the other hand, when the table is too low, there is a temptation to lean the head, and this position being accentuated by fatigue, restores again the tendency to myopia. Moreover, the right elbow has, when the table is high, to take a position which leads to lateral bending of the vertebral column, with a convexity to the right; and, when too low, a forward incurving, with its attendant mischief. In general, when the table is too high or low, there is myopic tendency, abnormal curving of the vertebral column, compression of the blood-vessels in the neck, diminution of the intercostal spaces, diminution of the chest cavity, and diminution of respiration and circulation; the abdominal wall is folded, the stomach is compressed, and its movement hindered. Hence the question of proper height is *not* without moment; on the contrary, it has an importance which is understood and rightly estimated only by those who have seriously studied the question, and observed the consequences that flow from defective positions of the body in case of children.

10. *Distance-relation between seat and table.*—When a plummet on the near edge of the table falls on the seat, the "*distance*" is said to be *negative;* when it falls in front of the seat, *positive;* and when it is coincident with the edge of the seat, *zero*, as is illustrated hereunder:—



"Distance"— Is negative; is positive; is zero.

In order to stand erect, the "distance" must be positive. For an adult, it should be about 16 centimetres (or, say, 6⅓ inches) at least. This would be practically an impossible position for reading or writing, for the head and body would have to be inclined forwards a very considerable amount. Even when the *positive* "distance" is very small, the forward-sitting position, with all its injurious consequences, is involved. With *zero* "distance," it is possible to enter the seat comfortably, but not to stand upright. A *negative* "distance," even of a few centimetres, makes rising in one's place difficult, if the table or seat are fixtures; but it is the *best* position for reading and writing, and the eyes are at a normal distance. It is now evident that *all seating involving positive "distance" should disappear from our schools*, and be replaced by seating with slightly negative "distance."

11. *The Repository for books, etc.*—Beneath the table there is an available space of something like 15 centimetres, which can be utilised as a *repository* for books, paper, pencils, etc.; or, it may be well under the table and lower down. Both types have been made, the Pestalozzi, Zurich, Fribourg, Schenk, Jornod at Vuille, and similar school-desks, being examples of the one kind, and the Mauchain, and similar desks, examples of the other.

12. *The construction of school-desks.*—In order to get rid of the difficulty of standing erect, when the "distance," as it should be, is negative, seats are usually made to rotate; that is, they can be turned up out of the way, and in some schools they are provided with springs, so that automatically they lie against the back of the seat, and have to be kept down by the weight of the pupil sitting upon them.

Other desks, as for example those of Zurich, have tables with a rotating leaf, which serves as a book-rest. Others again slide to and from the pupil. All these arrangements have the object of making the standing position possible and comfortable.

Among the exhibits at the Paris Exhibition of 1900 was a school-desk on the *Jagerink* system for one pupil, so designed that, while the inclinations of the different parts remained constant, the relative positions of the table, seat, and back being independent could be changed, the desk admitting of eighteen different positions. The manipulation was perhaps a little complicated.

Various forms of school-desk were exhibited in 1889 at the Champ de Mars Exhibition, Paris, and again in the Exhibition of 1900. Illustrations of the latter may be seen in the "Rapports du Jury International," Groupe I—*see* "Mobilier Scolaire," pp. 559-561, figures 227-234, for desks supplied by the houses Hachette, Delagrave (Nisius), and Féret. The last figure, 234, is a somewhat elaborate table, designed by Mr. V. Brudenne.

Three types of school-desk, one with chairs, illustrated in figures 336-338, pp. 975-976 of the same "Rapport," come from the factory of Mauchain, of Geneva. Various forms of seats and tables were also seen at the establishment of Hachette et Cie, Paris, as for example, the "Tables d'école maternelle, modèle de la Ville de Paris"; the "table du petit commençant," and the "table du petit dessinateur"; the two last being according to the method of Madame H. Monternault. In Austria also various forms of school-desks ("Kinderpulte") were seen at Pichler's establishment in Vienna.

A still larger number of school-desks were exhibited in the "Exposition Nationale Suisse de Genève, 1896," when nine cantonal departments, and eight makers shewed twenty-seven different models of desks. The Cantons were Basel, Berne, Geneva, Neuchâtel, Soleure, St. Gall, Tessin, Vaud, Zurich; and the inventors were Troefel, and Rudlinger of St. Gall; Jornod et Vuille of Neuchâtel; Niffeler and Schenk of Berne; Mauchain of Geneva; Wahl of Chaux-de-Fonds; and Wanner-Burckhardt of Zurich.

There are several different types of desk in the United States and Canada which are very neat in appearance, but they do not respond, in the Commissioners' judgment, to all the requirements previously explained as well as do some of the Swiss desks.

School-desks may be divided into four types, viz. :—

(*a*) Desks with both "distance" and "difference" fixed.
(*b*) Desks with only the "distance" variable.
(*c*) Desks with only the "difference" variable.
(*d*) Desks with both "distance" and "difference" variable.

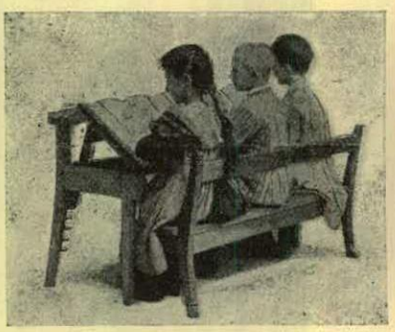
The four types will be fully referred to.

13. *Kindergarten-desks.*—In the Swiss Exhibition of 1896, at Geneva, three models in kindergarten-desks were shewn—one by the Department of Public Instruction at Zurich, one by that of Neuchâtel, and one by the manufacturer Mauchin, of Geneva. The kindergarten-desks are generally of type (*a*). The smaller Zurich kindergarten-desk, for two pupils, has a horizontal table, size, 100 x 55 centimetres; and two small chairs. The larger desk measures 179 x 48 x 56 in height. The chairs, four, for this latter, have square seats, 29·5 x 29·5, and 30 centimetres high. The top of back is 34 centimetres higher than seat, and is 31 centimetres in breadth.

The Neuchâtel kindergarten-desk has places for three pupils, a somewhat narrow table, that can be slightly inclined; this last feature is a real advantage.

The "Table-banc normale (L. Nisius)," with the table ruled in squares, is a good form of kindergarten-desk, but has the disadvantage of not being in any way adjustable. It seats two pupils.

The Mauchain kindergarten-desk is for three pupils, and the table can be arranged in four different ways, viz., for manual work, for reading, for writing, and for writing, drawing, etc., on the table itself. It is certainly one of the best desks seen by the Commissioners. It is light, and may easily be shifted by the little children themselves. Dr. Combe expresses a preference for the Mauchain kindergarten-desk, with the little Zurich chairs, rather than its own seat. The colour of the writing surface (ardoisée) for work with chalk, has been made brown instead of the usual black: this is said to avoid the phænomena of astigmatism. The possibility of four positions, one of which admits of writing and drawing with chalk, is claimed to be thoroughly in keeping with the demands of the Froebelian method. This work with chalk, it is asserted, gives great lightness of touch to the hand; and the opportunity for writing or drawing objects in large dimensions is said to more vividly impress the imaginations of the children, and to more firmly engrave on their minds the form of letters, etc., and the mode of writing them. With this assertion the Commissioners are in agreement. The illustration hereunder shews the desk, with the children at work thereat. Its dimensions, in centimetres, are 136 x 34, and is known as "modèle No. 16".



14. *Primary school-desks.*—In section 4 of the preceding chapter, Article 29 of the Swiss regulations is quoted as affirming—The school-rooms ought to be provided with the "Mauchain" type of furniture, or with some other *presenting the same advantages*; and Article 30 prescribes the adoption of—(1) a negative "distance"; (2) a correct height, so that the feet may be flat on the floor, and that there may be a proper "difference"; and (3) that the seats shall be provided with backs. The special advantage of the Mauchain desk lies in its adjustability as regards "difference." The various forms of desk in respect of which experience is now to hand is much greater than might at first be supposed. Some of these will now be referred to in detail.

Reverting to section 12 of this chapter, it was noted (*a*) that some desks had both "distance" and "difference" fixed. Such are the following:—

The *old Bernese desk*, seen in the Permanent Exhibition of School Material at Berne, is illustrated in the figure hereinafter (A). It has a *negative* "distance" of 2 centimetres. The table is hinged, and when lifted, a spacious repository for books is disclosed. The desk has a place for atlases and large books in front (*see* drawing), and is made in five sizes.

The *Roux desk* has zero "distance." It is made in no less than nine sizes. The section of the desk is shewn in figure (B). A slight modification is known as the Roux-Isoz desk.

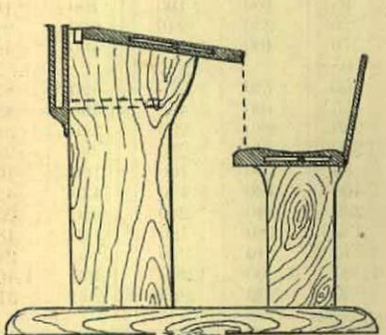


Fig. A.

THE OLD BERNESE SCHOOL-DESK, BERNE, SWITZERLAND.

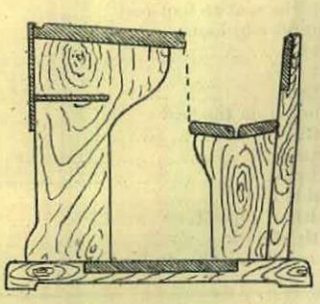


Fig. B.

THE ROUX SCHOOL-DESK, CANTON VAUD, SWITZERLAND.

The

The *Grisons desk* has a negative "distance" of 3 centimetres. It has the advantage of a lumbar-dorsal back, closely following the normal curvature of the vertebral column.

The *Fribourg desk* is either of a single height, with chairs of different heights, or both chairs and desks are of various heights.

The *Basel desk* has a negative "distance" of 3 centimetres, and a straighter back than the Roux desk.

The *Schwytz desk* has a negative "distance" of 2 centimetres., and, as regards the "difference," three sizes are made.

The *Valais desk* may be either zero "distance" or negative, of from 2 to 3 centimetres; and eight or nine sizes are made, to deal with the difficulty of "difference."

15. *Variable "distance" desks.*—The second form of desk referred to was (*b*), viz., that with the "distance" variable. In order to allow the pupil to stand erect, some parts of the table or seat, or of both, must be movable. The various forms of desk may then be classed[1]:—

(*e*) Desks with tables, part or the whole of which can be rotated about a horizontal axis.
(*f*) Desks with sliding tables.
(*g*) Desks with rotating seats about a horizontal axis.
(*h*) Desks in which the table and the seat can be rotated.

First, as to desks of class (*e*).

The *Zurich school-desk* has cast-iron standards, and table and seat of wood. It is undoubtedly the most pleasing form of school-desk seen by the Commissioners. The "distance" is invariably 3 centimetres *negative*. In order to allow pupils to stand, a leaf of the table can be lifted. (*See* the Figure C, which, however, is not to scale.) This leaf is intended to receive the reading-book; but the distance is so increased, that the pupil is tempted to adopt the forward-sitting position, with its disadvantages.

The back is inclined backwards, and has the proper supports. The desks numbered I to IV are provided with large foot-rests; the larger ones, V to VIII, have foot-boards only. It will be seen from the following Table, giving the dimensions for different classes, that the difference proceeds by single centimetres from 18 to 28. *This desk is a very good one*, even from the hygienic point of view, and despite the defects mentioned. Unfortunately, it is *not as excellent* as it is graceful in form, and it is certainly not equal, hygienically to the Mauchain desk.

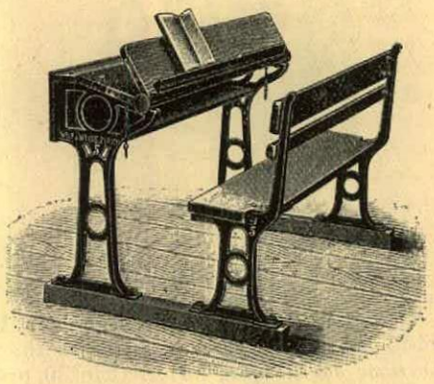


Fig. C.

THE ZURICH SCHOOL-DESK.

PROPORTIONS OF ZURICH SCHOOL-DESKS.

Scholastic year	6–7	7–8	8–9	9–10	10–11	11–12	12–13	13–14
Stature of Pupil in centimetres	101–110	111–120	121–130	131–140	141–150	151–160	161–170	171–180
Class	I	II	III	IV	V	VI	VII	VIII
	mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
Inclination of the table (14°)	80	87	90	95	100	100	100	100
"Difference"	190	200	210	220	230	240	260	280
Distance from the seat to foot-rest	260	300	340	370	400	430	460	490
Distance from floor to foot-rest	220	163	110	65	.. ...	.....	.....	.. ...
Height of desk	750	750	750	750	730	770	820	870
Seat—Height	480	463	453	435	400	430	460	490
Breadth	230	240	250	260	280	295	320	340
Back—Distance from the seat	190	200	220	230	240	250	260	280
Breadth	80	80	80	80	100	100	100	100
Table—Breadth	340	360	380	400	420	420	430	430
Fixed part	160	180	200	220	240	240	250	250
Movable leaf	180	180	180	180	180	180	180	180
Breadth of repository	200	200	200	240	240	240	240	240
Length of desk	1,200	1,200	1,200	1,200	1,200	1,200	1,400	1,400
Distance from table to back	200	210	220	230	250	265	290	310

[1] The several desks are known as—(*e*) pupitres avec tablette à valve, or Klapptisch; (*f*) avec tablette à glissement, or Schiebtisch; (*g*) avec siège à valve, or Klappstuhl.

The

The official school-desks of *St. Gall* are of wood. The table is less inclined than in the Zurich model. The distance throughout is 3 cm. *negative*. The following are the main proportions:—

PROPORTIONS OF ST. GALL SCHOOL DESKS.

Class	I.	II.	III.	IV.	V.	VI.
Inclination of table, 9·36.	cm.	cm.	cm.	cm.	cm.	cm.
"Difference"	21	22·5	24	25·5	27	27
Floor to foot rest	18	12	6	. .....	.....	.....
Breadth of foot rest	40	40	40	....	.....	....
Seat height	45·5	44	42·5	41	46	47
Back height	74	74	74	74	80	83
Table breadth	38	39	40	42	44	44
,, movable leaf	18	18	19	20	20	20
,, length of desk	120	120	120	120	120	120
,, breadth of desk	80	82	85	90	95	99
,, height of desk	74	74	74	74	80	83

The desks of *Aargau*, *Appenzell Int.*, and *Thurgau* are the same as the above.

Among desks with sliding tables (f) may be noted the *Pestalozzi desk*. The sliding table in this is similar to that in the Austrian desks used in Olmutz. It has a large slope, 20°, which, with respect to the hygiene of reading, etc., is excellent. On sliding the table towards the pupil a groove is exposed, in which the pens, chalk, and ink are kept. The atlases and large books may be placed in front, as in the old Bernese desk. The sliding forwards or backwards of the table is so easy that it can reach the pupil's body when seated; it sometimes leads to the fingers being pinched. The lower side of the table is hollowed out about 8 centimetres to receive the chest of the child, and in the centre of this is a small fillet about 1 centimetre in height, to prevent books, etc., sliding off. The sides form a rest for the arms of the pupil, and are free from any projection causing pressure on the vessels of the forearm.

This arrangement allows the "distance" to be *positive* when the table is pushed back, so that the pupil can stand comfortably, and, nevertheless, to be *negative* when he is sitting for writing, etc.

The seat is made too broad, and the front portion would, therefore, involve compression of the nerves of the popliteal space. This defect, however, could easily be remedied.

The foot rests are double; one is inclined, the other is flat. The desk is shewn in the illustration hereinafter, and is made in five sizes; see figure.

Soleure has desks of the type (g), viz., with the seat rotating about its horizontal axis. The desk of the manufacturer *Niffeler*, of Signau, has a table of about 15° inclination, a zero "distance," a slightly-hollowed seat, rotating so as to facilitate the pupil's entry, a back of agreeable height, that could easily be made to satisfy the proper conditions in the lumbar region—which at present it does not,—and it has the advantage of being very simple in construction.

The *Schoenenwerd desk* has a negative distance of 3 cm. fixed table; large seat that can turn; the foot rest is an iron bar—an unsatisfactory arrangement; and the back is without rest for the lumbar region.

In regard to seats of the type (h), viz., *with both table and seat turning*, there are two that may be mentioned. In the *Gianini desk*, Locarno, the "distance is *positive*, 2 cm.; this defect is serious.

In the *Kluss desk*, Soleure, the "distance" is negative, 3 cm. It has in general the same merits and demerits as the St. Gall desk. The back is inclined backwards; has proper support for the lumbar region; the foot-rest is replaced by a cross piece of 40 cm. width, which can be moved for cleaning.

16. *The desks of variable "difference."*—The third type of desks (c) referred to in section 12 were desks with the "difference" variable.

The *Rudlinger desk* of St. Fiden, in St. Gall, is a wooden desk, with cast-iron supports. It has a negative "distance" of 3 cm. The table has a movable leaf like the St. Gall and Zurich desks, and, generally speaking, it has the same advantages and disadvantages as those desks.

The seat, foot-rest, and back are all movable; but despite this the desk is not a good one, and the manipulation is liable to pinch the fingers of children.

In the *Jornod et Vuille desk*, of Noiraigue in Neuchâtel (and also in the Féret desk of Paris), the table can be made any height at will. In addition to the rack by means of which this is done, there is a device enabling the table to be set at any angle of inclination from 0° to 40°, which makes it excellent for reading, and the child may sit or stand at the desk. The "distance" however is positive; the seat is not correctly shaped; the back is too high, and without proper lumbar support. The mechanism also may even crush the fingers. The desk may be made a good one.

The *Fritz Wahl desk* of Chaux-le-Fonds, is a more complicated mechanism than the preceding.

The old Mauchain desk was made in two models, one entirely of wood, the other with cast-iron standards; it has the defect of *positive* "distance"; all its merits are now included in the new desk to which reference will be made later, so that it does not require further description.

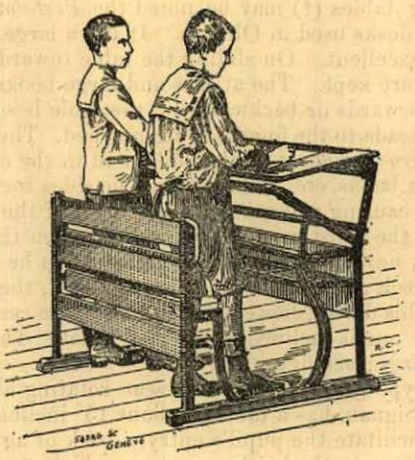
17. *Desk of variable "distance" and "difference"—i.e.*, of type (d). Two desks aim at embodying all the required advantages; these are the Schenk and New Mauchain desks. The *Schenk desk* has two tables, one for each pupil, inclined 15°, and provided with a fillet at its lower edge to keep books, etc., from sliding off. These tables can, without changing the inclination, be raised; the "distance" and "difference" changing together little by little. The argument of Dr. Schenk is, that the length of the forearm is equal to height of the elbow above the seat, so that all that is necessary is to draw the table towards one till the elbow touches its edge, when the table will, it is said, be adjusted to the pupil's height, and present the necessary *negative* "distance." The foot-rest is very much inclined.

The following are some of its defects:—It is liable to injure the fingers of the pupils; its fillet ought not to extend the whole length of the table; it slides too easily; the seat is too broad for little children, and will press on the nerves, etc., of the popliteal space; the back is too high for the smaller pupils; the foot-rest is inconvenient. *The*

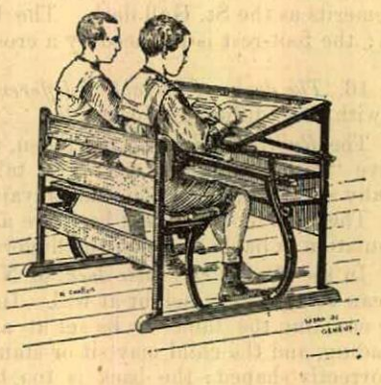
The new Mauchain desk is, excepting its adjusting mechanism, made either entirely of wood, or has cast-iron standards. In its prospectus it affirms that it presents the following advantages as compared with other desks, viz.:—

1. Of adjustment to various heights of the pupils.
2. Of maintenance during their several exercises of a physiologically correct position, without bending the trunk or limbs, ensuring freedom of action for the viscera, and avoiding the serious disadvantages to the sight, found in existing school-furniture.
3. Of lending itself to the various requirements of teaching, writing, reading, drawing, dressmaking, etc.

With this desk, work may be done either sitting or standing. It received the gold medal at the 1900 Paris Exhibition. While hygienically altogether superior to the Zurich desk, it unfortunately is not so graceful in form. This is regrettable, for the form of school furniture affects, favourably or otherwise, the æsthetic consciousness of the school-pupil, and is part of the education of his artistic sense.



(Standing position.)



(Sitting position.)

THE MAUCHAIN SCHOOL-DESK.

Adjustable for height : table any angle.

The mechanism allows of a great many positions, both as regards "difference" and angle. The desk is solidly constructed, may be manipulated quietly and easily, and without risk of damaging the fingers. The fillet on the edge is only in the middle parts of the desk, so that it cannot press on the nerves and vessels of the forearms of the pupils. The seat rotates, has *negative* distance of 3 to 5 cm., and easily turns, so that the entry of the pupils is also easy. The back can occupy five different positions, ranging through 9°, and can thus be adjusted so as to give fairly good support, whatever the femoral length, thus preventing pressure upon the popliteal space ; the *sacral support* is not perfect except for the tallest pupils. This is a slight defect. The back can be raised through the angle 27 to 30 cm.

The

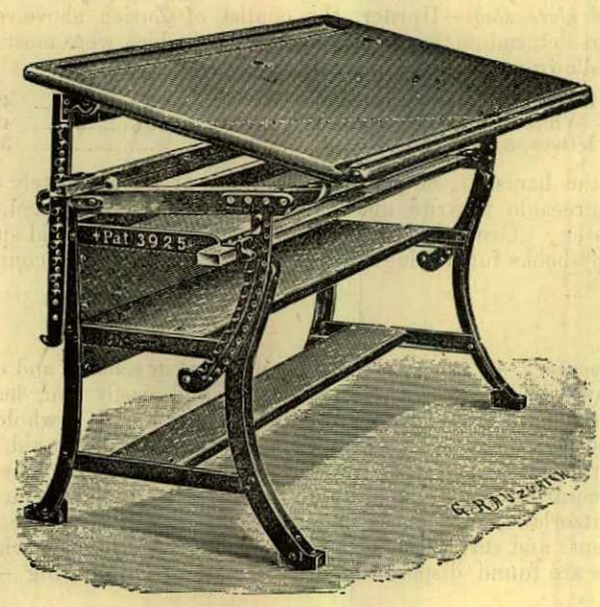
The foot-rest may be laterally varied through 12 cm. in three positions, and vertically from 17 to 26 cm. in three corresponding positions.

This table undoubtedly admits, as claimed, of good positions for reading, writing, drawing, sewing, etc., *and from the standing point of hygiene is the best table seen by the Commissioners.* It has of course the usual repository for books, etc. The illustrations give some idea of form of the desk (*see* figures).

A seat absolutely fulfilling all the conditions has yet to be invented.

18. *Desks for higher schools.*—One of the very best seen was "Mauchain's Modèle No. 18," in use in the Polytechnicum of Zurich. Its size is 140 by 68 cm.; it has all the advantages previously indicated; and has been designed for schools of drawing, commerce, housekeeping, and light manual work—as, for example, that for girls. The illustration shews its form; see figure hereunder.

Some of the United States and Canadian desks are perhaps more attractive in form; but where they have adjustment both for height and angle, they are not so firm as the Mauchain desk. The use of chairs of adjustable height is common in America.



The necessity for hygienic care is greatest of all in the earlier years of childhood, and therefore great attention has been given to the seating of the child from the first entrance into school till about the age of puberty. The secondary school-work should be also treated with care in the matter of school-hygiene, for greater pressure is now being put upon the organism, which, although less plastic and not so quickly affected as before, nevertheless needs every possible care till maturity is reached. The intelligence of the pupil is however such, that he can no longer be regarded as at the mercy of bad conditions imposed upon him by compulsion of the educational system.

19. *School-maps, etc.* A 2 i (c).—The maps and larger charts used in schools may be on brackets carrying a series of spring-rollers, and should be conveniently placed with respect to the class. Thus they may be in front of the black-board, or at its side. The other charts should be well varnished to prevent dust lodging, and, so far as hygiene is concerned, are better kept rolled-up. It may be noted however that much is learnt by casually looking at good charts and diagrams, and that if affixed to spring-rollers they can be easily defended against dust, and brought into view when required. Pictures illustrating the ethnological, physiographical, geological, or artistic characteristics of different parts of the world, and permanently exposed, ought to be glazed.

20. *School-laboratories, museums, libraries, etc.* A 2. ii (a) and (b). The only thing that need be specially mentioned in this connection is the use of proper draught-cupboards to carry off corrosive, poisonous, or offensive gases. The draught is easily obtained by means of gas-jet or special forms of ventilating mechanism.

School-museums need to be safeguarded against the attack of various insects, etc., and naphthalene is largely used for the purpose.

School-libraries and reading-rooms require attention, especially in regard to the presence of dust. Cleanliness in handling the books of the library ought to be insisted upon as part, not only of defence against their insanitary condition, but also as part of education in hygiene.

The books should be protected against the accumulation of dust thereon, and, therefore, should be in proper cases, or, at least, protected by roller blinds, especially during the cleaning of the room.

21. *School material and its hygiene.* A 3 (*a*).—Slates are everywhere being abandoned on account of their insanitary character, and paper is being substituted with advantage. This matter, it is presumed, is beyond the necessity of serious discussion; no hygienic authority would countenance the use of slates, even where they they are not, as is generally the case, used promiscuously by all the pupils in a class. Paper should be at once substituted in every school in charge of the State.

In regard to the proper colour for paper, Horner and Javal recommend a yellowish tone, with intensely black ink. Much of the ink sold is too pale in colour.

Books.—With respect to books, it is important that, for children the type should be sharp and bold, and also that the paper should be of good colour. The oculist Cohn states that all type less than 1·5 mm. in height is injurious to the eye, and he urges that the reading books should be printed in type known as "cicéro"—that is, about 1·75 mm., or ·07 inch; that is exactly the size of the type in, for example, the "New Canadian Readers," Twentieth Century Edition, of Messrs. Gage and Co., Toronto.

The distance between the lines, according to Dr. Combe, ought to be not less than 2·5 mm. Those in the "Readers" just mentioned are much greater than that, being, between the bottom of one small letter and top of next, about 4·4 mm. This is excellent for the lower classes.

It is agreed that bright white paper is very fatiguing to the eyes, and Javal, as well as Horner, recommend, as abovementioned, a very pale yellowish tint as agreeable and not fatiguing, and, therefore, as a proper colour to be used for printed books, as well as for writing-paper.

The blackboard and slate slab.—Horner, the oculist of Zurich above referred to, made a large number of experiments to determine the colour and ground which were most favourable with respect to sight. He found the following degrees of visibility:—

Ink.—Black letters on white or yellowish ground	496 degrees.
Blackboard.—White letters on black ground.....	421 ,,
Slate.—Grey letters on black ground	340 ,,

He recommended the banishing of slate, and the use of an absolutely dead surface. The slate surface is, however, very agreeable to write upon, but, as previously mentioned, ground glass is better. (*See* section 2 of this Chapter.) Ground glass also presents the required dead surface.

The question of copy-books for writing will be referred to later on in connection with the position which should be occupied.

22. *The School Dispensary.*—Slight accidents are not rare in schools, and even trifling injuries may lead to bad results if unwisely treated. Children should, and easily can, learn that asepsis is not unimportant; and that, though on the whole they are safe enough with a whole skin, the moment the skin is broken there is need for care. In more serious matters, too, "first aid," rapidly and well given, often avoids serious complications, and may often even prevent death. The primary-school affords opportunity for children acquiring an intelligent and interested attitude in relation to this matter. The physicians in France, Switzerland, etc., officially connected with schools, have urged that small chests, containing a few medicaments and surgical material, should be placed in each school.

In the Swiss schools are found, disposed in suitable cases, the following:—

I.

Solution of subacetate of lead; phenol of 50 per cent. (5 per cent. ?) strength; sal volatile, menthol, eucalyptol; emetics, in doses already prepared; gramme tablets of corrosive sublimate for 1 litre of water; a packet of styptic material; a box of ordinary sticking plaster and court plaster.

II.

Five packets, each containing iodoform gauze, cotton wool impregnated with corrosive sublimate, 1 roll bandaging, safety-pins, 2 splints, the whole in impermeable paper; 4 rolls of calico, viz., 2 wide and 2 narrow; 3 rolls of gummed tarlatan; 4 splints; 2 triangles, viz., 1 large, 1 small; 1 packet corrosive sublimate cotton wool; 1 packet ordinary cotton wool.

III.

Pair scissors; pair forceps; graduated medicine glass.

A *résumé* of simple directions, for the purpose of reminding one what to do in the absence of the surgeon, is placed in the case.

It may be here mentioned, also, that courses of twenty lessons are given to school teachers, touching—

1. Human anatomy, with demonstrations by means of anatomical models.
2. Wounds; their complications; antiseptic bandaging.
3. Hæmorrhages, and means of stopping them.
4. Burns and their treatment.
5. Contusions; sprains; fractures; dislocations; with practical exercises demonstrating the use of "first aid" apparatus.
6. The most usual cases of poisoning, *e.g.*, belladonna, hemlock, fungi, etc., and their treatment.
7. Foreign bodies in the eye, nose, ears, larynx, and the usual remedial means.
8. Asphyxia, through carbon dioxide, carbon monoxide, illuminating gas, or other mephitic gases, and its treatment.
9. Sudden accidents and their treatment, viz., those depending on the (*a*) *Nervous system*—Fainting, cerebral congestion, cerebral disturbance, nervous cases of an epileptic or hysterical character. (*b*) *Digestive system*—Toothache, inanition, indigestion, colic. (*c*) *Circulatory system*—Feverishness, epistaxis, hæmoptysis, hæmatemesis. (*d*) *Respiratory system*—Asthma and false croup.

The whole course is accompanied, as far as possible, by practical exercises.

The example thus set is one that we shall do well to follow; and it would soon create, indirect as the means is, a public opinion as regards matters of hygiene.

23. *Retrospect.*—Reviewing the question of the choice of school-sites, the design and furnishing of schools, as these subjects are regarded in Europe and America, and looking at them, either in the light of what has been written on the subject or in the light of what was seen of the practical realisation of hygienic theory in actually existing schools, the Commissioners feel that *we have here almost everything to learn.* Some of our buildings are by no means unworthy as regards ordinary architectural ideas, but through and through they shew a want of knowledge of the contributions of modern research to the subject of school hygiene, and are built on principles that are completely discredited, and quite out of date. Compared with modern schools in Europe and America, they are poor and unhygienic—a serious misfortune for the generation that must receive its tuition therein—and yet, considered in themselves, they are often fine buildings, of good appearance.

24. *Conclusions.*—The conclusions that flow from this chapter, and from the preceding one, are—

1. Our State schools at present are unsatisfactory as regards (*a*) their orientation, (*b*) their general design, (*c*) their internal arrangement as to classes, (*d*) their system of seating, (*e*) their arrangement as regards lighting, (*f*) as regards heating and cooling, (*g*) ventilation, (*h*) lavatories, (*i*) latrines, (*j*) in the continuing to use slates, (*k*) in insufficient provision for accident and "first aid."
2. An inspection should be made of all State schools, with a view to immediate amelioration of their condition, by some one technically familiar (*a*) with the forms and equipments of school-buildings approved in Europe as hygienic, (*b*) and with European school hygiene as a specialty.
3. All selection of sites in future should be made by some person competent as regards modern ideas of school hygiene.
4. All future school-buildings should be designed by an architect familiar with modern schools, especially those of Switzerland, and with school hygiene as a specialty.
5. Every school should be thoroughly cleaned, repainted, and generally renovated *once a year.* All the material should be then thoroughly overhauled and put into proper condition.[1]

[1] During the Commissioners' stay in Switzerland, the opportunity was taken of seeing the very thorough manner in which the schools are cleaned, renovated, painted, varnished, etc., during the summer vacation. All woodwork is scraped with steel turnings, then treated with glass-paper, all floors treated so as to look like new, and the whole renovation is equally thorough.

CHAPTER XLIX.

CHAPTER XLIX.

Hygiene in Relation to the School Pupil.

[G. H. KNIBBS.]

1. *General.*—As already pointed out, a State that compels the children of its subjects to attend school is obviously involved in the moral obligation of safeguarding the hygienic interests of the children, individually and collectively, during the time they are in school. This duty requires (*a*) hygienic care of the individual child, (*b*) protection of all against maladies affecting individuals. The former (*a*) involves the establishment of satisfactory hygienic conditions in the school, care as to its surroundings, attention to prophylaxis concerning all ordinary sources of danger, regard for the conditions of the imposed work, and for physical culture as part of the general training. It will be necessary, therefore, to consider the subject of hygiene as it concerns the pupil in respect of the non-contagious maladies that appear in schools and occasion trouble; in respect, also, of the contagious ones, of the conditions of school-work, and to consider, too, the question of overwork. This will be done in this chapter, physical culture being reserved for a later one.

One may include under the heading of non-contagious diseases those that, while not strictly non-contagious, may be so regarded for the purposes of a general hygiene; and, further, it will sometimes be convenient to refer, while discussing the defect of a sense-organ, to contagious maladies that may be associated therewith. As the purpose of the chapter is not systematic nosology, a departure from strictness of classification will be excused by convenience.

2. *Defects of sight.*—Defective vision is far more common with children than is generally supposed, and much unwitting cruelty has been inflicted through ignorance upon children whose failures to profit by their lessons were partially due to defects of sight, hearing, etc. The common defects in school children are feeble vision, myopia, hypermetropia, astigmatism, blemishes in the cornea, etc.

Feeble vision implies merely a weak sense of sight even at normal distances; the only way of dealing with it is to bring the child near the blackboard, etc. *Myopia* or *hypometropia*, is a condition of the eye such that the focus of objects falls in front of, instead of upon, the retina; and can be remedied only by *concave glasses*. The following will give some idea of the frequency of myopia in Lausanne, a frequency which it may be said is much less than in German Switzerland, Germany, Austria, Marseilles, or Lyons, for which places there are fairly complete statistics.

In 3,500 school children in Lausanne 130 were found to be myopic, *i.e.*, 3·7 per cent.[1]

Ratio of myopia:—		
Boys and girls	1·0	1·1
Town pupils to country pupils	1·0	3·1
French Swiss to German Swiss	1·0	1·9
Ratio of hereditary myopia:—		
Boys to girls	1·0	0·8

Ratio of myopic pupils from 9 to 15 years of age:—

Age in years	9	10	11	12	13	14	15
Ratio	1·0	1·5	1·7	2·0	2·8	4·6	6·5

A similar result is obtained by taking classes in the schools instead of age. This, in the absence of other causes, is an indication that *school life tends to develope myopia.*

In 222 myopic eyes, the degree of myopia was found to be as follows:—

	Per cent.
Slight myopia (less than 3 diopters)	65
Medium myopia (from 3 to 6 diopters)	19
Considerable myopia (more than 6 diopters)	16

Where the lighting of the school was not good, myopia was found to be more frequent and severe[2]; and Professor Bryan, of the University of Indiana, U.S.A., mentions that in the test of 3,000 school children, a *defect of vision, increasing from grade to grade with increase of school requirements, was clearly exhibited.*[3] Prophylaxis involves—

(*a*) Proper lighting of class-rooms, *i.e.*, direction and quantity of light properly determined.
(*b*) Adaptation of desks to pupils.
(*c*) Adaptation of reading and similar material to pupil's sight.

Later on other elements of prophylaxis will be referred to, viz.:—

(*d*) Suppression of all home-work for lower classes, and reduction to a minimum of hours of home-work for upper classes.
(*e*) The adoption of upright writing.

Other defects of vision and their percentages were found to be[4]:—

	Per cent.		Per cent.
Hypermetropia	2·3	Mixed astigmatism	0·3
Myopic astigmatism	1·5	Irregular astigmatism	4·3
Hypermetropic astigmatism	9·4		

These however, shewed no signs of augmention with age or class, and therefore could not be considered as in any way a consequence of school-work. The production of the myopic condition is evidently the chief danger.

3.

[1] Résumé d'hygiène scolaire, par le Docteur A. Combe, p. 88.
[2] The statistical results are directly taken from or are deduced from those given in the work above cited.
[3] See Report of the Commissioner of Education, 1893–4, vol. 1, p. 451.
[4] Hygiène scolaire, p. 93.

3. *Defect of hearing.*—Germany, Paris, and the United States discovered almost simultaneously that defective hearing among children is also far more usual than one is accustomed even to suspect. Weill, of Stuttgart, found that 20 to 30 per cent. were more or less deaf. About 20,000 children were examined in other places, one examiner reporting only 2 per cent. of defectives, eleven others from 13 to 30 per cent. Sensitiveness of hearing varies greatly, apparently by natural endowment, and this original difference is subsequently affected by the various diseases of childhood, as for example, eruptive fevers, followed often by suppuration of the ear, with perhaps perforation of the tympanum. Catarrh, inflammation of the throat, of the nasal fossa, involving often the Eustachian tube, adenoids, etc., do their work only too well in producing deafness.

This hardness of hearing is often not suspected by parents, because the child close to them hears apparently all that is said, and acts, as regards games, etc., normally. At school, however, he hears imperfectly; mistakes one word for another; mistakes the sense of words; misunderstands the meaning of statements or passages read; and the poor unfortunate is too often credited with being backward, idle, or inattentive. Here this often involves him in punishment (corporal).

The remedy is naturally to place such pupils as near as possible to the master, in full view of his face, and to exact of the latter a somewhat deliberate speech, with very clear enunciation. It is said by hygienists who have studied the subject that the rate of four syllables per second is about the limit of distinct utterance; and a trial will readily convince anyone that that is really the upper limit of finished articulation in speech.

4. *The ascertainment of defective vision and audition.*—In the schools of cities and the larger towns this ought to be done by properly qualified physicians, who, as will later be pointed out, ought to be officers of the Public Instruction Department, and specialists in hygiene, and in the statistical analysis of results.

In country schools this arrangement is impracticable, and therefore, as is done in Switzerland, the director or head master of the school ought to know how to make simple tests of sight and hearing.

First, as to test of vision.—It is, of course, impossible for the ordinary untrained observer to do more than appreciate serious visual defects. The following suggestions seem as good as any that have come under notice:—

(*a*) Write on the board a sentence only just large enough to be read at the remote end of the room by a pupil with normal sight. Then let the children suspected, or to be tested, move towards the board till all is clearly seen. This will give the limiting position to place them. Get the children to examine the writing with each eye separately.
(*b*) Observe what pupils seem to suffer from an ordinary degree of light (photophobia).
(*c*) Examine with a set of test-cards, using the several types for distance, the radiating lines fo astigmatism.

Where defects are observed, it is eminently desirable that the case should be referred to a school-physician.

Secondly, test of hearing.—A simple test adopted in some parts of Switzerland is to place the child at the blackboard, then the master, speaking in his ordinary tone, and using words easily confounded, but within the comprehension of the child, or better, perhaps, dictating numbers, stands at the furthest desk. It the child does not hear distinctly, the master moves toward the board, finding out in this way at what row the child hears well; that, then, is the row beyond which the child ought not to be placed. Each ear ought to be tested, the other ear being kept closed.

The relative distances at which a watch can be heard, may also be used as a scale of distance, placing the defectives accordingly. These, of course, ought to be referred to the school-physician, as the matter is not unimportant.[1]

5. *General physical defects.* B 1, i (*a*).—*Breathing* through the nose is important for the human organism, and affects favourably physical and mental vigour, the memory, the power of attention, etc. By insisting on the closure of the mouth, and testing at different times, the defectives can be ascertained, and should be referred to the school-physician.

Deviations of the vertebral column exist in very many children. Lorenz, of Vienna, somewhat recently wrote: "Hereby the idea of the extreme importance of speedy treatment of deviation of the vertebral column (scoliosis), as soon as it appears, should be better recognised by physicians. . . . . It is to be hoped that the cry of alarm, which several surgeons have made during recent years, will be heard, and that the school statistics . . . . . demonstrating the increase of vertebral deviation, will *open the eyes of school authorities.*"

From a treatise by Drs. Scholder, Weith, and Combe,[2] it appears that the deviations of the vertebral column, or "spinal curvature" as it is sometimes loosely called, are frequent in Switzerland. The basis of their inquiry was the determination in the Lausanne schools of—

(1) The physiological curvature of the vertebral column.
(2) Antero-posterior pathological curvature or incurvation.
(3) Lateral pathological curvature.

In 2,314 children examined in Lausanne there were 135 with antero-posterior curvatures—say, 5·8 per cent. These may be divided into those affected with—

i. *Cyphosis* or rounded back, which arises from the following causes:—(*a*) Muscular weakness; (*b*) myopia, insufficient light, small print; (*c*) fatigue due to prolonged sitting in the one position; (*d*) atrophy or paralysis of the muscles of the back; (*e*) rachitis;
ii. *Lordosis*, or hollow back, *i.e.*, forward incurvation, which is due to—(*f*) Rachitis; (*g*) the large abdomen of children; (*h*) the *sitting up straight* often inculcated; (*i*) paralysis of the muscles of the back,[3] etc.; and
iii. Those that suffer from *Cypholordosis*, or a combination of the two, similarly caused.

The

[1] See P. Riemann's Beeinflussung des Seelenlebens durch Taubheit Kinderfehler 1900. Vol. V, pp. 241–269.
[2] Les déviations de la colonne vertébrale dans les écoles de Lausanne, Zurich, 1901.
[3] *Cf.* The behaviour of amyotrophic and poliomyelitic patients.

The frequency of lateral deviation of the vertebral column is also greater than is generally thought, *although rare in the new-born*. Coville, who examined 1,000 newly-born children, found only a single case of congenital scoliosis.[1] That this is a *school disease* is only too terribly apparent when one regards the statistics. For example, in 294 scoliotic children examined, the division was as follows:—

Before school-age.		*During school-age.*	
0–2 years	2	6– 7 years	71
2–3 ,,	3	7–10 ,,	159
3–4 ,,	8	10–14 ,,	38
4–5 ,,	5		
5–6 ,,	8	Total before school-age	26
		,, during school-age	268

It was affirmed that these results were inconclusive, for obvious logical reasons. Krug, of Dresden, however, examined 200 children before entrance into school, all of whom were free from scoliosis. Two years afterwards no less than 42 were scoliotic.

Combe and others, of Lausane, found, in	2,314 children,	571 scoliotic	=	25 per cent.
Guillaume, of Neuchâtel	,, 731 ,,	218 ,,	=	29 ,,
Krug, of Dresden	,, 1,418 ,,	357 ,,	=	25 ,,
Hagmann, of Moscow	,, 1,664 (girls)	?	=	29 ,,
Kallbach, of St. Petersburg	,, 2,333 ,,	?	=	26 ,,

Well may Kocher declare that *scoliosis is a school-disease!* And "he who runs may read" the *duty that devolves upon those who are responsible for the hygiene of our schools.*

Another point is worthy of notice. Orthopædists generally affirm a great preponderance of scoliosis in the female sex. Thus Eulenberg, Ever, Resch, Roth, Wildbergen, Behrend, Adam, Scholder all give results shewing that six-sevenths of scoliotic cases are girls; but the following results explain how this happens:—

Krug, in Dresden, found in	691 boys	181 scoliotic	= 26·0 per cent.
	723 girls	163 ,,	= 22·5 ,,
Combe, etc., Lausanne, found in	1,290 boys	297 scoliotic	= 23·0 per cent.
	,, 1,024 girls	274 ,,	= 26·7 ,,

Now, it appears that in the primary schools, where piano-exercises, embroidery, painting, etc., are not, as in the superior schools, superadded to the fatigue of the ordinary school-work, the proportion of scoliotic boys to girls is about equal. That the injurious influence of school-work is evidenced for both sexes appears in the following results, giving the percentage of scoliotic pupils for each age:—

	Age in years.	Boys, per cent.	Girls, per cent.	Age in years.	Boys, per cent.	Girls, per cent.
Lausanne	8	8	9	11	24	31
	9	17	20	12	27	30
	10	18	22	13	26	38
Totals		43	51		77	99
Dresden	8–10	11	17	12–13	28	21
	10–11	17	17	13–14	35	31
	11–12	28	21	14–16	33	32
Totals		56	65		96	84

Scoliotic and myopic trouble progress together, as will be seen from the following results from the examination of 2,314 children:—

Classes (lowest to highest)..	VII.	VI.	V.	IV.	III.	II.	I.
Percentage of scoliotic.....	9	18	20	27	28	32	31
,, myopic	3	5	5	6	9	14	19

The *Lateral deviations* are of three kinds, *sinistro-convex*, *dextro-convex*, and combined; and are referred to the region of the vertebral column, as *dorsal*, *lumbar*, etc. They may also be associated with incurvations, *i.e.*, with the antero-posterior deviations.

The disposing causes are (*a*) heredity, (*b*) anæmia, (*c*) muscular weakness, (*d*) rapidity of growth,[2] (*e*) rachitis, (*f*) goitre and myxœdema. Prophylaxis is much the same as for myopia. The question of position in writing, a matter of considerable importance in this respect, will be considered later. It may be added, finally, that *a good gymnastic will do much to remedy some of the defects of the vertical column.*

6. *Anæmia.*—Anæmia is, unfortunately, only too well in evidence in the schools of our State. Inquiry has shewn beyond doubt that even the ordinary conditions of school-work tend to develope it. According to Duval, the more direct causes of this kind are (*a*) indifferent quality of the air respired; (*b*) excessive heat in the class-rooms; (*c*) insufficiency of muscular exercise; and (*d*) cerebral fatigue.

In regard to (*a*), it may be said that the proper oxygenation of the blood demands a large proportion of oxygen, and a small quantity of carbon dioxide in the respired air. The breathing of air, charged with the anthropotoxines respired by the pupils, also adds to the injury. Anæmia arises from (*b*) and (*c*) in much the same way; that is to say, the oxygenation is inadequate, and not at all comparable to that which comes from the increased action of the heart and lungs in open air. The question of cerebral fatigue will be relegated to a subsequent section of this chapter.

[1] Revue orthop. No. 96, p. 309.

[2] Combe. Zeitschrift für Schulgesundheitspflege. 1896, p. 688.

7. *Caries, Adenoid Growths, etc.*—Everywhere, it is affirmed, dental diseases are on the increase, and in this State, as is well known, we have quite our share of such trouble, and early decay of the teeth is very common. A child suffering acute toothache is absolutely incapable of receiving the normal benefits which his school is able to bestow; in fact, his attendance during trouble of this kind is of very little value. The children of the poorer classes are, perhaps, the greatest victims, even when they are very young, and in these State schools, where the pupils are drawn largely from this stratum, the instruction, whatever its quality, must often lamentably fail of its due effect.

The same is also true wherever children are *inadequately nourished*, as is occasionally the case among the lower working classes. With school-physicians it would be comparatively easy to deal with these troubles, at least in their more aggravated forms. In many schools in Europe the children are actually provided with a good, substantial meal, either free or at a purely nominal charge.

Adenoids are a source of deafness too often unrecognised.

8. *Brain, nervous, and minor diseases.* B 1, i (*d.*)—The circumstances pointed out as leading to the anæmic condition are productive also of headaches, nasal hæmorrhage, etc.; that is to say, cerebral work, a forward leaning position for the head, a vitiated atmosphere, which is, moreover, often unpleasantly warm, are determining causes of these maladies. Very often the conditions in the homes of the children are also far from being satisfactory. Two attitudes are possible: the one that, as long as the school is better than the home, it is satisfactory; the other, that the State does well to see that *at least while the child is at school it shall live hygienically*. The latter is the spirit which is governing Europe and to some extent also America at the present day, and which tends to build up a capable and vigorous people.

Epilepsy, unfortunately, occasionally presents itself in schools. It is very desirable that, as far as possible, other children, especially the younger ones, should avoid the spectacle, as their imaginations are often strongly affected, and insomnia, or grave nervous disorder, may follow. So strongly is this felt by some school hygienists that they recommend that "every epileptic should be sent away from school until complete recovery, certified by medical declaration, the recovery being assured by the lapse of a considerable period of time."

Chorea, etc.—Children that exhibit twitching of the eyelids, rhythmical motion of the eyeball, twitching of the face, hand, or fingers, muscular restlessness, marked inattention, grinding of the teeth, stammering and stuttering, whose writing is apt to be strangely irregular, ought to be referred to the school-physician. Some simple further indications of nervous disease, however, ought to be known to every pædagogue, as, for example, absence of iris-reflex on the exposure of the eye to light after it has been shaded a little while; inability to stand on one foot with the eyes closed, etc.—a symptom of motor inco-ordination. Cases of *chorea* (St. Vitus' dance), though not so serious as epilepsy, ought also to be sent away at once from the school, on account of the imitative tendencies of children, as well as for the patients' own sakes.

Retarded intelligence.—The tardy appearance of intelligence is usually associated with slow physical development, slow dentition, walking, speaking, etc.; the intellectual development sometimes even approaches zero. Children so afflicted ought to be made the subject of special treatment, which will be discussed in a different chapter.

There are one or two maladies which require the banishing of the patient, despite the fact that they are not in themselves very serious. For example, such maladies as *ozæna* and *enuresis* (incontinency of urine); the former on account of the extremely offensive smell, the latter on account of the unpleasant odour due to ammoniacal fermentation.

9. *Infectious, contagious, and parasitic diseases.* B 1, ii.—Passing now to infectious, contagious, and parasitic maladies, their order of gravity is pretty nearly as follows:—

Grave—Variola (small-pox), (plague), diphtheria, febris scarlatina, tuberculosis (consumption, etc.).
Ordinary—Rubeola (measles), febris typhoides (typhoid), influenza, pertussis (whooping-cough).
Slight—Varicella (chicken-pox), parotitis (mumps), roseola (rash).
Eye diseases—Gonorrhœal ophthalmia, purulent conjunctivitis, granular conjunctivitis, catarrhal ophthalmia (blight).
Skin diseases—Tinea capitis (ringworm of the scalp), alopecia (falling out of hair), herpes circinnatus (ringworm), scabies (itch), eczema impetiginodes, impetigo.
Mouth diseases—Stomatitis (ulcers of mouth).

Variola (small-pox).—Fortunately this State has so far escaped the first-mentioned disease. Should it once get a hold it would be necessary to issue detailed instructions to all schools, conveying the latest special knowledge as to prophylaxis and general precautionary measures. The last remark applies also to what is also popularly known as *plague*.

The following indicate Swiss opinion as regards isolation, etc.:—

Diphtheria.—The bacillus, discovered by Lœffler, affects the entrance of the respiratory and digestive organs. The disease is contagious. The germs contained in the membranes are ejected, infect the air, the clothing, etc., not only of the patient, but also of those about him, and, being dried, may then be carried to a distance. The germs are difficult to destroy, and, after months, and even years, of exposure to heat and cold, they are still living and able to develope the malady.

For this reason, "pupils ill with diphtheria, their brothers, sisters, and all who have come in contact with them, shall be excluded from school, and shall not be readmitted except on producing a medical certificate that they have recovered, or that their return to school is without danger."

Scarlatina.—This malady, marked by strong fever, vomiting, headache, very sore throat, a scarlet eruption, abates in a few days; but then *desquamation commences, and continues for several weeks.* The flakes of skin, unfortunately, are able to spread the malady, which is sufficiently tenacious of life to be transmitted great distances. Hence the rule: "Every infant affected with scarlatina, and everyone who has been in contact with him, should be excluded from the school, and should not be readmitted except on medical certificate testifying that all danger is passed."

Tuberculosis.—The germ of phthisis, unfortunately, is found in the sputa of people affected with the disease; the dried sputum, converted into dust, infects the air with the germs of the contagion. Hence the dictum of the Swiss and many European hygienists: "It is of the highest importance for the health of pupils that every person affected with phthisis should be excluded from the school."

Rubeola.

Rubeola.—The virus of measles is found in the mucous discharges which are associated with the severe cold in the head, and the bronchitis with which the attack commences. *Hence it is contagious before the fever declares itself or the rash becomes visible.* For this reason, in many places the isolation of rubeola patients has been abandoned. In other places, it is believed that "the affected child, his brothers, sisters, and 'contacts' with them, should be sent away for three weeks," so that the school shall not become a source of infection.

Typhoid.—As typhoid is not propagated by direct infection, the brothers and sisters of the pupil affected are not excluded from school, at least where the sickness receives proper sanitary attention; that is, where the disinfection of stools, of the soiled linen, etc., is properly attended to. But "the children affected should be excluded from school until complete recovery."

Influenza.—Influenza is a very contagious malady, consequently it is recommended that "children affected should, with their brothers and sisters, be excluded for a fortnight."

Whooping-cough.—The initial stage is like an ordinary or bronchial cough, but in the second week it becomes convulsive. The virus is in the mucus which the child expectorates, and this, dried, spreads the malady. The brothers and sisters of the patient may carry the germs in their clothes. For these reasons "children suffering from whooping-cough, together with their brothers and sisters, ought to be excluded, for the whole of the convulsive period, or say six weeks at least, and ought not to be readmitted except on production of the certificate of complete recovery."

Varicella, Parotitis, Roseola (chicken-pox, mumps, and ordinary rash) are not serious, and "children affected may be readmitted instantly on recovery"; the brothers and sisters do not need to be excluded.

10. *Eye diseases.*—Various forms of preventible eye disease are frequently met with in the schools of this State ranging in seriousness from *gonorrhœal* ophthalmia down to *catarrhal ophthalmia.* And here there is acute need for teaching children that they should not convey their fingers to their eyes, except with great precaution as to cleanliness, and similarly too they ought to be warned as to the danger of allowing flies to remain upon them. Further, the lavatory arrangements in our schools are seriously defective in guarding against such infections.

11. *Parasitic diseases.*—Both *tinea capitis*, or "scald head," and the milder form of ringworm of the head ("la veritable teigne," and "la teigne tonsurante," of the French) are both very contagious and difficult to cure. Another form of ringworm frequently occurring is not contagious ("la teigne pelade").

Herpes circinnatus (ringworm) is very contagious, but easy to cure. It is often taken from dogs, cats, etc., a fact which children should know. "Children affected therewith ought to be sent away from school, and readmitted only on presenting a declaration of complete cure."

Scabies (itch) no doubt troubles those lacking in cleanliness most, but it may also affect the cleanest and most careful. The child should be remitted to the school-physician.

The *Pediculus capitis* (louse) in course of time developes a special eruption that also has been called "granular ringworm" ("la teigne granuleuse," of the French).

In America, where there are a great many poor immigrants, it has been found very necessary to establish precautions against discomfort to other pupils, from immigrant children affected with any of the above troubles. The following is the treatment noticed:—

The children are thoroughly bathed; their heads are specially treated with a wash destroying the pediculus, the hair being cut or shaved if necessary, and the sores if any are treated with oil or an unguent. Whatever their past habits may have been, it is found that the children soon acquire habits of cleanliness; and once learnt, both public opinion and their own sense of comfort keep them in the good way.

Impetigo of the head, etc., *eczema*, and *impetiginous eczema* are not *seriously* contagious; and, as long as the children are submitted to treatment, there is no objection to their remaining at school.

Prophylaxis in these matters is assured by having sufficiently large vestiaries, each child being assigned a certain place with a definite number, and *no child being allowed, under any circumstances, to use the place of another.* There is nothing like an adequate sense of the unwisdom of promiscuity in our State schools.

12. *Prophylaxis and disinfection.—Cleanliness* goes a long way in safeguarding against the various ills that menace us each day; and from the kindergarten up, it should be strenuously inculcated. The ordinary maxims about the importance of disinfection can be easily instilled into children, and their customary heedlessness in conveying their fingers to their mouths, eyes, etc., can be corrected. A knowledge of the general nature of disease, and in particular of germ-diseases, is also easily imparted, and is very important.[1]

After the appearance of grave contagion in a school it is necessary to disinfect it. This is carried out in some countries by a service expert in the matter. The hair of the disinfector is covered with a calico cap; the ordinary clothes are protected by special pantaloons and overalls of similar material, fitting at the neck and ankles tightly. A solution of mercury-perchloride (corrosive sublimate), 1 in 1,000, is largely used. The washing is done very thoroughly. After disinfection, all furniture is, if possible, left several hours in the sun.

Articles that cannot be washed, are cleansed with rag, soaked either with sublimate solution, or with a solution of formaldehyde (formalin), or they are subjected to sulphurous acid gas, or to the vapour of paraformaldehyde (solid formalin). For the sulphurous acid disinfection, the acid liquified under great pressure (Pictet liquid) in steel syphons is very convenient. The latrines, urinals, lavatories, etc., are also carefully disinfected with the sublimate solution. A solution of the so-called chloride of lime, or a milk of lime, made with about 100 of lime to about 50 of water, is used for the sewers, etc.

[1] In order to make the instruction intuitive, charts shewing typical germs would be useful, since they would interest children, and impress their minds with the reality of the existence of such germs.

13. *Belgian directions as to hygiene.*—The practical instructions for the use of all public departments in Belgium, including schools, for "the prevention of the appearance of transmissible diseases and combating their propagation," are very thorough. In the 1902 edition the contents deal with the following subjects:—

PRELIMINARY NOTIONS: GENERAL INSTRUCTIONS.

I. *Information.* II. *Isolation.* III. *Disinfection.* IV. *Sanitation.*

III. (A) *Disinfection during disease.*—Disinfection of morbid matters, of persons, of linen, clothing, etc.
(B) *Disinfection after the disease.*—I. Operations in the house—(*a*) with gaseous formic-aldehyde; (*b*) by washing. II. Operations at the disinfecting station—(*a*) by steaming; (*b*) by wetting; (*c*) by formic-aldehyde.
(C) *Communal disinfecting service.*—(*a*) personnel; (*b*) material; (*c*) station; (*d*) disinfecting stoves; (*e*) apparatus for gaseous formic-aldehyde.
IV. *Sanitation*, in respect of:—
(A) 1, plague; 2, cholera; 3, typhoid fever; 4, small-pox; 5, scarlatina; 6, diphtheria; 7, measles; 8, whooping-cough; 9, erysipelas; 10, puerperal fever; 11, granular ophthalmia.
(B) 1, tuberculosis.
(C) 1, exanthematous typhus; 2, military fever; 3, dysentery; 4, chicken-pox; 5, mumps.
(D) 1, anthrax; 2, glanders or farcy; 3, hydrophobia.
(E) 1, trichinosis; 2, tænia; 3, juvenile anæmia; 4, itch; 5, ringworms.
(F) 1, syphilis; 2, blennorrhagia.

The information given throughout is very complete, both as regards symptoms and disinfection, and as regards the special reasons for care in each case. One example will suffice for the purpose of illustration. The disease, scarlatina, *e.g.*, is thus referred to:—

"*Scarlatina.*—The period of incubation varies from two to fourteen days. The disease comes on quickly, with a violent access of fever, usually accompanied by sore throat. The eruption, formed of red patches, commences on the neck and on the front of the chest, and extends therefrom to the rest of the body. About the ninth day the fever has ceased, the eruption has faded, and the skin commences to peel off. These pellicles and flakes of skin continue to fall off from two to four weeks.

"Scarlatina is a very contagious malady, of epidemic character, varying greatly in malignity. It is always a serious disease, not only in itself, but also in its later consequences (albuminuria, etc.).

"The germ of scarlatina is not known, but it is certain that the seat is in the pellicles and flakes of skin. It appears to exist also in the secretions of the nose and throat. It is after recovery, and during the period of desquamation, that contagion is most to be feared. The contagious germ is extremely resistant, adhering to objects and retaining its noxious character for weeks and months.

"The contagion can make its way directly—that is to say, by direct contact with a scarlatina patient—or indirectly, viz., by the intermediary of healthy people or objects that have been in contact, not necessarily immediately, with a person affected with scarlatina. Among other things may be indicated bedding, linen, furniture, playthings, and even letters and milk."

The detailed directions for isolation, disinfection, etc., are as follows:—

"1. The patients should be completely isolated. The brothers and sisters of the child affected with scarlatina, and all the children in the same house, should not attend school, at least, until two weeks have passed since the complete isolation of the patient, this isolation having been certified as perfect by the attending physician.

"2. The persons nursing the patients should be themselves submitted to all the directions indicated in the chapter on isolation. They should be covered with a special overall, which should be taken off on disinfecting themselves to leave the room.

"3. The disinfection ought to rigorously conform to the general instructions. It must apply to the walls of the room, floor, clothes, bedding, and all the objects which the patients have used. The disinfection of the rooms and furniture ought to be made with formic-aldehyde (formalin); that of the linen, bedding, clothes, should take place in the vapour stove. The flakes of the skin ought to be collected as carefully as possible, thrown into solution No. 2, or destroyed by fire.

"The same applies to playthings and objects of little value, as also to the books and the copybooks of the pupils.

"4. The child should not return to school till the desquamation has completely disappeared (about six weeks after the beginning of the disease), and till he has had several soap-baths. A certificate of the attending physician should be demanded for readmission.

"5. If several cases simultaneously or successively present themselves in any school . . . . a disinfection of the place will be directed."

The above passage will give a fair idea of the degree of thoroughness of the hygienic directions. The whole document is about 150 pages. It is couched in language—slightly technical at times, perhaps—that ordinarily intelligent people can readily understand, and contains plates illustrating very fully the apparatus at a disinfecting station. It may be mentioned that it is an extract from the "*Bulletin spécial du Service de santé et de l'hygiène publique*," and, as a guide for public bodies, answers requirements very satisfactorily.

14. *Circular concerning infectious diseases in N.S.W.*—The following is the official memorandum touching the matter of infectious and contagious diseases for this State:—

MEMORANDUM FOR THE INFORMATION OF TEACHERS.

INFECTIOUS AND COMMUNICABLE DISEASES.

The Minister of Public Instruction has approved of the following suggestions, submitted by the Board of Health, in substitution of the directions contained in the Chief Inspector's Memorandum of 30th April, 1894:—

The Public Health Act, 1896, expressly forbids the sending to school of any child who "within the previous two months has been suffering from an infectious disease, or who has been resident in any house in which such disease has existed within the space of six weeks, without furnishing the head teacher of the school with a certificate from a legally qualified medical practitioner that such child is free from disease and infection." (Section 28.) It is the duty of every teacher to protect his scholars by taking care that this law is duly executed in every case which comes under his notice.

By Regulation under the Act the local authority for the district is required to furnish the head teacher with a notice of the occurrence of any of the statutory infectious diseases in the person of any of his scholars as soon as such occurrence is reported to it. If a teacher finds that the local authority does not promptly give him this warning, he should report the neglect with a view to its being made known to the Department of Public Health, so that steps may be taken to remedy it.

Statutory

[1] Solution No. 1 is—corrosive sublimate, 10 grammes; common salt, 100 grammes; water, 10 litres (1 in 1,000). Solution No. 2 is—250 grammes of soft-soap, melted with 250 grammes of cresol, then mixed with 10 litres of water. No. 3 is merely milk of lime.

Statutory "infectious" diseases are those declared to be such by proclamation in the *Government Gazette*. At the present time they are three in number, viz.:—

Typhoid fever,
Scarlet fever, and
Diphtheria and croup;

and the abovementioned law and regulation apply to them only.

But there are many other infectious or communicable diseases; consequently, whenever possible, the teacher should obtain medical evidence as to the kind of illness suffered by any scholar who ceases to attend school on account of alleged illness, and, if the disease is one of the communicable kinds mentioned in the additional list of such diseases given below, no other child residing in the same house should be admitted to the school while the illness lasts. The patient and other children from the same house should not be readmitted to school until the teacher is satisfied that the risk of infection is over. This, of course, is best ascertained from the medical man, if any has been in attendance.

Whenever more than one child from the same house is absent from illness at the same time or in quick succession, no matter what name is given to the complaint, the teacher should be especially careful in his inquiries as to the nature of the illness, as an infectious disease may not be recognised at first, or may be wrongly named.

The teacher should take note, especially when an epidemic threatens or is present, if any symptoms occur in any of the scholars which might indicate the commencement of disease, such as heat of the skin, shivering, headache, and langnor, especially if they begin suddenly; also vomiting, rashes on the skin, or sore throat. Measles is very infectious in its early stages, even before the characteristic rash has appeared, and while the symptoms resemble those of a common cold. When scarlet fever or diphtheria are in the district the teacher should be especially careful when scholars show throat symtoms, for these usually mark the commencement of those diseases; and, if necessary, he should himself look at the scholars' throat, when he would sometimes be able to detect unusual redness, or white specks or patches, indicating a diseased condition. Alteration in the accustomed tone of a scholar's voice (speaking through the nose, etc., etc.) is often due to partial paralysis of muscles about the throat; and diphtheria, which is not always an acute disease, is a common cause of it. When observed, therefore, the scholar should be excluded (*a*) until recovered, or (*b*) until positively certified by a medical man not to have been suffering from diphtheria. It is a prudent precaution not to allow a child who has had diphtheria to return to school under three months from the beginning of illness.

If a case of infectious or communicable disease occur in the house in which a teacher lives, he should remove, arranging so that he wears clean clothes at his new residence until those which have been exposed to infection can be cleansed, etc. If removal be impossible he should refrain from attending school until such time as the risk of conveying infection to the scholars has passed.

For the purposes of these instructions, the following are also communicable diseases, in addition to the three statutory infectious diseases already mentioned above:—

Measles.	Chicken Pox.
German Measles (Rötheln)	Whooping Cough.
Mumps.	Influenza.

It is requested that you will give careful attention to these suggestions.

By order of the Minister,

Department of Public Instruction,
Sydney, 9th January, 1899.

F. BRIDGES,
Chief Inspector.

15. *Conditions of school work.*—B. 2. 1. The question of lighting, ventilation, heating and cooling, and school furniture has already been referred to. The object throughout is to avoid all occasion of unnecessary fatigue, all undue tasking the organs of sense, all injurious postions of the body, and to have the oxygenation of the blood, and all life-giving conditions at their maximum.

16. *Position in writing.*—The position of scholars at work, especially *in writing*, is a matter to which reference may now be made.

If one sits symmetrically in front of a table, placing paper or copy book thereon directly in front of him, he must, on attempting to write, inevitably execute what is called upright writing. A sloping hand is practically impossible. Now, this position is the only absolutely symmetrical one, and, therefore, *prima facie*, it follows that upright writing executed in it is best from the hygienic point of view. The researches of men like Schubert of Nuremburg, Cohn of Breslau, Mayer of Fuerth, Schenk of Berne, Roux, Eperon, and Combe of Lausanne, Javal at Paris, Fuchs at Vienna, Fahrner, Ellinger, Gross and others at Zurich, and many others, have abundantly shewn that cases of deviation of the vertebral column, of myopia, etc., are more numerous in classes where sloping writing is practised than in classes that adopt upright writing. And, further, the testimony is unanimous that the carriage of the body is better in all classes that adopt this form of writing, *the advantage being conspicuous*. In Basel, in 1892, the résumé of a report on the subject stated that, "In the classes where upright writing is adopted the carriage of the body, apart from every other point of view, is better than in those where slanting writing is retained. In two parallel classes, subjected to exactly identical work, out of forty-eight pupils who wrote upright writing only two had a defective carriage, while, out of forty-three who wrote sloping writing, fifteen were imperfect."

A special commission appointed in Zurich in 1893 reported, "Taking into account the hygienic advantages of upright writing, we decide in its favour."

In order to discuss this question clearly, one or two definitions are necessary. The position of the copy book is said to be:—

Median, when exactly in front of the pupil.
Lateral, when on his right hand, as is usual for sloping writing.
Upright, when the bottom is parallel to edge of desk.
Inclined, when it makes an angle therewith; the inclination invariably requires rotation counter clockwise. This may be called *left* inclination.

Automatically, the heavy or down strokes are produced by *flexion* of the finger joints; the light or up strokes by an *extension* of them, with slight rotations. Now, the copy book being *upright*, in whatever position it is, even if to the left of the body, it will be found that down strokes are, by this flexion, *directed towards the middle of the chest.*

It

[1] The region of exact vision is very small;

It follows from this that, when no special effort is made, the *inclination of writing depends solely on the position of the paper.* Thus for—

Paper or copy book upright gives :—
Median position—Down strokes upright.
Lateral position—Down strokes slanting to right.
Paper or copy book inclined left gives :—
Median position—Down slopes slanting to right.
Lateral position—Down slopes slanting greatly to right.

That is to say, for lateral position the writing is always inclined (except by equal counter rotation to the right, which need not be considered.

Consider the sight line of each eye, *i.e.*, the line from each to any point seen clearly.[1] The plane passing through this point and containing these lines, or what is the same thing, the plane determined by the point seen and the centres of the eyes (or, say, the pupils), is the *plane of vision.* The intersection of this plane with any surface may be called the *transverse line of vision*, or, more shortly, the *vision line.*

By instinct, the vision line tends always to take up the position at right angles to the down strokes in writing, as can easily be seen by rotating a book in front of one. The vision line is rotated—by rotating and bending the head—in order to read with comfort. Now, this happens also in regard to writing, as anyone may notice by watching young children at their attempts to write with their copy books or slates, etc. in the lateral position. This head rotation will obviously have some physiological effect, which we may now examine.

It is known, and it will be easily seen on reflection, that the lateral position involves either :—

(*a*) Rotation of the head to the right, with bending of the head toward the *right shoulder*, both becoming greater in proportion as the paper is inclined.
(*b*) Rotation of the head to the right, with bending toward the left *shoulder.*

Fatigue often leads from a change of one position to the other, generally (*a*) to (*b*). Again :—

(*c*) The eyes are rarely at equal distances from the paper, hence the temporary myopia is different for the two eyes.

Its becoming definitive from habit, explains the observed fact of a common variation of the myopia in the eyes of school children. The asymmetry of position leads to fatigue, and to the close approximation of the eye to the paper with its myopia-producing tendency.

On viewing from the rear, the figure of a nude child writing and seated in this position, it will be readily seen that the result either of the upright, or of the inclined lateral position is a curvature of the vertebral column ; so that *this position must be regarded as injurious and it ought to be rejected.*

In the median position with the paper upright, everything is symmetrical ; nor can there be, if the desk be the proper height, either myopic tendency, or tendency to any form of scoliosis.

Some have recommended sloping-writing with the paper upright in the median position. This, it will be seen on examination, produces a torsion of the body with a sinistro-convex deviation of the spinal column.

If the paper be inclined in the median position, there is still the same tendency to rotate the trunk of the body and to bend the head, producing dextro-convexity of the vertebral column and myopia.

For these reasons, scarcely more than suggested, it may be concluded that :—*The median position, with the paper upright, is the best position from the hygienic point of view*, and therefore in the earlier years of school-life, *only upright writing, with the paper upright and in front of the pupil, ought to be permitted.*

In the highest classes, if sloping writing be desired, the paper or book should be in the median position inclined not less than 30°.

It is alleged by some that upright-writing is less free, less delicate, less æsthetic than sloping, and to obtain this grace it is worth while making some sacrifice. Those who have really learnt what the sacrifice is, do not appreciate the force of this opinion ; but rather would make custom conform to the celebrated formula of "Georges Sand"—"Ecriture droite, papier droit, corps droit"—*i.e.*, let the writing, paper, and body be upright.

[Mr. J. W. Turner would recommend sloping writing, the down strokes however being only about one-eighth of a right-angle from the vertical, leaning of course to the right. Mr. G. H. Knibbs prefers upright writing, for the reasons above indicated.]

17. *Physical and mental fatigue.*—B. 2. ii (*a*). It would be hard to over-estimate the significance of the work of men like Axel Key of Norway in his investigation of the physical condition of growth ; of such researches as those of Dr. Kotelmann, of Vienna, which aim at a thorough understanding of the phænomena of mental fatigue ; of inquiries like those of Dr. Preyer's into the stages of intellectual growth ; and Dr. Ziehen's into the scheme of association of ideas in children. Some faint idea of the activity of study of the conditions of child-life may perhaps be had when it is remembered that the treatises on this subject for 1900 alone numbered about 331, and all these have the object of determining the factors concerned in our best evolution. Hence they are of great importance to the pædagogue from the hygienic point of view. Both on the physical and mental side, the question of fatigue has been carefully investigated with a view of determining the part it plays in developing or hindering our general educational evolution.

Leo Bürgerstein, of Vienna, at a meeting of the Society of Hygiene in London in 1892, represented the results of his investigations on mental fatigue graphically, by a curve now known as the fatigue-curve. The following year, 1893, Professor Hoepfner of Berlin, shewed also the results of further investigations of the same phænomena. In 1894, Professor Emil Kraepelin[1] discussed the limit of the mental capacity in youth, from the physiological and psychological standpoint. From these writings it appeared that overmuch mental pressure was being placed upon youths, greatly to the detriment of their health. Dr. Gustav Richter opposed so serious a view in his rediscussion of the whole question ; and Dr. Otto Jäger, in reviewing Kraepelin's work, has remarked that in an experience of forty years of both small and large educational institutions, he has, after all, found but few bad cases of nervous disease.

Axel

Axel Key, of Stockholm, in his school-hygiene investigations of 1889, where the children then in the upper grades had fourteen hours (?) of daily work to perform, found thirty-six per cent. of the girls chlorotic, and ten per cent. with deviation of the vertebral column. Outside myopic cases, nearly forty per cent. of the children in the schools of Sweden and Denmark were said to suffer from chronic diseases. Dr. Heinrich Schuschny, of Budapest, also found that over forty-six per cent. of the children in a certain institution suffered from nervous symptoms; and Professor Nesteroff in Moscow, who observed 216 students for four years in a Moscow gymnasium, states that the number of nervous ailments ranged from eight per cent. in the preparatory to sixty-seven per cent. in the highest grade.

This shews the need of care as to the possibilities of overwork, or of indifferent conditions, or of a mixture of both; while however, in itself it is not conclusive, since other than purely pædagogic causes may be operative.

Professor M. V. O'Shea of the School of Pædagogy in the University of Buffalo, in a discussion of this question,[1] argued that, provided school buildings be hygienic, the dangers supposed are not so acute as sometimes imagined, and he evidently considered that we do well not to be overpowered by any tendency to microscopic view of the hygienic specialist. It may be well to indicate the modern views of fatigue.

Dr. W. W. Krohn, a specialist in psychology, remarked that when mental disintegration takes place, it is the finest mental faculties that are the first to prove victims, and in pointing out that even the minor mental abnormalities require to be carefully sought for, otherwise the mischief may be irreparable, and that fatigue is the common source of danger in this connection, he argued that "close watch should be made for fatigue signs."[2] It has been shewn that there is a physical poison generated by the muscles in action, re-acting on the brain and causing the sense of fatigue, and the nature of this poison has actually been investigated by Wedensky, a Russian chemist, and by Maggiora and Mosso, Italians. It was said by Krohn that from 8 to 10·15 a.m., of course, is the best period for mental activity, 11 to 12 the worst, 1 to 2·30 is somewhat better, and from 3 to 4 only second to 8 to 10·15, and he urged that the tasks should be correspondingly alloted. Sufficient time has not been available to make anything like adequate inquiry on this point, but enough has been shewn to indicate that the qualifications of anyone, who proposes to direct the programme of instruction of an educational system should be such as to make him alive to the advancing results of psychological and physiological research.

As Krohn has pointed out, both teacher and parent should at least be alive to the abnormal nerve signs consequent upon either fatigue, imperfect methods, or inappropriate and inopportune studies (*e.g.*, disturbance of balance, twitching of hands and face, restless eye movements, peculiar postures of head and hands, excitability, irritability, inattention). It is of course quite beyond the limits of this report to enter into the details of this question at the present time. It is known that there are very curious psychic limitations to fatigue-effects; to take a simple example, it is well known that fatigue supervenes quickly when the emotions are unfavourably affected, slowly when they are pleasurable. And just here lies a difficulty. A definite quantity of work to be mastered by a pupil fatigues him in proportion as his interest in it is low. An hour's teaching by a dull, uninteresting, muddle-headed teacher, is far more exhausting than the same time spent with a vivid, intelligent teacher, and yet in the latter case there is much more actual cerebration. Wherever teaching was bright, the Commissioners noticed that fatigue signs were practically absent; the spirit of the teacher seemed to have infected the children, and one is reminded of the testimony of Professor Munsterberg:—"The individual teacher, for his teaching methods, does not need scientific psychology; and *tact*, and *sympathy*, and *interest* are far more important for him than all the twenty-seven psychological laboratories of this country"; although he admits it *is* necessary for the teacher, as a man of wide interests, *to know something of psychology*, and to bring that knowledge to bear, in dealing with his pupils.

Life cannot be got through without considerable fatigue, neither can the tasks at school. But both can be reduced to a minimum by invoking the favourable reactions of *interest*. Thus the school-boy, awakened by the art of his teacher to interest in his subject, is *largely saved from fatigue*, just as surely as the workman, proud of the excellence of his craftsmanship, is also delivered from its tedium. This points to one great factor in the true remedy.

All this applies to both the mental and physical sides of the subject. All one need say here is that gymnastics, etc., and school games, should not be pushed to the extent of creating fatigue great enough to impair the balance, in the sterner part of the school work. The application will always have to be largely left to the intelligence of the *educated* teacher. Let teachers be properly educated; let them be taught the significance of the marks of fatigue, and of defective hygiene; let them have something like an intelligent appreciation of the scientific investigation of conditions, through the study of the psychology of the question, and they will have far less difficulty in avoiding the misapplication of teaching pressure, individually or collectively, or of injuring the children by unwise pædagogy.

18. *School-hours.*—On the continent, generally, school-hours are longer than with us, 30–32 hours in the upper classes of primary schools. Any proposed increase here should undoubtedly be compensated by creating deeper interest in work and in improving the conditions of school life. Let our schools and play-grounds be constructed and arranged with regard to the conditions demanded by sound hygiene; let their equipments be what are indicated in regard to furniture and pædagogic material; let the teaching be done by teachers with a larger command of human knowledge, and in touch with the progress of modern pædagogy, and much of the difficulty about fatigue will be annihilated. The gymnastics, *if light*, and manual instruction can be considered as practically a recreation and relief from the mental work, and once children have been made to appreciate school work, as indeed they can, and as the Commissioners have seen over and over again, the fatigue question is solved, for by an intelligent arrangement of the curricula, the necessary change of effort will relieve the pressure.

19. *Home-work from the hygienic standpoint.*—Brain-worrying tasks, imposed in the younger years of school life, are undoubtedly an offence against the normal development of the child, and the discretion of the teacher must be carefully exercised in the imposition of all home work. There are widespread complaints

[1] Reports of the Commissioner of Education, U.S.A., 1895–6. pp. 1175–1198.
[2] Report of the Commissioner of Education U.S.A., 1898–9, Vol. 1, p. 475.

complaints as to this matter. *The trouble does not so much inhere in the tasks themselves as in the psychical relation of the child to them.* Create, for example, the same interest in a problem in arithmetic or algebra, as the children spontaneously find in various self-imposed problems, and the tedium of solution, with its adverse physical consequences, will disappear, and there will be some relief. The subject, however, requires more thorough investigation.

Much of the necessity for home-work undoubtedly exists because the schools teach indifferently and are poorly staffed.

20. *Conclusions.*—The following are the conclusions drawn from a wide comparison of the conditions under which the pupil works in the schools of our State and elsewhere :—

1. There should be systematic examination to determine the existence or otherwise of physical defects, especially such as defects of sight and hearing, of every child entering school.
2. The troubles from which any child is suffering should have the attention of a physician, in regard to his fitness to remain at school, whenever the master is in doubt.
3. The general effect of the school-régime on each child should be a subject of observation for the responsible master of each class.
4. General ideas of hygiene should be communicated to the teachers of all schools under the Department of Public Instruction, explaining their importance ; and hygienic instruction should be given in every school. This should include at least the importance of cleanliness, of asepsis, and of general hygiene. In secondary schools the physiological aspect should be also included.
5. The upright-system of writing should be adopted up to the age of twelve at least. Some effort to create a sound public opinion on this matter should be made, so as to win its support, and to correct the prevailing prejudice in favour of sloping writing.[1]
6. The question of fatigue should be systematically considered, so as to regulate the future school-practice of the State.
7. It is desirable that regular school-physicians be appointed, to whom children might be referred in needful cases ; and further that a physician, who has specialised in school-hygiene, should be permanently associated with the Department of Public Instruction, to make all necessary hygienic investigations, and to advise on all matters of school-hygiene.
8. Hygienic statistics should be taken in every school, on a scheme sufficiently extensive to admit of a criticism of our school-methods and conditions.[2]

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[1] See Note at end of Section 16.

[2] The great importance of the subject of anthropometric measurement in connection with school children and its significance for school-hygiene is revealed in the Presidential address by Mr. T. A. Coghlan, F.S.S., Government Statistician of N.S.W., in the Economic and Social Science Section of the Australasian Association for the Advancement of Science, Hobart meeting, 1902, pp. 541–569. The importance of physical culture is revealed in the paper by Mr. C. Bjelke-Petersen, in the same volume, pp. 823–829.

CHAPTER L.

School Equipment.

[J. W. TURNER.]

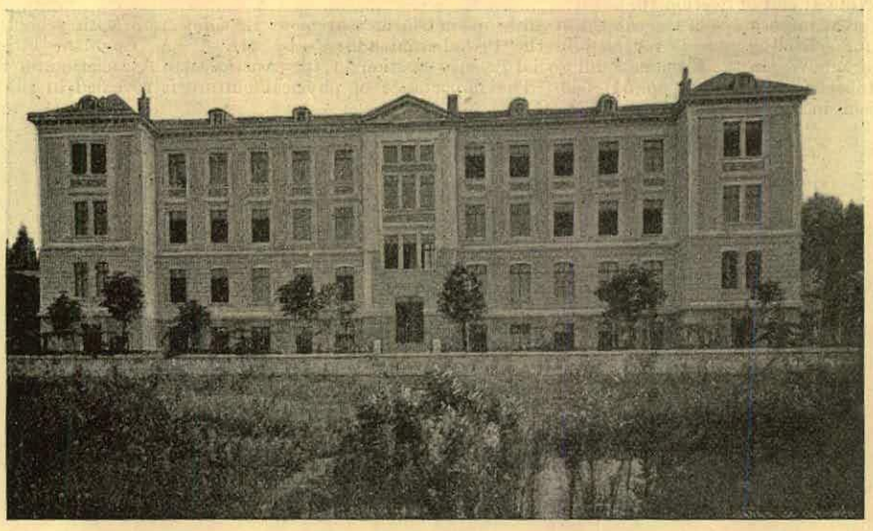
The proper equipment of schools is a matter of the greatest importance in any school system which is progressive in its aims. No country wishing to keep in the van of civilisation can afford to lose sight of the immense value of thoroughly organised schools. Every country to-day which has made its mark among the nations for its educational work can point to splendidly equipped schools for its children. Switzerland, Germany, France, Norway, Sweden, America, possess school buildings which are the pride of the cities in which they are situated. To Switzerland must be awarded the position of honour for excellence of school buildings and character of equipment.

SWITZERLAND.

Buildings.—With so much that is good in the way of school architecture it will suffice here to describe briefly a few of the best types of buildings in the different Swiss towns.

Lausanne.—"Enning" Primary School, endowed by a public man of that name, magnificent stone and cement structure of three stories, situated in commanding position; separate class rooms opening from long and wide corridors; drinking fountains placed in the corridor, drinking cups made of aluminium.

"Vinet" Secondary School. The gift of M. Vinet, a Swiss author, who wrote books for the young—splendid buildings—separate class-rooms—wide, roomy, bright corridors.



ÉCOLE VINET A LAUSANNE.

Neuchatel.—School of Commerce—Beautiful building of four stories, in the new part of the town, near the shores of the Lake—constructed of very hard white stone to about height of 10 feet, then a light brown stone to top of walls—architecture simple and bold—nothing ornate, but beautifully proportioned—floors are laid down in parquetry—corridors are tiled—staircases are of granite from the Alps—railings are of iron—there are no elevators—the electric light is installed throughout the building—the special equipment is described in the Chapter on Commerce—cost of structure 1,000,000 francs (£40,000)—every class-room is connected with the Director's office by telephone.

Bern.—Girls' Secondary School—stone and brick structure—same solid square style of architecture characteristic of Swiss schools—single class-rooms opening out from wide corridors—corridors of double width, divided to admit of usual passages and compartments (wired in) for hats and cloaks—both class-rooms and corridors constructed to get the maximum of light and air—complete cost of building and furniture 864,000 francs (£34,560).

Spitalacker Primary School.—Large buildings in three floors—more ornamentation than usually seen in Swiss school buildings which are noted for their solidity, simplicity of style, and good proportion—single class-rooms and double corridors well arranged with regard to light and air. Cost 700,000 francs (£28,000).

Lucerne.—Primary school in new part of town—stone to first floor, then brick—three stories—single class-rooms—wide corridors. Cost 400,000 francs (£16,000).

Zurich.—Polytechnic—an immense range of buildings with magnificent technical equipment—in commanding position—entire cost of buildings 2,000,000. francs. (£80,000.)

Hirschengraben.

Hirschengraben.—Primary and Secondary under one roof—style departs from the usual solid square stone structure—architect has provided a little ornamentation—the material is of brick—contains fine hall, nicely decorated, for general assemblies—iron stands for hats fixed in a wide recess at each end of corridors—building lit with electricity—cost 1,500,000 francs (£60,000)—the most costly and the finest public school building in Switzerland.

Basle.—Gotthelf School—Primary school work on the ground-floor, Secondary above—new building in a growing suburb—bright large class-rooms, cheerful corridors, both beautifully painted.

Playgrounds and Weathersheds.—Every city school is provided with a playground and weathershed. The playgrounds are spacious, and are covered with small loose gravel. Great attention is paid to planting trees suitable for shade. In the lovely grounds of the Ecole Vinet, Lausanne, a space has been set apart for the cultivation of Alpine plants, which supply specimens for the lessons in Botany.

There is no inconsistency on the part of the architects entrusted with school architecture in Switzerland. The design and finish of the weathersheds are in harmony with the main buildings both externally and internally. The weathershed in the playground of Hirschengraben is beautifully finished. The floor is of wood, and the windows are of pretty design. The upper part of the pillars and some of the windows are adorned with figures illustrating child stories, and the ceiling is nicely painted. No pains have been spared to give the child æsthetic ideas when in the playground.

Teachers' Room.—In planning their large city schools Swiss Architects adopt the series of distinct class-rooms with parallel corridors, giving due care to the proper direction of light in the class-rooms and sufficient ventilation throughout the building. In every school the office of the director or head master is conveniently situated, generally in the middle of the series of class-rooms on the first floor. In the more recently erected schools, rooms are provided for the convenience of the teachers. The room for the teachers in the Primary School, Spitalacker, Bern, is well furnished and is a little palace in the matter of comfort. In the Primary School in Lavater Strasse, Zurich, the teachers have a well appointed room in which to meet after their lessons are over.

Caretaker's Room.—In every city school there is a caretaker or concierge. His quarters are in a part of the school building, on the ground floor generally. He is a most necessary and useful man about the school. His chief duties are the material care of the buildings, and the heating and ventilation of the rooms. He is always to be found on the premises, and if a handy willing man, can render assistance in many ways. The head master in Switzerland has little concern regarding the material condition of his school.

Basement.—The machinery for heating and ventilating the building in the cold months of winter, and the wood and coal required for the boilers, are lodged in the basement. The concierge is in charge of the machinery.

Baths.—Shower-baths are provided in every school in the city, and in some of the country schools. They are situated in the basement and are in charge of the concierge. Attendance is obligatory, unless exemption is claimed on a doctor's certificate, in all classes in the schools. The concierge is responsible for the temperature of the water, for the towels, and for the general cleanliness of the baths. The attendance of the pupils in the bath is considered one of the regular school lessons, and the teachers are responsible for good order. In some schools pupils attend the baths once a week, in others twice a week. A room adjacent to the baths is fitted up in little private compartments which are used as dressing rooms. Parents approve of the douche for their children because few of the houses of the poor are fitted up with baths. (A bath in a hotel on the Continent costs the tourist, who would be clean, two francs.) The douche is also a further aid to cleanliness, inasmuch as mothers, knowing that their children must once a week prepare in the dressing-room to take their place in the baths, look more carefully to the condition of their boys or girls' underclothing. Outdoor bathing among school boys is very general in Switzerland, and the facilities for indulging in the pastime are great. Bathing houses are numerous in the lakes and rivers. The best equipped for teaching school boys is that of Uto-quai, Lake Zurich.

Gymnasium.—The Swiss educationists are earnest advocates for physical culture, and in their most important schools have splendid rooms and the best apparatus for gymnastic training. In the Girls' Secondary School at Bern the gymnasium is 100 feet in length, 54 feet in width, 30 feet in height, and is supplied with lockers for clothes and with bath-rooms. In a primary school in Lucerne attendance in the gymnasium is compulsory for boys and girls, who take their exercises at different hours. This particular gymnasium has a floor of cork. The gymnasium in Lavater Strasse, Zurich, has a splendid equipment in a fine, large, lofty room. Parallel bars and balancing poles are among the apparatus. The floor is of cork. Attendance is obligatory. Hirschengraben has two rooms set apart for gymnastics—one is fitted out with a tennis court of full size and is also used for marching exercises and evolutions. The parallel bars are much used. The equipment is small. Neat dressing compartments are provided. The height and weight of pupils are carefully recorded from time to time by registering machines kept in the gymnasium.

Furniture.—The Swiss Architect of school furniture has laid himself out to design a desk and seat which shall approach the best hygienic conditions. All schools are not yet supplied with the best desks, but all the new buildings have adopted the most modern types of furniture. A very fine type of desk made by Mauchain of Geneva is seen in the school of Commerce, Neuchatel. In Bern, a dual desk on the Signau patent, costing 30 francs (£1 4s.), is used. In Lucerne a dual desk on the Schenk patent, costing 34 francs (£1 7s.), is seen in some class-rooms, while in another school in the same town a dual desk by Hunziker and Zimmerli, costing 45 francs (£1 16s.), is favoured by the school authorities. The Dr. Schenk desk is used in the schools of Zurich. A desk patented as 17263 is used in Basle. The desk is a fixture but the seat is adjustable.

Libraries.—Libraries are general in the schools but are not large. The books are no read on the premises, but lent out under the supervision of the class teacher.

Sanitary Arrangements.—The sanitary arrangements are very good. In the centre of the corridors are the drinking fountains, stands for umbrellas, and receptacles for paper and refuse. At the extreme ends of the corridors the lavatories and necessary conveniences are placed.

Laboratories.—In the secondary schools of Switzerland laboratories with lecture theatres for the teaching of physics and chemistry are general, and on a smaller scale are sometimes seen in the equipment of the primary school for elementary instruction in science.

Museums.—Small museums of natural history are common to all the elementary schools of Switzerland. Animals, birds, plants, are well represented.

Pictures.—In the elementary schools the walls have but few pictures. The portraits of Pestalozzi and William Tell are in every school, and in one Canton the picture of the Crucifixion is added. In the secondary schools excellent photographs and other pictures adorn the walls of class-rooms and corridors. Maps and diagrams are not very common in the Swiss schools, but the very fine map of Switzerland (by Keller) was noticed on the walls of a secondary school in Geneva. This map gave a splendid idea of the surface of the country and the system of drainage.

Permanent Exhibitions of School Equipments.—In addition to the individual equipment in the public schools of Switzerland there are three permanent Public Exhibitions fitted up with all the most modern furniture and teaching apparatus. These are the Exhibition attached to the Training College for Primary Teachers in Lausanne, the Exhibition in Bern, and the Pestalozzianum in Zurich.

The Lausanne Exhibition is a great museum of school material. It is a series of rooms which have been fitted up specially with the view to bringing under the notice of teachers in training all the most suitable appliances, furniture, wall decorations, and apparatus which can be used in a school. The collection is a splendid one, and all the articles are good. Foremost among much that proved interesting are the wall decorations which consist of well executed maps and very fine diagrams. In the collection there are little cabinets showing products and all their derivatives, and a series of botanical charts which give the pupils good ideas of the people and industries of other countries. All the important manufactures are treated in concrete form. The raw product is placed first, and specimens showing the various stages in the manufacture follow in order, and the whole is nicely mounted on a card suitable for use in the class-room. Furniture is well represented. In addition to the desks already mentioned the collection contains one called Kettigs Schulbank. Physiological charts and models, and charts of insects, birds, animals, fishes, are numerous, and all are of the best quality. The display of Kindergarten material is that usually seen in Kindergarten schools. The writing in copy books has considerable slope. The moral code, which is read daily in the schools, hangs on the wall. Everything that the Canton can obtain to make the teaching attractive and entertaining to the pupils is gathered into this Exhibition.

The Bern Exposition is not connected with any particular school, but is a collection of school apparatus and school work intended as an object lesson for teachers. Its best features are:—1. Relief maps and models for teaching geography. These are of excellent construction and great utility. 2. Apparatus for teaching elementary physics, diagrams of various kinds illustrative of local and foreign subjects, etc., well executed photographs of scenery and buildings of different countries. 3. Cards of textile fabrics and alimentary products showing the various stages of manufacture from the raw to the finished article. There is a large display of plain needlework of a useful character.

The Pestalozzianum in Zurich is a teachers' museum on a small scale, in rather poor buildings, but interesting on account of its associations. The exhibits are housed in small rooms which may be briefly described thus :—

(*a*) Museum of Pestalozzi's writings, largely in manuscript, many pictures of Swiss scholars and philosophers, library of school work and publications.

(*b*) Diagrams and models — Physiology (including first aid), ethnology, Scripture, geography, agriculture, botany, physics, manufactures.

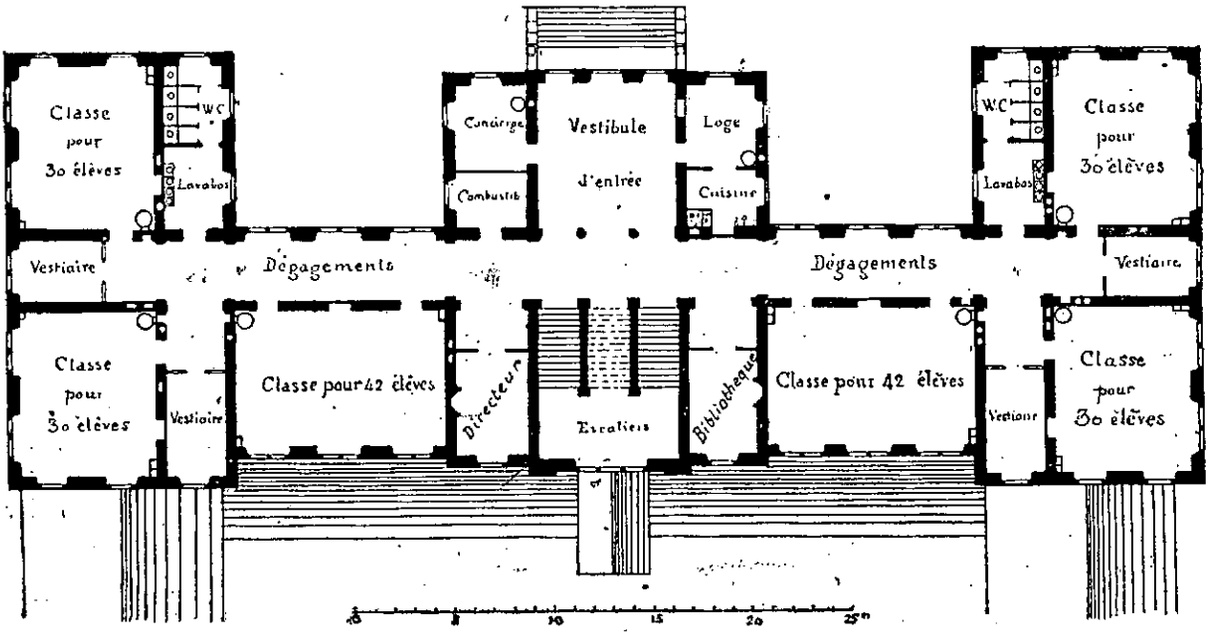
(*c*) Museum of Industry—models in clay, wood, iron, tin.

(*d*) Copy books and the teaching of caligraphy generally.

(*e*) Drawing designs and patterns, flowers, iron railings, and similar ornamental work.

(*f*) Class room apparatus—a very fine map stand on which maps may be folded up after use ; a wire frame with squares on which are placed imitations of all coins in use in the country ; vessels showing the various liquid measures ; charts showing addition tables ; blackboards of style usually seen in schools, viz., a dark slate in a sliding frame, some of wood.

The Commissioners have collected the catalogues of the great school publishing firms of the United Kingdom, Europe, and America, and have personally inspected many establishments noted for school equipment in London, Leeds, Edinburgh, Glasgow, Paris, Berlin, Leipzig, Vienna, New York, Boston, Chicago, Toronto. A description of the materials and apparatus best suited for our schools, the catalogues, pictures and some specimens of work collected, will be handed over to the Minister of Public Instruction with a suggestion that they be placed in the newly formed Departmental Library for the benefit of teachers. An enumeration and description of all that could be suggested for school use would unduly lengthen this report.



PLAN DU REZ-DE-CHAUSSÉE DE L'ECOLE SUPÉRIEURE, LAUSANNE.

CHAPTER LI.

CHAPTER LI.

The Educational Equipment of Schools and Museums of Pædagogy.

[G. H. KNIBBS.]

1. *Introductory.*—During the Commissioners' tour it was impossible to fail to recognise the inferiority of our school-equipments compared with those in the schools of almost every country visited. Whether the lower or higher primary schools, or the secondary schools are considered, the result is the same; and it matters but little to what special material one refers.

Owing to this fact, viz., that in respect of educational material our schools are not well equipped—that even our training colleges are without museums or educational material, and without physical, chemical, or natural-history laboratories; that they possess but a poor general outfit—there are not sufficient sources of good tradition as to what really constitutes a proper equipment for a modern school.

With no example of a well-equipped school, teachers in training or visiting Sydney can hardly be expected to carry away an adequate conception as regards the proper character of either ordinary or model[1] schools.

Proper equipment in a school will certainly greatly help in giving the teaching reality and thoroughness which at present are often, perforce, absent, as elsewhere explained. And the value of a general Pædagogical Museum is that it is an important factor in the *education of the teacher*, revealing to him the possibility of the part that mechanical aids, models, drawings, etc., may play in his work.

In its hygienic relation, school equipment is discussed in Chapters XLVII–XLIX, which sufficiently deal with the matter, though not of course exhaustively.

2. *Pædagogical Equipment of Schools.*—As stated, the proper furniture for schools generally is elsewhere discussed, but it may be remarked that we retain the long unadjustable desks and seats, very often manufactured in cedar, and this in the most recent schools, though the defects of these have long been known, and were pointed out by Dr. Roth in 1885.[2]

The equipment to which reference is hereinafter made is for primary schools designed to carry on the education of children up to the age of 14 years. Such equipment would embrace, for example—

(1) Maps, charts, diagrams, wall-sheets, pictures, etc., necessary for the purpose of illustrating subjects of instruction.
(2) Simple, physical, chemical, and, perhaps, biological apparatus, adequate for the purpose of illustrating scientific teaching, object lessons, nature-study, etc.
(3) Lantern-apparatus for the projection of pictures on a screen.
(4) Phonographic language records for the purpose of securing a proper pronunciation of foreign languages.
(5) Equipment for manual-training exercises.
(6) Equipment for the teaching of domestic economy.
(7) School library.
(8) School museum, cabinets, etc.

All these forms of equipment are to be found in a great many Continental schools and in most of the modern primary schools of Switzerland. Recent tendency in England is much in the same direction. Speaking generally, America also recognises the value, educationally, of such equipments. These will be referred to *seriatim*.

3. *Maps, etc.*—In regard to maps, the importance of *systematic revision* is obvious. With a view to making geographical conceptions realistic, the value of illustrative pictures, such, for example, as "*photochromes*[3]," which shew exactly, with photographic accuracy and in their natural colours, what the various parts of the surface of our earth are like, can hardly be overstated. In a well equipped school the whole panorama of the earth's surface can be thoroughly understood.

Maps

[1] Schools illustrating the constitution of an ideally equipped school.

[2] "Sitting in schools as a cause of deformity."—R. E. Roth, *Australian Medical Gazette*, November, 1885. Dr. Roth says:—"Having unlimited opportunities of observing girls during school-hours, I feel quite convinced that most of the deformities they are liable to, such as curvature of the spine, contracted chests, round shoulders, myopia, etc., are due to the bad positions they assume whilst at their work. In order to appreciate thoroughly these various injurious positions, we must have some idea of the anatomy and physiology of sitting. . . . . This exceedingly unhealthy and injurious position is due to the improper relations of the desk to the seat and to the position of the copy-book, and to the absurd way in which the pupil is taught to hold the pen. A properly constructed desk should be of such a height that the elbows may be advanced forward and rest lightly on the desk. The use of the arms in writing is not to support the weight of the body, but for the left hand to fix the copy-book, and the right to hold the pen. Finally, the desk should be so near the pupil's body, without touching, that there is no necessity to stoop forward. . . . . There is no doubt that these various injurious positions being maintained for many hours daily must give rise to affections of the spine and various important organs. Their injurious effect is much more seen in girls than boys. The latter counteract the evil effects by indulging in various games characteristic of the country; whilst girls are precluded from entering in such pastimes on the false plea of modesty. For this reason it is most urgent that some system of physical training, suitable for girls, be introduced and made compulsory in all girls' schools, and this physical training should be carried out on scientific principles, and not by "professors" and sergeants who are ignorant of anatomy and physiology, and of the laws which govern the healthy development of the body."

[3] A fine illustrative series was obtained from the Photochrome Company, Cheapside, London.

Maps, charts, wall-sheets, diagrams, etc., if made interesting, as for example when they are used to illustrate the progress of war, the acquisition of territory, the journeys of travellers, the significance of strategic movements, or occupations, can become of high educational value in broadening the minds of children and giving them a definite interest through which their attention can be focussed to more methodical matter of instruction.

Consider some of the recent events which demand geographical treatment, and have this general type of interest. One might quote for example:—

(*a*) The acquisition of the Transvaal and Orange Free States.
(*b*) The new treaty between France and Siam and its import on the East.
(*c*) The development of railways in Africa.
(*d*) The volcanic outbreak and earthquakes in Central America.
(*e*) The Canal-schemes of Central America.
(*f*) The blockade of Venezuela.
(*g*) The Acre question (Peru, Bolivia, and Brazil).
(*h*) The Pacific cables.
(*i*) The Arctic expeditions of O. Sverdrup, R. N. Peary, and Baron E. Toll.
(*j*) The Antarctic expeditions.
(*k*) Dr. Sven v. Hedin's journeys in Lob-nor district and in Tibet.
(*l*) Journey of the Drs. Sarasin through the Celebes.
(*m*) Journey of Oberst Pavel and Dr. Hoesemann in the Cameroons.
(*n*) Journey of Baron Erlanger in East Africa.
(*o*) The Russian movement in Manchuria, etc.,

and other matters of the same kind.

Old maps, or any maps that cannot be corrected or altered, are not convenient for geographical teaching; maps that could be readily brought up to date would be preferable.

Relief maps, if accurate, are excellent to give some rough idea of the orography of different countries; but it should be pointed out that the several makers have very different ideas as to what constitutes reasonable accuracy, a fact obvious on comparison of two reliefs of the one country.

In regard to the *hanging of maps*, etc., the best arrangement seen by the Commissioners was a magazine of spring rollers in the form of a bracket, each roller being set a little higher than the one behind it. This has been elsewhere referred to (Chap. VI., sect. 33).

Reference is also elsewhere made (Chap. XLVIII., sect. 2) to the matter of *blackboards*, and to the fact that, from every point of view, *ground-glass tablets* are preferable to blackboards.

4. *Physical, Chemical, and Natural-history Laboratory.*—If object lessons are to be realistic, each school should possess a little simple physical and chemical apparatus, and material for the teaching of natural history. In the French official instructions of 1897, it is said that "It is by simple experiments, costing but little, that the conceptions of physical science for the primary schools are established." And they recommend the selection of those which have direct relation to agriculture. In the "école normale d'Arras," each student-teacher takes away, on leaving, a box, made in the workshop during the exercises in manual work, provided with material for chemical experiments. The box contains the following material:—

(1) A spirit-lamp, tripod, triangle, a holder made of iron wire, one made of wood, a support; all made by the student-teacher. Occasionally a more powerful lamp is added, for operating with glass, etc.
(2) A small collection of glass tubes, corks, india-rubber tubing. In some of the boxes of the normal schools there are about half a dozen stoppers and sizes of rubber tubing.
(3) A small assortment of laboratory glass, four flasks, six test tubes, three beakers, six large-necked flasks, etc.
(4) File, and wires of various sizes.
(5) Various reagents.

The whole is illustrated in the report on the Paris Exhibition of 1900.[1] (Group I.)

The modern Swiss primary schools are better provided than this, and their laboratories are fairly well equipped. In the ordinary primary schools it is perhaps sufficient to have the one laboratory for both physics and chemistry, though in the better class of school it is very desirable to have separate rooms.

To dispense with the science-teaching is not possible, unless our primary education is to remain inferior; and to teach science subjects thoroughly, whether in the form of object lessons or not, suitable apparatus is necessary. It is the experimental teaching that is interesting, realistic, and valuable.

5. *Lantern Apparatus.*—A feature of one of the Museums of Pædagogy in Paris is the despatching room for lantern views. These are sent to all the departments, and in each department a distributing centre has been established, through the initiative of the "Teaching League." These views are very fine, and extend over quite a large range of subjects, viz., agriculture, history, fine arts, and travel, the last being coloured. The lantern is being used more and more for intuitive teaching purposes, and there can be no doubt that the time spent with the lantern can be made not only very interesting, but also very profitable.

6. *Phonographic Records for Languages.*—In the chapter on the teaching of languages (Chap. XXII), the value of the phonograph is referred to as a means of indicating the true sounds of a foreign language. The phonograph is not, of course, comparable to the living teacher; but in this State we are at present at some disadvantage, owing to the absence of a sufficient number of people competent to teach modern languages. The phonograph is a temporary way out of the difficulty.

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[1] *Op. cit.*, pp. 53-54.

7. *Equipment for Manual Training.*—The equipments for manual training are well developed in a great many primary schools of the United Kingdom, Europe and America. The work-benches, though simple, and the accessories for tools, etc., leave little to be desired in the way of convenience or efficiency. In some parts of Switzerland, Germany, Holland, Denmark, Sweden, Finland, Russia, in the United Kingdom, the outfits are excellent, and the work done by the pupils was of high quality.

The excellent manual-training equipments of the primary schools in London and its suburbs are a feature of interest, and these are well distributed also over the United Kingdom. Throughout the world it is being more clearly recognised that education must take a more active and practical and more intuitive form, and the manual-training equipments are the evidence of the serious way in which this opinion is entertained.

8. *Equipment for the Teaching of Domestic Economy.*—Another feature noticed in a very large number of schools, was the equipments for the teaching of cooking (with both gas and ordinary stoves), and for the teaching of washing, ironing, etc. In the former, it may be mentioned that the science of the subject is touched upon, the equipment being designed in such a way that the whole process may be rationally understood. The apparatus was particularly fine in Switzerland and Holland, although it must be admitted that it is also excellent in many other countries.

9. *The Making of Apparatus in School.*—In the chapter on "Manual Training and Sloyd" (Chapter XIX) attention has been drawn to the fact that much of the apparatus required for the teaching of science in Public Schools could easily be made in the school workshop. Apart from all questions of economy, the undertaking of exercises of this kind has a high moral value, perhaps especially so if the master be able to so interest his pupils as to make them identify themselves with the school and with the maintenance of its credit. Then the improvement of the equipment will have some attraction.

The pupil's concern for the reputation of his school, is one of the important elements in its ethical progress, inasmuch as it is the aim of every good school to create *esprit* among the pupils, and a desire to maintain high traditions in regard to its reputation and work.

The fact that all apparatus will have to be made some time in advance of the actual lesson may be used to focus attention, and to beget interest in the subject which the apparatus is to illustrate. Sometimes also it will happen that the devices of pupils for the improvement of the apparatus will shew considerable ingenuity. All such original effort is to be strongly encouraged, not only for the pupil's own sake but also because of its favourable reaction upon other children.

10. *Interest in Science in Schools.*—Reference has elsewhere been made to the utility of scientific observations made in schools. Every Public School in the State could, without any difficulty, be made a *meteorological observing station*, and the keeping of the records assigned as a task of honour to the more deserving pupils. In this way important meteorological information could be obtained at a minimum cost to the State, the pupils deriving real teaching and benefit therefrom. France avails itself of this idea.

So also in places of great geological interest, specimens could be collected for the cabinets and museums of schools in other places where the same opportunity does not exist.

11. *School Libraries and Museums.*—School libraries are a feature in a very large number of European and American schools. They are of two kinds, viz.:—

(*a*) Libraries for the use of teachers, containing dictionaries, encyclopædias, works of references, works on education (theory and history), works on mental science, ethics, philosophy, on sciences connected with education, such as anatomy, physiology, hygiene, gymnastics, physical culture, manual training, Sloyd, text books on various subjects, educational law, etc.

(*b*) Libraries for the use of children, of a somewhat more popular character, but containing also suitable scientific works, text books, the latter generally being somewhat more advanced than those required in following the ordinary work.

In regard to *museums*, it may be said that they are excellent factors in education and they are a common feature in primary schools all over the world. Children readily collect specimens for them, and often shew great interest in the school musuem. The proprietors of local industries very readily and generously add their tribute, often a very valuable one, to the school museum, and in this way both the pupils and the public are induced to take special interest in the school's development.

The concentration of attention, on the part of the pupils, on the material they obtain for the school museum is often a valuable aid in their education, through the arousing of their interest and curiosity.

12. *Pædagogical Museums and Libraries.*—An important institution which has grown up in recent years is the Museum of Pædagogy, represented in many European countries and in America. Its special purpose is to exhibit various educational appliances, and thus to render apparent the progress made in the material organisation of education. Some of the finest of these museums are in Switzerland, one of special interest being the *Pestalozzianum* in Zurich.

This permanent school exhibition was founded in 1875 by a secondary-school teacher and town councillor named Koller, and in 1878 was connected with the Gewerbemuseum (Museum of Industry). According to the statute of 1882, the purpose of the institution is the development of matters pertaining to Swiss school education, and especially to education in the schools of the people, furthering and helping it by enlightening the authorities, teachers, and *the public above all*, as to the present state of the schools,

and

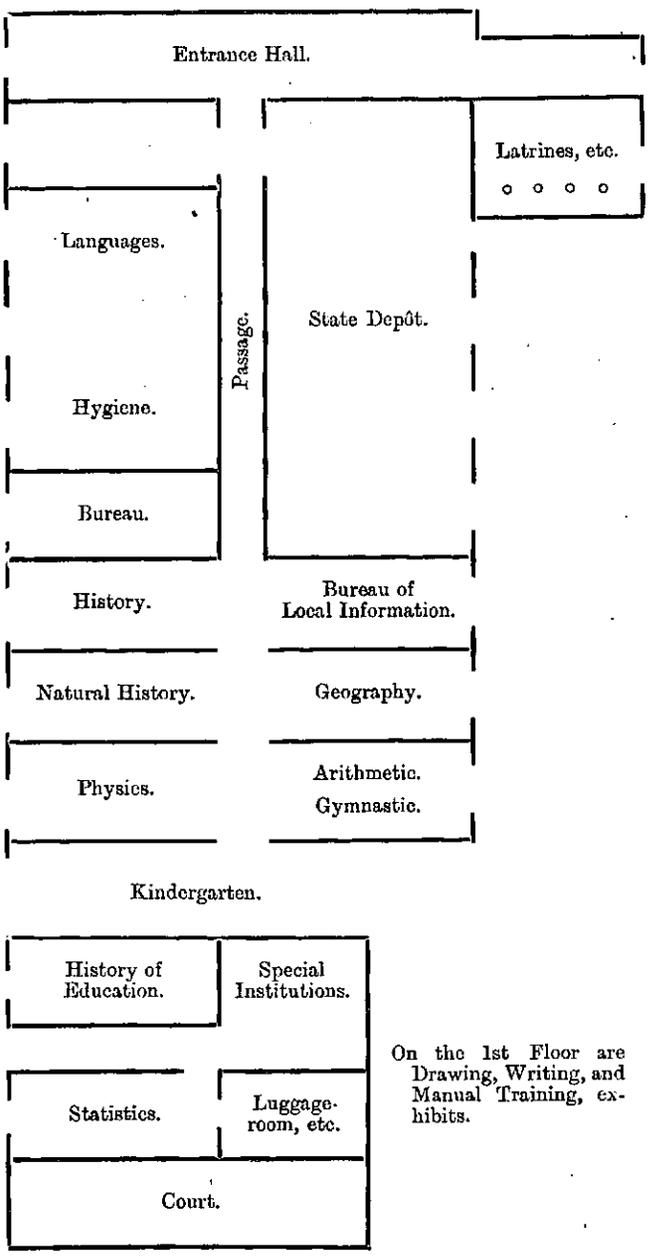
and their history in comparison with those of the different cantons and with those of foreign lands, so that there should be real knowledge as to progress in such matters. In order to attain to this end were established the following :—

(1) Public collections, including :—
  (*a*) The present equipment of Swiss schools in general, and individual teaching material, school apparatus, and furniture.
  (*b*) A permanent exhibition of any new teaching material, and anything that might assist in regard thereto, introduced into Swiss schools and adapted to the improvement of the instruction, without regard as to whether it is of Swiss or foreign origin.
  (*c*) Pestalozzi room.
  (*d*) Archives for statistical and historical material relating to schools.
  (*e*) A library for pædagogical literature, with a reading room.
(2) A bureau for the purpose of supplying information to authorities and private people regarding questions concerning the institution.
(3) The arrangement of public discourses and special travelling exhibitions.
(4) Literary publications.

The archives possess about 10,000 numbers concerning school-law and administration. There are about 2,400 volumes in the general section of the library; about 4,200 in its pædagogic section; it has about 5,900 text-books; about 1,200 children's manuscripts; about 1,000 manuscripts and 1,350 brochures in the "Pestalozzi room."

There is also a very fine permanent school exhibition in Berne. This has a model school-room with various types of furniture, the sections for teaching-material being arranged according to the different subjects; and it has a library, a reading room, and a room for general administration.

The following sections are represented, the arrangement being as in the plan hereunder :—



At the time of the Commissioners' visit a large model of part of the Alps was being finished, it having taken several years to complete. There

There is also a school-museum at Fribourg founded, through the activity of M. Léon Genoud, in 1884. This has a collection of samples, a library, the works of Père Girard, and school-history, school-law, and school-statistic sections.

There is also a permanent school-exhibition at Neuchâtel opened on June, 1887, each of the departments being arranged in its special sectional room as follows :—

Geography.	Natural History.	Girls' handwork.	School law.
History.	Mathematics.	School of industrial work.	School statistics.
Drawing.	Language.	Singing.	Pædagogy.
Writing.	Kindergarten.	Gymnastics.	School furniture.

The pædagogical library of Paris is a very large one, containing something like 50,000 volumes. Besides this there are in Paris two large pædagogical museums, in which are exhibited a variety of school material, the one being in the Rue Gay Lussac, and the other—the Municipal Pædagogical Museum—being in the Rue Montmartre, No. 47.

Reference was made in section 5 to the Despatch Room in the Pædagogical Museum of Paris, for the issue of lantern views. This is shewn in Fig. 85 of the Report on Group I, (Education et enseignement), Exposition universelle Internationale, 1900, Paris, p. 239. There were, in 1898–9, about 3,450 collections of about twenty views each. The collection is at present considerably larger.

At the Pædagogical Museum of the municipality of Paris, specimens of every type of furniture, and of all teaching matêrial in use in the public schools, may be found. This is illustrated in Fig. 92, p. 257, of the Report above referred to. Examples of the work of pupils, and of the class of exercises, are given on pp. 274–5 and 280–1.

It may be mentioned that the pædagogical equipment (museum) of many of the normal schools of America is also excellent. That seen in connection with the training college of the Columbia University, New York, is worthy of mention. According to the catalogue of the Columbia University (year 1902–3), the Bryson Library, in the main building of the College, contains 20,000 volumes. This building also contains a fine educational museum.

The best series of models for the Sloyd form of manual training was that seen at the museum of the Naäs Seminarium. Besides the educational museums distributed throughout Europe, the United Kingdom, and America, many of the warehouses, where educational materials are sold, are practically extensive exhibitions of the variety and character of the apparatus provided to assist teaching.

13. *Conclusion.*—A Pædagogical Museum is an important factor, not only in the education of teachers, but also in the education of the public as to the needs of the popular school, for, as yet, we have no adequate conception in this State of a modern, well-equipped primary school.

In a centre like Sydney such an institution, properly fitted out, would reveal the state of progress in the material organisation of education in various parts of the world. A teacher's seminary, associated with the University, possessed of a good adjunct-school, and a *well-equipped library and museum*, could be made a focus of interest for members of the teaching profession. It would also give the public an opportunity of learning something definite in regard to the material organisation of modern education.

The following recommendations sum up what has been previously indicated :—

(1) The present educational equipment of the primary schools of the State needs to be greatly improved.
(2) There should be some simple apparatus for the teaching of the natural sciences.
(3) All primary schools should be equipped for manual training; and the teaching of domestic economy should be better provided for.
(4) The manual training classes should be encouraged to make such simple apparatus as is serviceable in the teaching of natural science.
(5) A fully-equipped educational museum should be established, preferably adjoining the teaching seminary and its practising school. This museum should contain examples of all new teaching material of value from all parts of the world.

CHAPTER LII.

Inspection *v.* Examination.

[J. W. TURNER.]

Practically outside our own State, certainly outside our Commonwealth, the question of Inspection *v.* Examination at the time of the Commissioner's visit was receiving little attention. One of the States was making an experiment in favour of inspection in place of examination, but the test was confined to a few of what were considered the best schools in the city.

In the schools of the United Kingdom the question had been settled for some years in favour of inspection, and inquiry among His Majesty's Inspectors, head teachers, and assistants, revealed the fact, that, although a small minority did not approve of the step, a very decided majority agreed that the change was a wise one to make.

Several of the most prominent head teachers under the London School Board and under the Provincial School Boards, whose schools were specially recommended as being worthy of a visit by the Commissioner, were good enough to speak out very plainly on this question.

In one large suburban school in the West End of London, there appeared to be little inspection and no examination. No Inspector had visited the school for a year. When the head teacher was asked for his "Observation Book"[1] he did not understand what was meant by the term, but on the Commissioner explaining that it was a record of the work done by pupils and teachers during examination, he produced a very small exercise book, which he called his Log Book. In the book were a few sentences telling of the material condition of the school, but specifying nothing about the work of the classes, teaching methods, or the values of subjects taught. Judging from this simple record His Majesty's Inspectors gave little time to examination in that school. Yet one is satisfied that the moral tone of the school was good, and that the teaching carried on there was intelligent. Looking about for the cause of such results under these circumstances, the conclusion was forced upon one that the head teacher was the power at work. The absence of lengthy reports and subject valuations in the Log Book was due to the fact that the Inspector had confidence in the head teacher. His visits to that school, as in many others, were merely formal and always encouraging. The confidence of the Inspector was shown in the infrequency of his visits, and the stimulus to the head teacher lay in the fact that he was thoroughly trusted by his superior officer. In this particular school the syllabus of work, which managers and head teachers draw up to suit the requirements of their district, was formulated on the Higher Grade Standard, and prominence was given to ordinary commercial work and drawing. The head teacher taught classes occasionally (in the Higher Grade Board Schools heads are not responsible for a class), directed his pupils' education generally, and held examinations frequently. He maintained a good standard of work, and was successful, as indicated by honour boards in the school central hall, in passing many of his pupils for the Oxford and Cambridge Junior Local Examinations, the lower certificate of the Chamber of Commerce, and for the London County Council and private Scholarships, admitting to secondary schools. His lower grade work was always directed towards a preparation for the vacancies in the higher grade, and in this way he kept up a healthy tone throughout his school without the aid of examinations by Inspectors.

The Commissioner cannot help pointing out very forcibly that the main value of the system of inspection lies in the possession of thoroughly efficient, earnest teachers, men and women, who can be implicitly trusted by the State to do their work. The Inspector then has a simple duty to perform—to advise, where necessary, to suggest improvements in method where desirable, to encourage everywhere.

That the Inspector has risen to a proper sense of his duty under the system is true. In a letter from one of the officers of the National Union of Teachers, England, to the Secretary of the Public School Teachers' Association of New South Wales, it is stated, corroborative of the above, that "the relations between teachers and Inspectors have undergone a complete revolution." Under the examination system, public school teachers in England were often the victims of Inspectors' caprice, and a bad report on the day of examination meant something serious for the unfortunate teacher. "Now," says the same writer, "if an assistant is not working properly it becomes the duty of the head teacher to report to the teacher's employers, whose duty it is to remove that teacher if he cannot be brought up to the mark. We find that if a teacher is so reported upon and so removed, it occurs only after careful investigation and observation and every opportunity is given to the teacher to improve. Under the old system teachers not infrequently were adversely reported upon, sometimes dismissed, not because their work was unsatisfactory during the year, but because the children were nervous on the examination day, or the Inspector was out of touch with his work on that particular occasion."

The head teacher of the suburban school already referred to, since gone to his long rest, would have in his day seriously resented any attempt to return to examination as indicating an imputation on his honour or a belief that he was incompetent to manage his school. The mistress of the Infants in the same school stated that the Government Inspectors listened to the teaching, and observed the methods of instruction in carrying on the ordinary work according to time-table, but conducted no systematic examination, and that the Board Inspectors neither inspected nor examined, but were chiefly employed in making inquiry into matters of organisation noted by the Government Inspectors.

Another

[1] This book in the State Schools of New South Wales is a record of examination by an Inspector, and contains a printed list of school subjects, opposite which he places, either in words having a numerical value or the numbers themselves, his valuations obtained as a result of his tests. The Inspector's instructions are to fill up the "Observation Book" immediately at the close of his examination. The New South Wales teacher knows the "Observation Book." This explanation is not intended for him.

Another head teacher gave his experience of inspection. In his school, he said, the practice is for the Inspector to listen to the regular work of each teacher for a short time. On no occasion is the work as laid down by time-table interfered with. Exercise-books, which show class work from the previous examination, are presented for inspection, and a few only, as a rule, glanced at. This is the only test applied in the school under notice to ascertain the value of the teaching methods practised, the efficiency of the staff employed, and to what extent the intelligence of the pupils has been developed. Again the great amount of reliance placed upon the head teacher can be seen. The Inspector leaves no written report of his observations. This comes later on from the Head Office and is entered in the Log Book. If the Inspector during his visit finds anything wrong in the method, organisation, or discipline, he brings it under the notice of the head teacher whose duty it is to convey the verdict to the teacher immediately concerned. It would appear that, except perhaps in very glaring cases of inefficiency, these remarks are never embodied in a written report, but made in a friendly way to the head teacher, by whom they are communicated to the proper person. This head master, speaking for himself and the teachers of his acquaintance, prefers the system of inspection because it makes for more freedom in the curriculum, whereas examination cramps the work and conduces to mechanical results.

A paragraph from the letter already quoted confirms this view :—"We find that children are not able to work four sums in twenty minutes certain that they will be accurate to the third decimal place. But they can now explain the rules upon which they are working, why they have done it, and under what conditions a different method would be required. They may not spell with accuracy a list of catch words, but they can write a letter with some intelligence." In the same letter the writer points out further advantages gained from inspection, and states "that managers and teachers are compelled to take greater care in the choice of a curriculum which must be suitable to the district. The capitation grant (an amount paid by Government for each child efficiently taught) instead of being dependent upon results secured at the Inspector's examination now depends upon the suitability of the instruction, the thoroughness and intelligence with which the instruction is given, the sufficiency and suitability of the staff, discipline, and organisation."

The feeling regarding the question was freely tested among the assistant teachers as well as head teachers in England, Scotland, and Ireland, and the views elicited generally favoured inspection. Many who had had experience of the examination days, now rejoicing in what they termed natural freedom in the school, hoped that there would never be a return to examination with its system of espionage, results, and cram, and predicted that any tendency that way would be met by a spirit of hostility on the part of British teachers. These all agreed that the general intelligence of the pupils was quickened under the system of inspection, and that the change from examination had proved of enormous advantage to popular education.

Some Board teachers, certainly a small minority, are still in doubt as to whether inspection is better than examination. They admit that examination was carried too far, that it aimed at a rigid maximum, and further, produced too great uniformity in class attainments. Inspection, they say does not go far enough, and is satisfied with too little in the way of results, or an easily obtained minimum, although at the same time giving scope for broad intelligent work. The pendulum has swung from one extreme to the other. These teachers contend that a modified form of the old examination system would be in the best interests of teachers and their pupils. In their opinion much of the abuse heaped upon the system of examination is due to Inspectors who have not the requisite qualifications for the office. Men of culture, men of kindly feeling and encouraging manner, men of broad views, men of healthy constitution, are wanted in school inspectorial ranks. There is no place for the one who requires results just on his special methods, who sets out to find faults before he is on the school premises, who tires teachers and pupils by his prolixity or discursiveness, or irritates by his imperiousness, or who takes a special delight in bewildering the little ones.

The Commissioner took every opportunity that presented for coming into contact with Inspectors and finding out their methods of testing, and their views on inspection and examination, and he was fortunate to meet, sometimes engaged in schools, several of His Majesty's Inspectors in England, Scotland, and Ireland, and some of the Chief Inspectors of secondary and primary schools in the large cities of the Continent and America.

Through the kindness of the Board of Education, England, the Commissioner was present at the inspection of a Board School situated in one of the poorest divisons of East London.

The Senior Inspector was good enough to give his views on inspection and examination. He himself favours inspection, but considers that the real issues of the two sides are not yet fully determined. The old Inspectors, perhaps with a disinclination to break away from long-established practices, and still bound by their conservatism, favour examination, but these the Inspector thinks are in a considerable minority.

It appeared to the Commissioner, when seeing the school inspected, that if the system of testing school work erred too much on the side of mechanical results with a rigid standard, the system in the Board Schools of London did not show very satisfactory results with a free standard. The actual standard sufficient to satisfy the Inspector was of course known only to that official, but the conclusion formed from observation was that it was low. The condition of the school, to all appearances, was not satisfactory. Making all allowances for environment, the teaching, from the Commissioner's standpoint, did not seem efficient. The head teacher was earnest, energetic, anxious, and strove well against the influence of his surroundings, but there was little real life in the school. His staff, with few exceptions, was not strong or helpful. Here was an opportunity for condemning the school if ever one existed (so it appeared to the Commissioner, who did not know all the circumstances), but the Inspector seemed to be in full sympathy with the head teacher in his peculiar position, and judged the school on the basis of its possibilities.

Taking an opinion from the excessive anxiety of the head teacher of this school during the time of the Inspector's visit, it is proper to remind advocates for inspection that the system as seen in England exacts a very trying ordeal from the head masters, and really increases their responsibilities by placing the charge of the entire school on their shoulders. The weight of these responsibilities, even under the most favourable circumstances,

circumstances, is sufficient in itself to create considerable anxiety at so trying a time to most as a regular visit from an Inspector, and fortunate are the teachers who feel that their Inspector is a friend, ready to give credit for what is good, and quick to point out what is defective.

This Inspector's kindness in dealing with the boys, and his fairness in dealing with the teachers, impressed the Commissioner very favourably. In watching his work on the morning of the visit one could not help noticing that, as the consequence of his manner and methods, he was respected by the staff and pupils.

There is no quarter of Sydney comparable to the locality in which this school is situated, and this was made clear to the Commissioner, who gained some idea of an East London community, in company with the Chairman of the Divisional Committee, when making a visit to the schools in his section. Wherever the Commissioner met with His Majesty's Inspectors throughout the United Kingdom, he could not help but admire their splendid conceptions of duty, their trust in their teachers, and their cheerful happy way with children.

The school which the Commissioner saw inspected through the courtesy of the Board of Education and the Senior Inspector of the Division is one in a district which has enrolled in its schools 76,000 pupils —a number about equal to that which our metropolitan area contains. This district is worked by two Inspectors—senior and junior—with a lady assistant.

The Boys' Department, containing seven classes with about 300 boys, was inspected by both gentlemen together, and the work was finished in a little over two hours. The Senior Inspector took Standards II., V., VI., VII. The following was the procedure:—

Standard II.—Age 8¼ years.

Arithmetic.—Teacher gave usual subject on time-table, mental arithmetic, concrete examples in multiplication and division, *e.g.*, 6 x 4. Inspector followed on similar lines, but used addition too. Then worked by pupils on board concrete example 17 x 5, first by addition, and then by multiplication. Teacher set written work on board, *e.g.*, 24 sacks of potatoes, 352 in a sack: how many in all? A few questions only, reasonable time allowed, but no time limit specified. While written work was proceeding the Inspector was working in another room. Teacher left in charge. On his return Inspector looked through about one-third of the books. Teacher and boys trusted.

Reading.—Conducted by teacher, Inspector listening; no comment at this juncture, but in the final summing-up verdict given. This completed the examination of Standard II.

Standard V.—Age 11½ years.

Arithmetic.—Inspector examined arithmetic in a few cases only, of work done on paper in school. He took a proportion sum from the examples and asked the teacher to explain ratio to the pupils. Inspector asked occasional pertinent questions during the teacher's explanation. Teacher was then instructed to set four sums to be worked by the pupils, including bills of parcels properly made out, and to superintend the work. Time allowed 45 minutes. Inspector took up another class, again in a different room. He returned at the expiration of the time, and examined a few of the books in arithmetic, but made no valuations or comment.

Dictation.—Exercise-books showing work done in school inspected.

Composition.—Exercise-books containing essays set by teacher looked through rapidly.

Geography.—Teacher questioned boys on physical features of countries round Baltic Sea. The Inspector listened, but asked no questions. Later on, he had something to say to the head teacher. (*See* summary, page 14.) This concluded the examination of Standard V.

Standards VI and VII.—These were combined, but with the Inspector's customary fairness the work was more on the lower standard.

Arithmetic.—Book-work, simple interest examined. Inspector gave a few mental operations in interest.

Mensuration.—Carpeting a room—simplest process.

Reading.—Macmillan's Historical Reader 7. Taught and questioned by teacher. Once only did the Inspector put a question.

Geography.—East Indies and their natural products. Teacher did nearly all the questioning. Inspector put a few general questions. When he asked a question his manner was courteous in every case, especially towards the youngest teachers.

This concluded the actual examination.

There was no examination in grammar, object-lessons, drawing, or singing, in any of the above classes.

The Commissioner was privileged to listen to the summing-up of the Inspector's opinions, which were verbally communicated to the head teacher, who is the medium for their transmission to the rest of the staff. The Log Book was produced, and matters concerning a previous examination referred to. The head teacher then received the verdict on his work. In a very friendly way, as man to man, it was pointed out by the Senior Inspector, in the presence of the Assistant Inspector, that reading in Standard II. was unsatisfactory. The head teacher was advised to give the class, a large one of 70 boys, more of his own time, and to place some of the very backward boys in a small section for special attention by the pupil-teacher. The head teacher contended strongly that he should have a better staff in such a district. He argued his point, quietly, respectfully, and ably, and all his remarks were carefully listened to. He spoke under the strain and pressure of great responsibility, but with a feeling that he had the sympathy of his Inspector. The work of the teacher of Standard V. was adversely criticised in

in a fair and kindly manner. His general work was first referred to. The head teacher, while not seeking to excuse his assistant, whose results he considered ought to have been better, pointed out that he was ill, and that only for the inspection he would have returned to his home immediately after reporting himself for the morning work. The Senior Inspector's sympathetic remarks are quoted: "Do not be too hard on him; I have had worse cases and certainly better." A few words of commendation to those who merited it, and a warm expression of sympathy and encouragement to the head teacher, were given, and sharp at noon, after a visit of little more than two hours, the Inspectors left the school to fill up the afternoon with similar work in another part of their large district.

On the Continent inspection is almost if not entirely universal, and the same implicit trust in the teacher, and the same sympathy with the teachers' work and efforts, are noticeable.

K. Ten Bruggencate, Esq., Chief Inspector of secondary schools in Holland, and formerly over the primary schools, a gentleman with a thorough command of the English language, and an intimate acquaintance, from residence in England, with English people, pronounced entirely in favour of inspection. Mr. Bruggencate showed the Commissioner the greatest kindness while they were in Holland, personally accompanied them to many schools, and enabled them to see many features of the country's very fine system of primary, secondary, and industrial education. Throughout the country the system of inspection prevails, and, in so far as could be judged, with satisfactory results. The intercourse between teachers and Inspectors was of a very friendly nature.

The Chief Inspector of Schools, St. Petersburg, and Dr. Erödi Béla, of Buda-Pest, may be cited, among many thoughtful educationists whom the Commissioner met, as men strongly in sympathy with the teachers' work, while in the person of J. L. Hughes, Esq., Inspector of Schools, Toronto, Canada has not only an advocate for inspection as against examination, but a forceful, able writer on educational questions, and a hearty supporter of the earnest, painstaking teacher.

The Commissioner found that the system of inspection is in general use throughout the United Kingdom, Europe, United States, and Canada, and is advocated by a large majority in every country. He considers that, if the success of inspection has been so marked wherever it has been introduced, it might very safely be at least tried in New South Wales, for the trained teachers of the State are equally as intelligent, trustworthy, and loyal as those of other countries. Even in the case of teachers not fully trained, who are equally as trustworthy and loyal as their more fortunate brethren, the best results should accrue from inspection, as under the system Inspectors would be able to spend more time in explaining good teaching methods. Many of these teachers in New South Wales have not had the best opportunities for learning the art of teaching, and if the Inspectors in their yearly rounds could be relieved from the humdrum of individual examination, they would be able to give their teachers, far removed in many instances from the means of self-improvement, practical suggestions and useful advice in the management of schools. These are the men and women who would materially benefit by the system of inspection. The Inspectors' visits should be the teachers' opportunity for gaining a knowledge of the most approved modern methods in teaching, and of the most serviceable text-books in use, and the same visits should be the Inspectors' opportunity for extending a friendly hand to the teachers in their efforts to improve their own status and raise the standard of their work.

It is within the knowledge of the Commissioner that as far as possible this course is adopted by some Inspectors in New South Wales, but detailed examination work hampers so much that little time remains for suggestions and advice. If an Inspector has to make an exhaustive valuation of all the subjects taught in a school, and subsequently to prepare a mass of statistics for the Head Office and enter his verdict in the "Observation Book," he has no time, and perhaps little inclination, to confer with his teachers on matters of vital interest to him and them professionally.

In the very large schools of the State, a positive waste of time takes place during examination, for while the Inspectors are on the premises the regular course of instruction is disarranged in all classes, time-tables are cancelled, and the even tenor of the work gives way to an unhealthy excitement.

There is a feature in the examination work, called exemption-certificate work, which is open to objection, and which has caused much heart-burning, humiliation, and degradation to teachers, and as it only gives mechanical results it might well be dispensed with.

Other opinions from various sources, and from different standpoints, the Commissioner thinks it right to add:—

(A) Extracts from general report by the Board Inspectors for London, 1901:—

THE SUPERVISION OF SCHOOLS BY THE HEAD TEACHERS.

WHEN the Education Department changed their method of testing the efficiency of the schools receiving Government Grants, and determined to give up the rigid system of individual examination previously in force, and to depend exclusively upon inspection, we viewed the change with mixed feelings. We rejoiced that the rigid individual tests, with their tendency to produce overstrain of teachers and scholars, were to be modified, and we were especially glad that the old tendency to produce classification by age, which brought undue pressure on the dull, and cramped the progress of the brighter children, was gone; but we viewed with some apprehension the loss of those influences which an intelligent system of examination would secure.

It is absolutely necessary that some means should exist for testing the results of the efforts and methods of the teachers. Inspection, properly understood, should secure this, for it implies not only looking at the surface appearance of things, but the thorough probing of them; and with regard to the work of our schools, this absolutely necessitates some examination of an earnest character.

With some exception we feel sure that Inspection as now understood and administered does not do this, and does not penetrate far below the surface. On several occasions we have drawn attention to this danger, and to indications we had seen that some evils were arising from it.

This change has made the supervision of the Head Teachers more important, as upon them falls the duty of testing the work by examination, which had previously been done by Inspectors from outside the schools.

In the absence of examinations the New Code wisely requires detailed schemes of work to be prepared by each class teacher, and records should be kept of work actually done. These schemes and records need also careful supervision on the part of the Head Teachers.

Feeling the importance of ascertaining how thoroughly these duties were carried out by Head Teachers, we have tested as many cases as possible, and for this purpose have used the subjoined form :—
(Copy of Form)

School Board for London.

Report of School.

1. Are periodical Examinations held by the Head Teachers?	
2. How often are these Examinations held, and do they cover the whole field of work of the various classes?	
3. Are there any other occasional tests of progress imposed by the Head Teacher?	
4. Is a record kept of these Examinations? (a) Detailed results reduced to figures in case of the three R's. (b) General estimate of the work. (c) Schedule of individual progress—in the three R's especially. (d) Criticisms.	
5. Are these criticisms sufficiently exhaustive and helpful to the Class Teacher?	
6. Is there a record of the questions, etc., given at these Examinations?	
7. Are these questions suitable, having regard to the District and the period of the Educational year?	
8. Does the Head Teacher's estimate of the work fairly correspond with the actual condition of the school as revealed by recent or present work?	
9. What steps are taken by the Head Teacher for the guidance of weak or young teachers?	
10. (a) Do the Class Teachers keep a detailed account of their work, or (b) Does the Head Teacher prescribe the course for each subject which is to be examined by him periodically?	
11. Are the lessons, as a rule, carefully prepared by the Class Teachers?	
12. Are the methods generally adopted by the Head Teacher calculated to cover the ground prescribed by the Code, and to promote the thorough efficiency of the school?	

In this work we have been ably assisted by the Assistant Inspectors. The result of our inquiries shows that the Head Teachers generally appreciate the importance of their new duties, though we have in some cases had to draw attention to some points of neglect.

The important question remains as to the efficiency of examinations by Head Teachers only to secure the required results. There is the undoubted weakness arising from the fact that they are partly testing their own work, which is always best tested by an outsider. How far their conclusions can be made to influence their Assistants who may have been found to fall short of a satisfactory standard of work must largely depend upon the force of character of the Head Teacher.

Individual Examination.

Some forty years ago it was laid down as a principle or rule that, in the annual inspection of a school, the examination of the children individually should form the essential feature. The backward state of education in many schools was thought to justify and call for such a rule. The general impression formed of a school, valuable though it was when coming from a sagacious and experienced observer, and the performances of a few bright scholars, valuable as they also were, did not furnish a sufficient guarantee of the steady, continuous growth of the bulk of the scholars, especially of those who were naturally more backward.

It cannot be denied that the new system produced a certain degree of levelling up and an increase of thoroughness, but it brought with it certain very serious evils, which were indeed foreseen from the first by thoughtful persons. It was found that testing results without reference to methods of teaching tended to discourage the preparation and careful working out of schemes of instruction, and offered an incentive to continual drilling in tests which were likely to be offered. And as the instruction became unsystematic the memory was unduly trusted to, and too little appeal was made to the intelligence. Further, there was a tendency to reduce the whole body of instruction to a minimum in which the weakest scholars might acquit themselves without failure instead of producing a more generous scheme in which the brightest children might have scope for their abilities. These evil results led to the system being modified from time to time, till at length it was swept away, and once more school reports seem to be little else than records of general impressions, while through the multiplication of scholarships, attention is being concentrated more than ever upon the work of the brighter scholars.

There is therefore reason to fear there may be in the instruction of the general mass of the scholars a falling off in thoroughness, and we believe there is evidence that such is the case. A detailed examination of certain schools, as we shall have occasion to show, has yielded very poor results, especially in arithmetic, and a falling off has been noticed in this subject even with those children selected for competition for scholarships. It would appear, too, that children are not advanced from standard to standard so quickly as formerly, and this is a subject to which we are now giving attention. In recent examination for admission to Higher Grade Schools a considerable proportion of the candidates were considered to be unfit to profit by the advanced course of instruction, and at the last examination in Scripture knowledge a very large number of children wrote down verses of Psalm xxxiii. in such a way that it was evident that they had no thought of the meaning.

These things point to a certain degree of slackness on the part of some teachers, who appear to have lost the stimulus of the old individual examination and not to have found another of a higher and better kind. We believe that much would be remedied by the faithful carrying out by Head Teachers of the regulations of the Code as to term examinations and the keeping of progress books. We find that while in some schools these books are admirably kept, in many others they are far from being satisfactory. In the best schools the tests applied at the term examinations are based upon the completed portion of a carefully prepared syllabus, the recorded comments upon the results are helpful to the teacher in the praise awarded, and in the indication of faults to be avoided and of further excellence to be aimed at, while the preserved papers show care in the marking, and by their correspondence with the every day work of the school give evidence of their genuineness. We trust that keeping of records in such a manner, which is at present not universal, may become the absolute rule.

Much depends upon the Head Teachers, and much may justly be expected from them. They have been released in nearly all cases from the duty of teaching particular classes—not that they may take their case as idle onlookers, but that they should become a stimulus and example in every class. They should frame suitable schemes of teaching, and carefully watch the working out of the same; and without changing for the sake of change, be ever ready to modify in order to obtain some higher good. They should avail themselves of any special powers of their Assistants, so that they also may labour not only strenuously but as far as may be with delight. They should carefully guide and help their younger teachers, especially in the art of oral teaching—so different from mere lecturing, and so hard to attain that very many never reach excellence in it.

Inspection or Examination.

Since the substitution of Inspection for Examination our Annual Reports show that we have watched with keen interest, and no less anxiety, to see the effect of the change on the efficiency of the Board's schools.

In 1896 we set forth the possible and desirable benefits likely to accrue therefrom. In 1897 we said that the effects of concentrating the attention on method had produced, as far as we could judge, good results. In 1899 we gave the first note of warning that all was not well in the schools. Last year we went a step further, and gave a stronger warning. We said in effect, that in some schools not only was the old standard not maintained, but that a palpable decrease in efficiency was apparent.

We do not withdraw from the position we have taken up. There are some schools made brighter and more efficient by freer conditions, but the majority suffer. The occasional and partial individual examinations we have been able to conduct during the year just ended confirm us in this view; but we thought it well to select some few typical schools, and submit some portion of the work of each to a more complete and exhaustive test towards the end of the educational year.

Thirteen departments were selected—8 boys' and 5 girls'. Three of the departments are in poor localities, but we counterbalanced—as we thought—the effect of their selection by including three Higher Grade Schools, each with the very highest reputation for efficiency. The part of the work chosen was the arithmetic of the Upper Standards, viz., Standards, IV, V, VI, and VII. Five exercises were give to each scholar, printed on cards. In awarding marks, four to each exercise, we were very careful to assign full value to intelligence as shown in the methods employed. Thus, if the exercise was not worked accurately, we yet awarded a considerable number of marks provided the child had shown that he or she *knew how to solve* the problem. We further alloted 2 marks for neatness and order. Thus it was possible for each scholar to earn 22 marks. We examined 1,611 papers in all, with results as follow :—

224, about 14 per cent. won from 18 to 22 marks. Call these excellent.
618, about 38 per cent. won from 10 to 17 marks. Very fair to very good.
769, about 48 per cent. failed to reach 10 marks.

The latter statement means that 48 per cent. of the children failed to secure the value of 2 exercises out of 5, and 2 marks for neatness ; and, under the old system, would have "failed."

Analysing a little further, we find that 525, or about 33 per cent., of the children failed to win more than 5 marks out of the allotted 22 ; and, lastly, 211, or about 13 per cent., failed to show any results whatever.

The average percentage of marks made per school is :—

A. 63	E. 51½	H. 44	M. 36½
B. 58	F. 46	K. 44	N. 36
C. 55½	G. 45	L. 39½	O. 25
D. 53½			

C. G. and K. are Higher Grade Schools ; H. N. and O. are schools in poor neighbourhoods. Standard VII, in D, and Standard IV, in E, have been splendidly taught.

Another fact brought out pretty clearly from this examination is that, whereas under the old system the dull children received more than their fair share of attention, under the new system they receive less. There must be something amiss when, in all the departments examined, the number of children who fail to do anything almost balances the excellent passes—211 to 224.

We feel that a grievous mistake has been made, and that, while striving to escape from the evils of one system, we have rushed into the evils of another. Under the old system the educational pendulum was swung much too far in the direction of slavery ; under the new it is swung too far in the direction of license. We want so much of the former as will make for educational efficiency, and so much of the latter as will secure that efficiency is achieved in the best possible way. Until some substitute is found we must adhere to our opinion that occasional and partial individual examinations are a necessity. Let us not be misunderstood. Neither as a body, nor as individuals, have we ever suggested a return to the old system. We have never asked for wholesale individual examination by Inspectors, neither have we objected to inspection *per se*. What we do say, and wish to emphasise, is that, while inspection as now understood is admirable so far as it goes, it needs some help if the standard of efficiency is to be maintained. If the necessary stimulus can be applied in any other way, we shall rejoice.

Mr. Holman, one of H.M. Inspectors, in the Blue Book for 1899-1900 says : "Examination, rationally conducted, is as much an essential and effective part of true education as investigations and demonstrations;" and in this view we entirely concur. It does seem to us a most extraordinary conclusion that a set examination, conducted by the Head Teacher, is necessary and valuable, while an occasional examination by an outside expert is baneful and harmful. Rather, it seems to us that an examination of the latter kind ought to be useful if only to carry the subjects a little outside the grooves into which they are apt to run.

In the Annual Report of the Board Inspectors for 1899, the following words occur in the opening paragraph :—"Under the new system, while the good schools have gone on increasing in real educational efficiency, other schools have lost the old mechanical accuracy, without the compensating effect of increased intelligence."

In Mr. Pinches' Report for 1899 (Board Scholarships), it is stated with reference to arithmetic : "A few of the papers at the Preliminary contained such serious blunders, and showed so little knowledge of the subject, that one is inclined to doubt whether, under the present system, some children do not pass through the standards without satisfying the conditions imposed." Moreover, this latter paragraph was subsequently brought before the notice of the School Management Committee in a memorandum by one of your Inspectors when the question of Time Tables was discussed.

In the Inspectors' Annual Report for 1900 occur the following words :—"We have endeavoured this year, as far as we possibly could, to look at the work in our schools, and we regret to say that in some cases we have been greatly disappointed at what we have seen. We have also applied some tests, and the result of these have led to some misgiving." Then follows an instance of complete failure in arithmetic, which must not be regarded as an isolated case, for it is prefaced by the sentence "we could give a number of instances, but for the present we give one case."

It will be seen from the above that your Inspectors are fully cognisant of the comparative inaccuracy possible under the new system, nay more, that they took an early opportunity of calling attention to it.

In Sir Charles Elliott's memorandum on the "Junior County Council Scholarships" of November, 1900, defects in arithmetic are again referred to. In the problem paper, 6 per cent. of boys and 10 per cent. of girls got no marks at all, only 46 per cent. of boys and 38 per cent. of girls got half marks and over. Mr. Pinches commenting on this says : "I have not the slightest hesitation in stating that the work in elementary arithmetic, as tested by the Code (Rules) Paper, has not only not improved, but is less accurate than it was formerly, and that this deterioration, to which the high percentage of failures at the Preliminary is to be mainly attributed, is most marked in recent years. On the other hand, the work in the Problems Paper has improved."

In so far as actual tests have been applied by ourselves, it does not seem that accurate work is very generally to be found in our schools.

The falling off is most noticeable in arithmetic (problematic and otherwise) and spelling, though it is also found elsewhere. In Mr. Pinches' memorandum on Board Scholarships, 1900, we find : "The Mechanics were not up to the standard of last year, chiefly owing to inaccuracy in working problems."

It must not, however, be thought that none of our teachers are awake to the dangers indicated by such a concurrence of testimony. A circular, issued by the London School Board to its teachers (School Board Gazette, 161), drew attention to the necessity "of securing thorough efficiency in the subjects constituting the necessary foundation of a good elementary education," and many teachers, themselves disconcerted at the spread of effortless and inaccurate work, have been disposed to lay more stress on the fundamental subjects, and this disposition has been encouraged by the tests which your Inspectors have, here and there, applied.

Mr. Pinches is of opinion that the weaker arithmetic of girls' schools arises wholly from defective teaching, and substantiates this judgment by reference to some exceptionally good girls' schools. But it is more than doubtful whether the true conditions of comparison have been obtained. Where we have an equal time given to arithmetic for boys and girls under the same teacher, as in infants' schools and senior mixed schools, there is still a weakness in the girls' arithmetic as compared with that of the boys'. And comparative psychology is in accord with the legitimate and obvious inference.

Finally, it remains to seek a remedy. It is to be hoped that all schools will avail themselves of the opportunity of presenting scholars for the Merit Certificate, and Head Teachers, by exacting a good standard throughout the school, should prevent as far as possible the additional strain otherwise thrown upon the teachers of the upper classes. Moreover, it should be generally understood that all the work of our schools is *liable* to be actually tested as well as inspected.

The rapid multiplication of subjects within recent years must also be regarded as, in some measure, a cause of much want of thoroughness, and greater discretion should be used by Head Teachers who, in ordinary schools, though not in Higher Grade Schools, have almost entire liberty in framing their curriculum.

(B) Extract from the Editorials, *Teachers' Times*, London, March 13, 1903 :—

LORD LONDONDERRY AND THE NATIONAL UNION OF TEACHERS.

The latest deputation to the Board of Education was one of the most important, if not one of the most satisfactory, of recent times. The deputation dealt with the question of "Examination *v.* Inspection."

Here, but little satisfaction was forthcoming. Examinations are not to be re-imposed wholesale, but the inspector is to have the option of examining after six months' notice of this intention, so that in future we shall have a further classification

lassification of schools into examined and exempt schools, with the concomitant pitting of school against school. Moreover, we shall have inspectors who crave for examining doing so upon the least excuse, whilst in other districts their more rational colleagues will minimise examination to the utmost; and although the interesting fact was elicited that Lord Londonderry did not contemplate the return to power of the percentage craze, we know very well that is what we must look for, and the result will be that schools and scholars will again be under the dominion of the Examination Fiend; for who can blame head teachers if, anticipating a possible examination by His Majesty's Inspector, they avoid this by examining the school themselves. We regret very much, from the standpoint of the scholar, that the pendulum is swinging again in the direction of the noughts and crosses.

(c) Extract from an article—"Inspection *versus* Examination"—in *Teachers' Times*, London, April, 17, 1903:—

INSPECTION *versus* EXAMINATION.

The threatened relapse into examination from healthy inspection is a subject that disturbs the teacher's peace of mind. What, however, is likely to be the effect upon the children of our schools?

Though examination of attainments is indispensable in promoting children from class to class, it can only be done satisfactorily by one who knows the children intimately. The mind of a little child is complex, and its growth cannot be estimated by a rough and ready scale. An outsider cannot adequately test this growth and progress; only a teacher can do that.

The value of an outsider lies in the fact that he is, or should be, a judge of school method, and because he is in a position to compare the machinery of different schools. Teachers are isolated in their work, for there are really no practical opportunities for seeing other schools at work. Consequently, there is a danger of monotony—that fatal danger—in method.

An inspector, if he knows his work, can act as the carrier of good methods and the destroyer of inferior methods. He can develop his schools in proper directions and eliminate any tendency to go on wrong tracks. By judicious suggestions he can often give invaluable help to grateful teachers.

Inspection, as opposed to examination, is really a question of point of view. To those who think that all school work aims at making a child self-reliant, self-controlled and eager to learn, inspection of method and its effect on the pupils is best. To those who judge school and teachers' work by the intrinsic results of a test paper worked by the pupils, examination is a fetish.

If examinations were conducted in a less rigid manner the system would lose many of its faults. "There is no such thing as an average child." A child that can work four sums correctly, together with a child who cannot work any, are not equal to two pupils with two right each. Every teacher knows that, and yet rigid examination treats them as if they were. If an examiner tried to find out what children did know, instead of endeavouring to discover what was not learnt, it would be better. Unfortunately many of the old annual examinations resolved themselves into trials of strength between the examiners and the ingenuity of the teachers in cramming their poor little charges with the latest tricks of answering and the favourite idiosyncrasies of the inspector. The pitch of excellence required by individual examinations wasted the time which might have been given to mental improvement on useless parrot knowledge.

The children could not find out things for themselves, time pressed, and very often rule of thumb methods were adopted, for, whatever happened, three sums out of four must be worked correctly.

The very children, backward children, who need careful training in growth of mental power, and with whom all lessons should aim more at improvement of mind than ability to pass tests, are the pupils whom the new regulations propose to examine. The brighter scholars are the only pupils who can spare the time to undergo the tests.

If a teacher does his work well there is more real skill and industry to be expended under the inspection régime than under examination. Any coach can prepare for the latter, but it takes an educator, alert, sympathetic, and energetic, for the former system. Any teacher who has relaxed his efforts under the new conditions has failed grievously towards his pupils, his fellow teachers, and himself.

In accuracy and neatness of work there is very little difference between now and the examination period. But the difference, which was an artificial inflation, represents no worrying of the poor dunces, but kindly, helpful teaching, no intolerable strain for the teacher, and a magnificent step towards true education in the primary school."

(d) Extract from the *Making of Citizens*, R. E. Hughes, Esq., M.A.:—

The examination of individual children and the old system of payment by results (all very well at one time) have entirely disappeared from the English school. Indeed, many persons consider that the pendulum has swung too far, and that a system of leaving certificates, such as those obtaining in Scotland and France, is much needed in the English school, if the thorough and conscientious work of the past is to be maintained.

The old system used examination as a means of gauging the work of the school, and paying for that work at a fixed rate. Examination became identified with payment by results. The general acknowledgment of the iniquity and tyranny of this system of payments has led to a good deal of indiscriminate criticism of the value of examinations altogether in the school. Examinations, however, have a certain value; they are a test of certain sides of school training, these, however, not the most valuable; and they exercise a stimulating influence on both teacher and pupil. Of course, stimulants are always injurious and may be dispensed with—later on! Until the perfect teacher is found, one must be content with the ordinary mortal, who is all the better for an occasional "shake-up" from outside. In Germany, I believe, the teachers themselves would gladly see the Government Inspector oftener.

Examinations undoubtedly compel a certain thoroughness, conscientiousness, and strenuous endeavour. They discover the nakedness of the land; they are fatal to superficiality, carelessness, and spasmodic effort of any kind. A very "Palace of Truth" is the examination room. But examinations have very serious limitations, which I sometimes think we are prone to overlook. It should never be forgotten that, as a complete test of any system of training, examinations are—I was going to say absolutely, but I will say comparatively—useless, because the test is altogether incomplete; practically none of the really valuable elements of school training can be measured by an examination. You can measure fairly accurately the relative capacities of children for retaining facts, but you cannot gauge the child's love for the beautiful, the good, and the true. The character of the child is of too spiritual a nature for you to measure it with so rough a machine as an examination. The one great purpose of school training is beyond this test.

But the English mind is not spiritual—it is practical; it wants facts—it loves facts. So we find educators asking for a return to the old system; they want results, they want facts to deal with. Accuracy, they tell us, is disappearing from our schools. However, provided we have a little more intelligence, what matters a little less accuracy? Children were merely calculating machines; now they are growing into men and women.

School is a place for educating children, not merely instructing them. Instruction is not the end; it is a means to an end—education. If our children are a little more intelligent, a little more like boys and girls; if our schools are brighter, happier, more sympathetic towards childhood,—what matters it if the pupils cannot spell quite so well nor calculate quite so accurately as they did in the days of the old dispensation?

In conclusion, the Commissioner is convinced that in all countries where there is a well regulated system of public instruction the process of inspection should be substituted for that of examination. Bearing in mind, however, the fact that the system of examination has been so continuously followed in New South Wales, the Commissioner recognises that there may be felt some natural hesitation in at once abandoning it in favour of that of inspection. Any risks involved in such a change would, however, be fully provided for if the power be given to the Chief Inspector of Schools to order the examination of a school where he deems such a course to be necessary, either from his own observation or the report of the local Inspector.

CHAPTER LIII.

CHAPTER LIII.

Co-education.[1]

[J. W. TURNER.]

1. *Opinions on Co-education.*—Perhaps on no question concerning education is there so much diversity of opinion as is to be found on the question of the co-education of the sexes. Teachers in the same school hold different views on the subject, teachers and schoolmen in the same town do not agree; some teachers, in countries where co-education has little recognition, approve of the dual system, while others, in countries where co-education has great recognition, are just as strongly opposed to it. Broadly speaking, co-education exists either in the primary or secondary stages of school work, or in both, in England, Scotland, Ireland, Wales, Holland, Sweden, the United States of America, and Canada.

2. *France.*—In France the elementary schools consist of three departments, boys and girls in separate rooms, infants mixed, in all communes having a population of 500 and upwards; and, where the population is less than 500, mixed schools prevail. Women have equal privileges with men in the French universities.

3. *Germany.*—In the towns and cities of the German States boys and girls, both in primary and secondary schools, are taught in separate departments. In the rural primary schools co-education is found. In a few of the German universities women students are admitted by courtesy, or special permission, to some lectures and examinations, and, in a larger number of universities, to some lectures only. The universities of Heidelberg and Freiburg are now co-educational establishments. In 1899 the Grand Duke of Baden, who is permanent president of the universities of his country, issued a decree allowing women presenting a "maturität" certificate (maturity) certificate, to be matriculated like other students.

4. *Norway.*—In the primary schools of Kristiania the sexes are taught separately, but co-education exists in the highest grade schools and the University.

5. *England.*—In England 65 per cent. of the elementary schools have co-education, and the working of mixed schools came under observation in the higher grade schools of London, Birmingham, and Leeds. In the Science and Art rooms of these institutions girls work side by side with boys.

In a volume recently published, "Co-education," edited by Alice Woods, it is made clear that the question of mixed classes is claiming the attention of secondary-school teachers—those with residential pupils as well as day—in various parts of England.

6. *Scotland.*—In Scotland 97 per cent. of the elementary schools adopt the mixed system; the secondary schools have the separate system.

7. *Ireland.*—In Ireland 51 per cent. of children in elementary schools are taught together.

8. *Canada.*—In Ontario all the schools are mixed. In Quebec the schools for English children are, as a rule, on the mixed system; but in the schools for French children the sexes are separated. In Montreal the senior elementary schools have mixed classes, but in the high school the sexes are in separate departments.

In Cape Colony the system is co-educational, but there are separate schools for girls.

9. *Universities.*—At Oxford and Cambridge women are admitted to the lectures of professors, and also to lectures in all the colleges except one. Women are admitted to Durham University on equal terms with men, and are eligible to all degrees excepting the divinity. Victoria (England) and Wales Universities make no distinction between men and women students.

Co-education exists in the Scotch Universities.

In the Royal University, Ireland, women students are on an equal footing with men, and a cablegram of June 4th, 1903, states that the Council of the Dublin University has recommended the admission of women. For the last twenty-five years Trinity College has held examinations for women outside the course for students, and the recent information would seem to indicate that co-education in that University is now perfected.

10. *America.*—In the United States of America while it cannot be said that co-education is universal, it is certainly very general, and the opportunities for studying this particular feature in education are to be found in all grades of the teaching institutions of that great country from the Kindergarten to the University inclusive. The enrolment in the public schools of the United States reached, in 1900, a total of 15,341,220—91 per cent. of all pupils enrolled in elementary and secondary schools. In the grades below high schools (as a rule 14 years and under) co-education is practically universal and excites no comment.

[1] The subject has been very fully discussed in the last Report of the Commissioner for Education, U.S.A., chap. xxviii, pp. 1217–1315 (1901).

comment. The Commissioner of Education, United States Bureau of Education, Washington, feeling that the policy of co-education in the public schools of the United States was one which affected the most delicate social relations of a country, instituted special inquiries among superintendents of education and others, as far back as 1891, and repeated them in 1901, with respect to this particular feature of the schools under their charge. Some of these replies, together with some opinions of the leaders of education in other countries, are given for and against.

11. *American opinions.—Boston, Massachusetts.*—Superintendent: "The subject of co-education does not excite discussion in this city. Everybody, so far as I know, appears to be satisfied with the present condition of things."

Providence, Rhode Island.—State Commissioner of Education: "Co-education is being more and more recognised as the proper method in all grades."

Providence, Rhode Island.—Superintendent: "Personally I favour co-educational institutions."

Greater New York City.—Superintendent: "The present trend of opinion appears to be towards co-education."

Newark, New Jersey.—Superintendent: "I am of opinion that boys and girls are best educated together during the whole period of the elementary and secondary course."

Wilmington, Delaware.—Superintendent: "The trend of opinion of teachers and parents is now decidedly in favour of the plan."

Chicago.—Superintendent: "The trend of opinion on the subject favours co-education."

St. Louis.—Superintendent: "It is my opinion that co-education is more firmly intrenched in popular favour to-day than it was twenty-five years ago."

San Francisco, California.—The subject of co-education has not evoked much discussion in this community, but among teachers there is a division of opinion.

Cincinnati, Ohio.—Superintendent: "I am thoroughly in favour of co-educational high schools."

Des Moines, Iowa.—Superintendent: "I do not think there is an educator in the State so rash as to advocate separating the girls and boys during their school life."

Trenton.—Superintendent: "I do not believe it wise to keep the sexes apart in education. Each sex alone intensifies its own peculiarities. The presence of the other sex modifies this process, and the result is exactly what is now in the world. Intellectually, the influence of the sexes upon each other is most marked. Girls in the presence of boys have a higher intellectual idea. They unfold intellectual possibilities that society did not think they possessed, and that they themselves were not aware of. The boy is, of course, stimulated by the unexpected competition of the other sex."

Philadelphia.—Superintendent Dr. Brooks, advocating the establishment of additional high schools to be placed in the outer sections of his city, in the suburbs really, obtained recently a return of high schools from fifteen cities in the States. Eighty-six high schools forwarded returns, 75 per cent. of which were co-educational. After pointing out the necessity for these "territorial" schools in the interests of pupils living at some distance from the old-established high schools in the centre of the city, he raises the question of the uniting or separating of the sexes in the proposed new high schools, which he views from another standpoint to that usually taken:—"Shall we put up two distinct buildings with two distinct principals and faculties, thus doubling the expense; or shall we erect one building in which the boys and girls shall be educated together, with one principal and faculty for such a school?" After discussing a plan for organising the new high schools on the separate system, he proceeds to say:—"If the board should decide to adopt the principle of co-education in these new high schools, the problem is greatly simplified, and the expense largely reduced. Then I would recommend three distinct courses of study in each school—a general course for boys and girls, a commercial course for girls, and a manual course for boys. All three classes of pupils could recite in similar branches for about three hours a day, while during the remaining two hours the girls of the commercial course could take typewriting and stenography, and the boys of the manual course could take the shop work, while the girls and boys taking the general course could go on with its distinctive branches. . . . I do not hesitate to recommend that these new high schools should be open to both boys and girls. The system is a natural one, and when properly conducted is found to be conducive to better discipline and a higher standard of moral thought and feeling. While I believe it is in accordance with a true theory of education, I advocate it in respect to our new high schools on the ground of economy and convenience."

Philadelphia.—Dr. Macalister, late Superintendent of Schools, now Principal of Drexel Institute, writing in 1890, said,—"My own conviction is that boys and girls can be taught to better advantage in every way together." His opinions under the changed conditions of school work, expressed to the Commissioners in 1903, have undergone no change as regards co-education.

Springfield, Massachusetts.—Superintendent Dr. Balliet, while pronouncing in favour of co-education, states his opinions plainly of the separate system: "I have observed in places in which the sexes were separate that such separation in school had the effect of leading to evils in other unavoidable associations in the street and on social occasions, evils which, but for this artificial separation in school, I believe would not have existed. I believe that what objections there have arisen in certain localities to co-education are due to evils which are not due so much to the effect of co-education as they are due to the fact that there are weak teachers in the school who have not the power to create either a stimulating, intellectual, or a wholesome moral atmosphere in the school. Wherever the separation of sexes appeared to be a necessity, I have found weak teachers and poor schools in general. I believe that they are related as cause and effect."

Newburyport, Massachusetts—Superintendent.—I should say that the boys have been benefited by the presence of the girls; but that the girls have not gained by the change. I believe in all grades the girls have been the losers in many ways by co-education.

Greater New York—Superintendent.—Dr. Maxwell states, from personal observation, that there is much opposition to co-education in the more densely inhabited parts of New York City, particularly where there is a large foreign element present in the schools. It was noted by the Commissioners that in Boston, in similar quarters, separate schools were used for the sexes, and the fact stated by Dr. Maxwell was attested by several of the masters whose schools were visited. Mr. Davis, Assistant Superintendent, is strongly opposed to co-education on moral grounds. He is of opinion that the teaching of the sexes together in the same class is only safe in the hands of a thoroughly tried and experienced man with a great amount of common sense, immense tact, and a close acquaintance with child life. He is also opposed to co-education for economic reasons. Female teachers of mixed classes in New York are paid extra.

Atlanta—Superintendent.—It is my decided opinion that it is better that the sexes should be separate and taught entirely apart after they have reached the high school age. I am very sure, from both experience and observation, which extend over a period of fifty years, that we pursue the better plan.

Denver, Colorado—Superintendent.—I think co-education of youth in their teens is not productive of the desired results. I object to an identical amount of time for both sexes, and to identical courses of instruction. The requirements and duties of the girl demand a training over and above that demanded for a boy. The boy 15 years old can well afford to put in six hours a day in study and class work; his sister, 15 years old, has duties of which he knows nothing, but which are important, and which demand time for execution.

Boston School Document No. 19, 1890. Extracts from Majority and Minority Reports on Co-education of the Sexes:—

Majority Report.—If it is right for brothers and sisters to live in the same house and eat at the same table, then it is right that they should attend school together. Let them be brought up separately, and if they meet only clandestinely great harm is likely to result. If wedlock is right and proper, then co-education is right and proper. If men and women are to marry, they should know each other, summer and winter, before marriage, and the more they know of each other the less likely will divorces result. The serious objection raised by physicians to co-education is based upon the delicate organic condition of girls, but by the introduction of the excellent system of physical culture made in our public school, the weak and delicate girls will become strong, and the objection will ultimately vanish. The committee recommend—

1. That the normal school be so arranged that young men may enter, and join the young women in the same course of study.
2. That the boys in the Latin and English high schools, and the girls in the girls' Latin and high schools, be united in mixed classes as soon as practicable.
3. That the grammar schools, on separate system, be arranged for mixed classes as speedily as the necessary changes in the buildings will warrant.
4. That in the grammar school buildings, where boys and girls attend, but where the sexes are separated, the change be made by having mixed classes.
6. That all newly-erected buildings, and buildings to be erected, be arranged for the co-education of the sexes.

Minority Report.—Large numbers of letters have been received from teachers in favour of mixed schools, chiefly on the grounds that it is easier to maintain discipline when boys and girls are together; and, second, that the influence of the sexes is mutually salutary. The minority would reply that a good teacher has no difficulty in maintaining discipline in separate schools . . . . and it remains to be shown whether the supposed advantages of association in schools are not by far overbalanced by certain evils of such association. To the argument of the social value of co-education, the minority would reply that the duty of the State is to educate her children in the public schools in the branches of common-school education, and not to provide for social intercourse between the sexes, however desirable that may be. Much could be said of the unwisdom, considering the differing aptitudes and mental attributes of boys and girls, of teaching both sexes after the same methods, even if the studies pursued are identical. Much, too, could be said of the unhealthful rivalries between boys and girls, and of the baneful stimulus to delicate girls to overwork their minds at times when they should be allowed to rest.

12. *Opinions of Co-education in America by Foreign Educationists.—Dr. E. Schlee*, Real Gymnasium, Altona, Prussia, says:—"A schoolman of large experience personally told the writer that co-education had a favourable effect on the general behaviour, on the bearing of the pupils towards each other, and, on the whole, discipline. Germany takes in this respect, perhaps, the right medium between France and America; but if one observes how beneficial in general is the comradeship of the children of intimate families, one might, where the nature of the studies and where outer circumstances, especially in smaller places, make the union desirable, consider that the American way would be advantageous in our country also."

Professor Stephan Waetzoldt, University of Berlin, Chief Commissioner, German Educational Exhibit, Chicago:—"At the Congress of Education at Chicago, this subject was often discussed, and not one disapproving voice was heard. Americans see only the advantages of co-education, believed to refine the boys and strengthen the girls. The intercourse of boys and girls, of adults and children, is altogether different from what it is among us, and I doubt whether it has a moral advantage. Certain it is, however, that the girls on the average are more intelligent than the boys; they go to school longer."

Professor Emil Hausknecht, of Berlin, for several years Professor in the National University at Tokyo:—"As a makeshift, co-education is better than nothing. As a principle, it entirely ignores the needs of the separate sexes, arising from the differences in the development of boys and girls. Boys and girls, from the ages of 14 to 18, must be differently treated, both in regard to the intellectual and emotional nature. Co-education is possible, however, in America more than in Germany or elsewhere, because custom and education have given to the girl and the woman greater freedom and determination in their manners and appearance, but also give them strong protection against encroachments and improprieties. Co-education is possible in America, also, because the week has only five school days, Saturday being a holiday, and the school day has only five lessons, of which one is usually a study hour. Besides, grammar and high schools require much less severe intellectual efforts, and a much more concentrated and simple exertion of the mind than is required in our secondary schools for boys."

Mlle.

Mlle. Marie Dugard, delegate to the Chicago Congresses of 1893, reporting to the Minister of Public Instruction, France, summarises the arguments on co-education from both sides of American view, and adds her own impressions, as follow: "It did not seem to me that, in the mixed schools, the hygiene, the work, and the order suffered from the presence of the pupils of another sex, and the appearance of the classes seemed to me even better than in the separate schools. . . . . But would co-education be acclimatised anywhere else? And in France, where it exists already in some departments of instruction, should it be extended to all?" (Her final conclusion is that co-education is impracticable for France.)

Anna Bentzen, of Norway, who visited the United States for the purpose of studying the system of co-education, says: "It is plain that the cause obtains footing more and more, instead of losing it. All school authorities, superintendents and directors, pronounced themselves unconditionally in favour of the policy, and presidents of colleges and universities expressed themselves in the same terms wherever co-education had been introduced. In vain they look for intellectual inferiority of women, even in the highest educational institutions. It must not be imagined that all schools possess a class of clean, well-situated, well-educated children, who might be sent to an exhibition; but, although there are schools which use up all the energy of a teacher within a short period of time, destroying her good humour, and tempting her to use a cane, we find that such is most often the case in those schools where no co-education is advocated, and where now, as in some schools in Boston, they are afraid of introducing co-education because wildness and roughness seem to be their inheritance and possession. In America, young boys and girls associate in a friendly way together from their earliest childhood. They have all opportunities to become acquainted in school. I had special opportunities in the Western States to observe these natural relations, both in University cities among the students, and other young people who were following practical careers. The young girls were strikingly easy and natural in their manners. From a moral standpoint, I discovered only healthy results from the American co-education. It still remains to examine its effect in a physical aspect. I have been much impressed in American schools by the weakly, pale-looking children, with bad carriage of the body, and much nearsightedness. But I did not receive the impression that the girls looked more delicate, nor do statistics report to this effect. Both boys and girls suffer from overcrowded classes, from bad ventilation and severe drafts, the want of playgrounds, and one-sided mental work. Finally, I will add a remark on the economical feature of co-education. When I consider the equipment of the American high schools, and then imagine these expensive buildings doubled in order to accommodate each sex separately, there arises a strong doubt in my mind. Would it be possible to furnish these schools with expensive laboratories (not with one, but with three), with excellent microscopes, well-suppled libraries? Hardly in smaller cities, where there is at present only one high school; however well the boys' high school might be equipped, the girls' high school would no doubt leave much for improvement."

13. *Opinions of Michael E. Sadler, Esq., M.A., and Dr. W. T. Harris.*—In the English-speaking world of to-day, there are no greater authorities on educational questions than Mr. Sadler, of England, and Dr. Harris, of the United States, each holding in his own land the foremost position among educational thinkers, and both retaining the respect and confidence of all interested in education, foreign or otherwise, for their sound views, their straight-out opinions, their able and valuable contributions in regard to educational literature. Mr. Sadler's latest views on the subject are set out in a work entitled "Co-education," edited by Alice Woods, 1903. Dr. Harris' views are quoted from his reports on Public Schools, St. Louis, 1872–1873, when he was superintendent of schools in that city. An interview with this most courteous gentleman in January last disclosed that he is still the whole-souled advocate for co-education on lines laid down over thirty years ago, and that his wider experience as Commissioner for Education, United States of America, has not changed his views of its benefits one iota.

Mr. Sadler's Opinions.—"For my own part, I am impressed, but not fully convinced. The co-education of little boys and girls, if carried on under very careful supervision, and in suitable surroundings, seems beneficial beyond dispute. But the co-education of boys and girls beyond the age of 13, or thereabouts, is a different matter altogether. . . . I feel that, to some extent in day-schools, and to a very much greater degree in boarding schools, the co-education of elder boys and girls is likely to prove, as a rule, less desirable in its results than a course of co-education up to, say, 12, or possibly 13, followed by some years in separate schools with rather different courses of study. . . . No one who is at all aware of the complexity of the facts involved, or sensitive to the differences in the social ideas which, consciously or unconsciously, affect people's wishes for the training of the young, would think of laying down a hard and fast line about co-education. But I, for one, believe that, in the greater number of cases, to be educated in common with boys throughout the latter part of her secondary school career would not be the best kind of training for a girl. Many of the studies most suitable or necessary for boys of 14 years and upwards would be a good deal out of gear with her future practical needs, at any rate if she is to be a home-maker, and still more so if she is to be the mother of children. Again, at the age in question, a girl ought not, as a rule, to work at the same pace as a boy. . . . . We shall all agree at any rate, that throughout boyhood and girlhood it is right and good for boys and girls to be much in one another's society in a friendly, unconstrained kind of way, and to have many interests and pursuits in common."

Dr. Harris' views.—"My observations have led me to endorse the statement of Richter—"To insure modesty I would advise the education of the sexes together; for two boys will preserve twelve girls, or two girls twelve boys, innocent, amidst winks, jokes, and improprieties, merely by that instinctive sense which is the forerunner of natural modesty. But I will guarantee nothing in a school where girls are alone together, and still less when boys are." I had noticed that the atmosphere of mixed schools was desexualised, where that of separate schools seemed to have a tendency to develop sexual tension. Again, whatever tendency toward indecency might manifest itself was far more easily checked in mixed schools by reason of the cross-fire of watchfulness which made intrigue far more difficult to keep secret. . . . The fact that the chief association between the sexes in mixed schools takes place under the eye of the teacher and in recitation, wherein the contest is purely intellectual, and where the manifestation of mere femininity—softness and sentimentalism—would cause the pupil to lose rank as a scholar, and where mere masculinity—

masculinity—roughness and wilfulness—would make an unattractive spectacle, leads one to expect that the tendency of co-education is to elevate the standard of admiration from mere external charms of person to the spiritual graces and gifts which lie deep in the character." Dr. Harris claims for co-education as existing in the city of St. Louis that—

"(1) Economy has been secured through the circumstance that the co-education of the sexes makes it possible to have better classification and at the same time larger classes.
(2) Discipline has improved continually with the adoption of mixed schools.
(3) Instruction is also greatly improved.
(4) Intellectual development is far more sound and healthy."

14. *Conclusions.*—In the public schools of the rural districts of New South Wales, and in all public schools excepting those of the first and second class, which are always located either in the metropolis and its suburbs or in the large towns, co-education prevails. The first and second class schools have three departments—boys, girls, and infants. In the infant department the classes are mixed. The system of mixed classes in New South Wales has given rise to no serious discussion on the part of parents or others, and it may be said that existing arrangements regarding the teaching of the sexes together are satisfactory. (It is within the knowledge of the Commissioners that some parents living in a thriving metropolitan suburb, in which the local public school has much improved in numbers, but is not yet converted into three departments, are sending their boys and girls to a public school in an adjoining suburb where the sexes are taught separately. But there are no grounds for believing that this practice is at all general, or that the local school will suffer from reduced numbers to any great extent.)

The trend of public opinion in English-speaking countries is in favor of co-education; on the Continent it is against co-education. As far as it exists in the higher education in this State, co-education has been found satisfactory.

The Commissioners favour the system of co-education of the sexes, but not to the extent of interfering with existing arrangements. They give a general endorsement to the views of Dr. Edward Brooks, Philadelphia (already quoted), and are of opinion that some of his recommendations are worthy of consideration in developing the scheme of higher education.

CHAPTER LIV.

CHAPTER LIV.

The Co-ordination of Education.

[G. H. KNIBBS.]

1. *Introduction.*—The moment a system of education in a country aims at being *thorough*, just so soon does the question of co-ordination of its different grades rise into prominence. Consequently, in all countries that may be said to have educational *systems*, the scheme of co-ordination is fairly well defined. In this State, however, there is as yet, *no* complete co-ordination. In the schools of the Department of Public Instruction, entrance to a High School is determined by its own entrance examination, or by the attainment recorded in the lower school. And similarly the University holds entrance examinations to determine, not whether students shall be allowed to attend its various lecture-courses, etc., but whether they may be considered as regular students, entitled on passing the yearly examinations, etc., to the degree of the course. The *injuriousness of the system of entrance examinations* will be dealt with hereinafter.

The marking off of the stages of education at certain years, may be perhaps somewhat arbitrary; nevertheless, fairly well-defined periods in educational life are so determined. To these one may now refer.

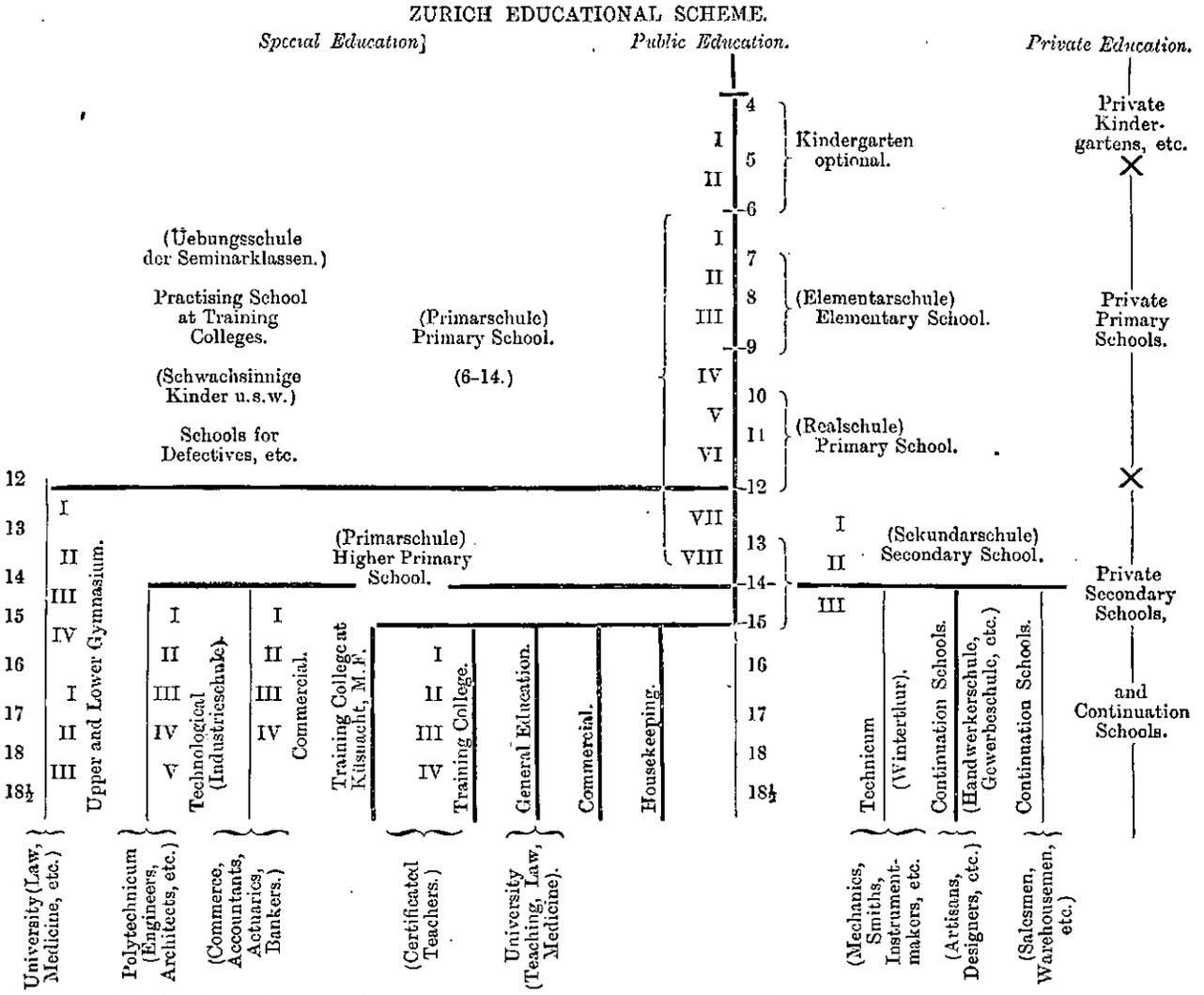
2. *The stages of education.*—The following outline will illustrate in what manner the various grades of education may be said to naturally divide off. The figures denote ages in years, and the course indicated is the direct path to University education.

SCHOOL LIFE.

Kindergarten.	Transition.	Elementary.	Primary.	Higher Primary.	Secondary.	Higher Secondary.	Super or.
—6	6—7	7—10	10—12	12—14	14—16	16—18	18—

The real significance of such division can be adequately illustrated only by reference to the schemes of countries that have definitely co-ordinated systems. That of the Canton of Zurich, Switzerland, may be taken as a first example. In this the thick lines represent free education; figures, the age in years; Roman figures, the class. Throughout, M. F. will denote "male" and "female," not only in this section, but throughout the chapter.

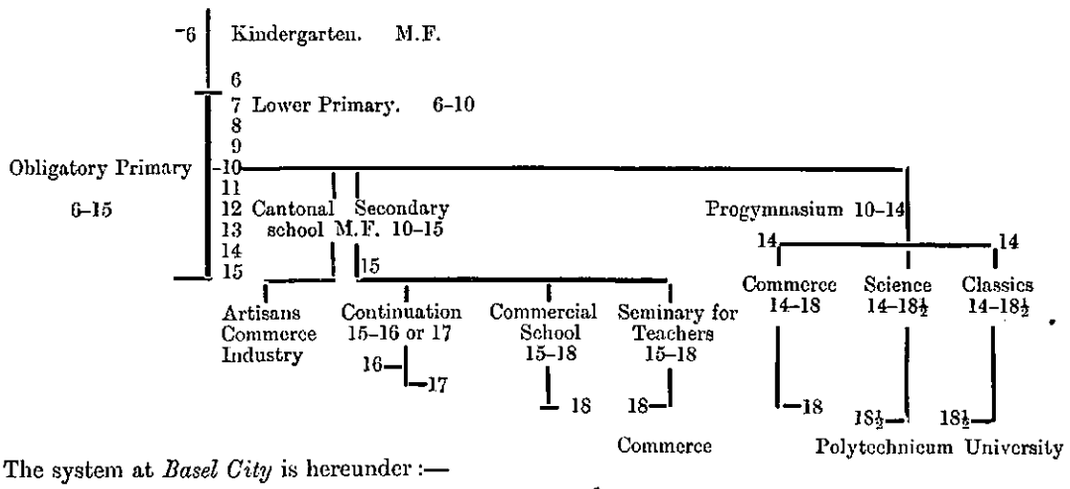
ZURICH EDUCATIONAL SCHEME.



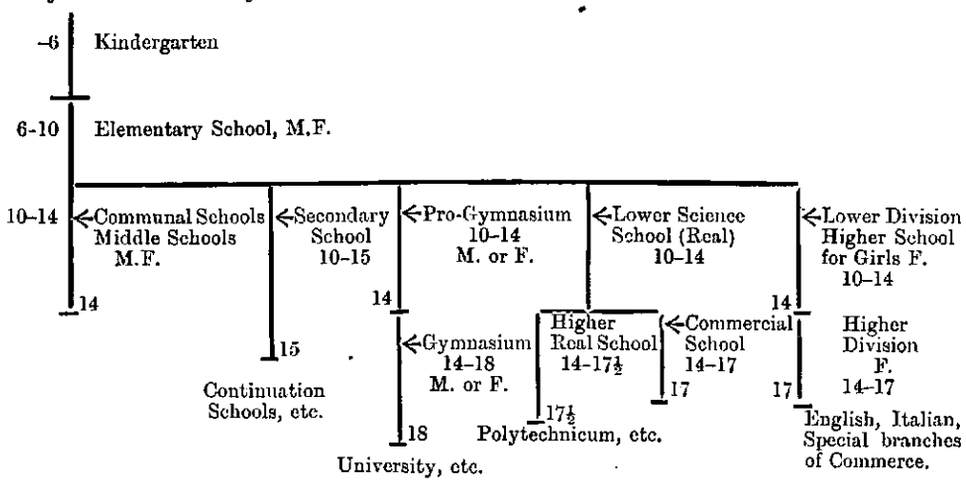
In the above diagram the horizontal lines denote merely the scheme of connection. For example, one can leave the 6th class of the primary school and enter the first of the four classes of the lower gymnasium. It is evident also that the University can be reached in more ways than one. Explanation is unnecessary.

The above will give some idea of the Zurich system. In section 4 of chapter V, the co-ordination of the Geneva system was outlined.

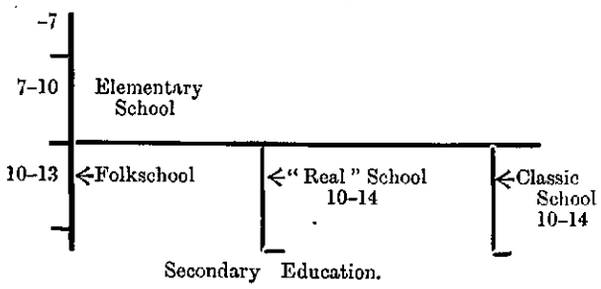
3. *Further outlines of the co-ordination in some educational systems.*—The following examples, taken at random, will give some idea of the scheme of co-ordination of education in several countries. In the Canton of *Berne*, Switzerland, the division is pretty much as follows:—



The system at *Basel City* is hereunder:—

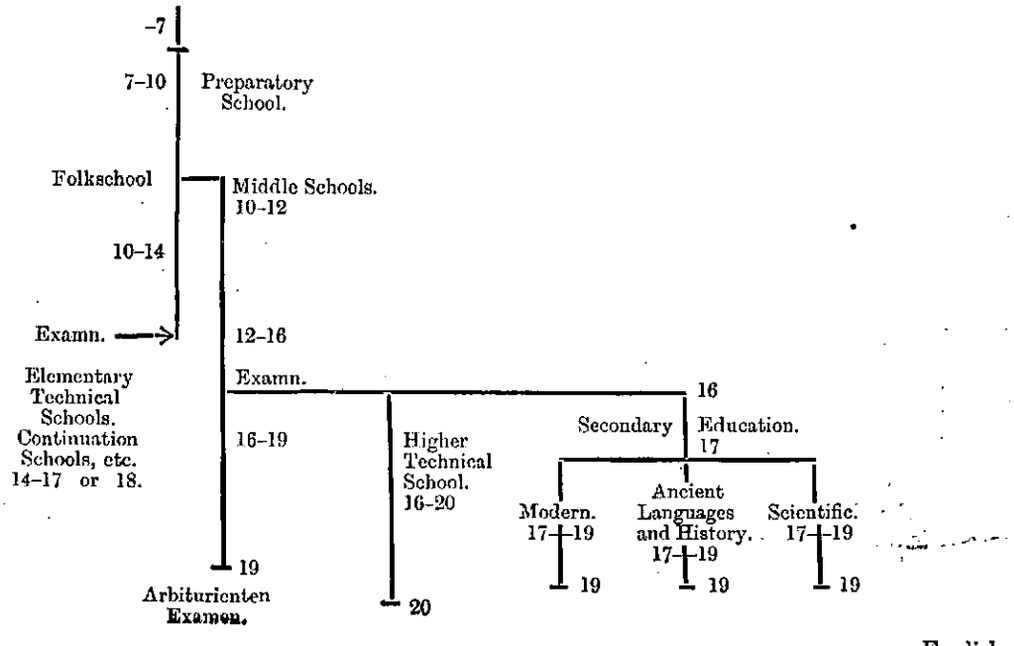


The system of *Sweden* for lower education is as follows:—



It may be noted that if Latin and Greek are taken, instruction therein commences when the pupils are about 12½ years of age.

The system of *Norway* is—



English and Latin are commenced at about 13 years of age; and at 16, 9–10 hours a week are given to Latin, and to Greek 6–7.

What has been indicated is sufficient to illustrate how educational progress is made along certain definite paths according to the ultimate career intended to be followed. These examples are, of course, to be taken merely as illustrative.

The essential features of a co-ordinated system, and its true significance, will be fully discussed in the light of the experience of other countries. First of all, it may be pointed out what thorough co-ordination demands in the way of initial conditions.

4. *Requisites of co-ordination.*—Co-ordination in education involves the prescription of—

(a) Definite curricula, not necessarily identical at each grade, but officially and legally recognised as implying specified standards of qualification.
(b) Definite standards of professional qualification for teachers for each grade of teaching, so as to ensure teaching efficiency, and as a guarantee of their certification of the standard of education attained by pupils.
(c) Examinations of pupils at definite stages of education to prove qualification up to the given stage; such examination being conducted by the teachers themselves.
(d) Recognition of a scheme of equal values among the elements of the several curricula, with a view to securing the greatest freedom, consistent with thouroughness of education, in passing from any one line of development to any other.

These will hereinafter be referred to *seriatim.* Before passing to their consideration, however, it is necessary to point out that *thoroughness* of system is essential in any scheme of co-ordination. All schools of a given type must afford a reasonable guarantee that the class of education given therein is of the same general standard, so that a pupil possessing their certificates of competency, may be accepted as having proved his educational qualifications up to a particular grade. That the present *régime* does not lend itself very readily to satisfactory co-ordination, does not touch the question of its final desirableness or practicability. The subject is important as shewing the drift that the organisation of education must take in order to be radically improved.

The defects of unco-ordinated education may now be referred to. These are chiefly of two kinds, viz.:—

(i) Uncertainty as regards preparatory education for particular careers, occupations, etc.
(ii) Injurious influence of the system of entrance examinations.

Both these evils can be avoided by securing proper qualification on the part of teachers, and making the curricula definite.

5. *Definite curriculum.*—Given thoroughly qualified teaching, a definite curriculum is the only essential guarantee that education shall cover a certain range that may be accepted as a minimum in regard to proper preparation for practical life or the higher education. Throughout the kindergarten period, the transition from kindergarten to the elementary school, and the period of the elementary school itself, or say the educational period up to 10 years of age, it is desirable that the system should be absolutely uniform—that is to say, the programme should be identical throughout all schools embraced in the co-ordination.

While it is impossible to treat children of 10 as if they were called upon to decide as to their subsequent career, differences in intellectual tendency, taste, and aptitude often commence to exhibit themselves between the years 10–13; hence, if languages are to be learnt, there seems to be no strong reason why some alternatives should not be then allowed, so that from 10–12 there might be two courses permitted—as, for example, decision to learn ancient or modern languages or both: this to apply in all the better classes of schools (town-schools). There is great advantage, however, in unity of plan; and as the State has made 14 years the limit of the age of compulsory attendance, the periods might well be divided into—

Primary	Higher Primary.	Secondary.	Higher Secondary.
10–12.	12–14.	14–16.	16–18.

Then languages (beyond the mother tongue) could commence, say, at 12 years of age, a little etymology etc., of course being taken earlier, with a view to the better understanding of the mother tongue. Under the latter arrangement there would be either absolute, or at least substantial, identity of education up to 12 years of age, and differentiation only from 12–14, in the primary system of public instruction. This would give a sufficient common basis.

The various curricula to cover the years from 12 to 18 need only to be made definite, and an exact scheme, for passing (with a minimum loss of time) from any one course to any other, outlined, in order to make co-ordination thorough.

6. *Definite qualification for teachers.*—Identity of curricula, however, has very little significance unless the teaching is qualified. Where untrained and indifferently educated teachers are employed, all is uncertain, for their best teaching is necessarily poor; but with the abandonment of pupil-teachers, and the substitution of properly educated and properly trained teachers, the whole aspect of education is changed. Although the teachers themselves will always exhibit differences in natural aptitude for teaching, that matters little as regards unity of curriculum as long as they have been thoroughly educated and trained to teach. That they will have a great variety of material in the way of pupils to deal with, is far more likely to introduce difficulty in maintaining uniformity, since the general curriculum will have to be somewhat modified to meet the varying circumstances of those to whom it is to be applied. These things, however, can, with complete confidence be left in the hands of trained teachers, though not with the untrained (or pupil) teacher, for in the latter case there is no proper ground of confidence, but rather for its absence.

A properly-qualified (*i.e.*, educated and trained) teacher can, moreover, correctly judge of the standard reached by his pupils, and can be trusted as regards his estimate of their progress, provided, of course, that his official treatment is made independent of the pupil's success. No other person has the same opportunity of forming a correct judgment.

7. *Examination of pupils.*—There must, of course, be some kind of examination to determine the promotion of pupils. In general, this may take almost any form; but at what may be called the critical stages of the educational career, it should be more than ordinarily thorough, so as to guarantee qualification up to the particular stage.

The question is at once suggested: "Should these examinations be held by those in daily contact with the pupil, or by examiners who know nothing of them?"

Examination by the latter is sometimes assumed to ensure impartiality, and incidentally to offer some criterion of the efficiency of the teaching. It is, however, liable to very grave objections. Success in examinations held by persons unfamiliar with the pupils is largely secured by—

(*a*) Intense preparation within a limited field ("cramming");
(*b*) Careful estimation of probable subject-matter of examination (correct judgment as to the examiners' idiosyncrasies).

To meet the actual conditions of very many examinations, it is customary to aim at developing great—

(*c*) Rapidity of working.

It is well known that those who professionally prepare for examinations ("coaches") study these matters systematically.

It may be at once said that wherever examinations lead to "cramming," instead of thorough work, they are injurious. Children and adults, by natural endowment, have very different rates of working, and *the main thing to be aimed at*, especially in the initial stages of education, *is thoroughness rather than mere rapidity*. If the fundamental work in the educational career be well done, there need be no fear as to subsequent developments, and while rapidity should to some extent be cultivated, it is not a requisite of high importance.

Examinations conducted as throughout Europe by the teachers themselves, not by Inspectors or by outside authorities, have the advantage of being able to take *all* the facts fully into account; and when there is no doubt as to the quality of the training in teaching, there is no valid reason for introducing outside examiners, less able, in the very nature of the case, to reach an accurate judgment. When, however, untrained and indifferently educated teachers are employed, all examination is rendered somewhat uncertain, whether conducted by the teachers or by outside authorities. That the persons best qualified to judge of pupils under examination are the masters or professors who are in daily contact with them, when at least the latter are properly qualified to *teach*, is obvious from the fact that they can best discriminate between mere memorising and intelligent following of the courses of instruction. They, too, can best make allowances for any temporary disturbance of normal conditions.

"Cramming" is so serious an evil in the incidents of modern English education that a word or two may be allowed in respect thereof.

For illustration, let the Public Examinations held under the auspices of the University be considered. Since the reputation of any school is greatly affected by the percentage of passes it secures on the number it sends up, there is the strongest temptation to do several things, viz.:—

(i) To devote too much of the teaching energy to the preparation of the candidates (involving neglect of the other pupils in the school).
(ii) To sacrifice general thoroughness of education to special excellence in the subjects undertaken for examination (that is, to concentrate effort in a limited field).
(iii) To sacrifice the physical and mental well-being of the pupil to attain to this supposed excellence.
(iv) To exhibit to the learner the fact that in the official view "*cramming*" *is more profitable than thoroughness* (which is morally injurious).

The result, where education is required to be thorough, is on a totally different platform. *Here the teacher himself must be examiner.* The pupil can then devote special attention to his weak subjects, instead of neglecting them for those in which he has natural aptitude, perfectly assured that his aim at normally developing his education will be rightly appreciated and estimated. Under this latter system, instead of being tempted to abandon the study of those subjects wherein he is weak, he is, on the contrary, moved rather to make them good, especially when he is assured that they are essential to his proper educational development.

It is obvious that, with sufficient guarantee of the qualification of a teaching staff, the method of *certificating by the school* is better than passing examinations held by outside authorities; thus it may be said the passing of an "Arbiturienten Examen" at the close of a career in a Gymnasium, as a certification of sufficient education to profitably attend a University, is preferable to an Entrance Examination held by a University to determine Matriculation. And at this thoroughness of educational method an educational system must aim if it intends to be properly co-ordinated. This practically expresses the continental view.

8. *Equal values among various curricula.*—This is a question that must be fully discussed in connection with secondary and higher education. Here it will be sufficient to point out that so long as thorough preparation is assured, it is really immaterial on what particular paths the preparatory steps are taken; hence, among the curricula of various higher schools, there should be recognised not only an equality of academic dignity among them, but certain courses might also be reciprocally substituted. All possible liberality of initial preparation is desirable.

Thus a definite course of mathematics in a continuation school may be regarded as the equivalent of one in a secondary school, and similarly with other subjects.

9. *Uncertainty in the absence of co-ordination.*—Throughout the world there is a marked tendency to demand that for certain careers and occupations there shall be a definite educational preparation; thus, for employment in commercial houses, the passing of a special examination is becoming necessary even in New South Wales. And the movement will extend here as elsewhere, for general progress is demanding special, in addition to general education.

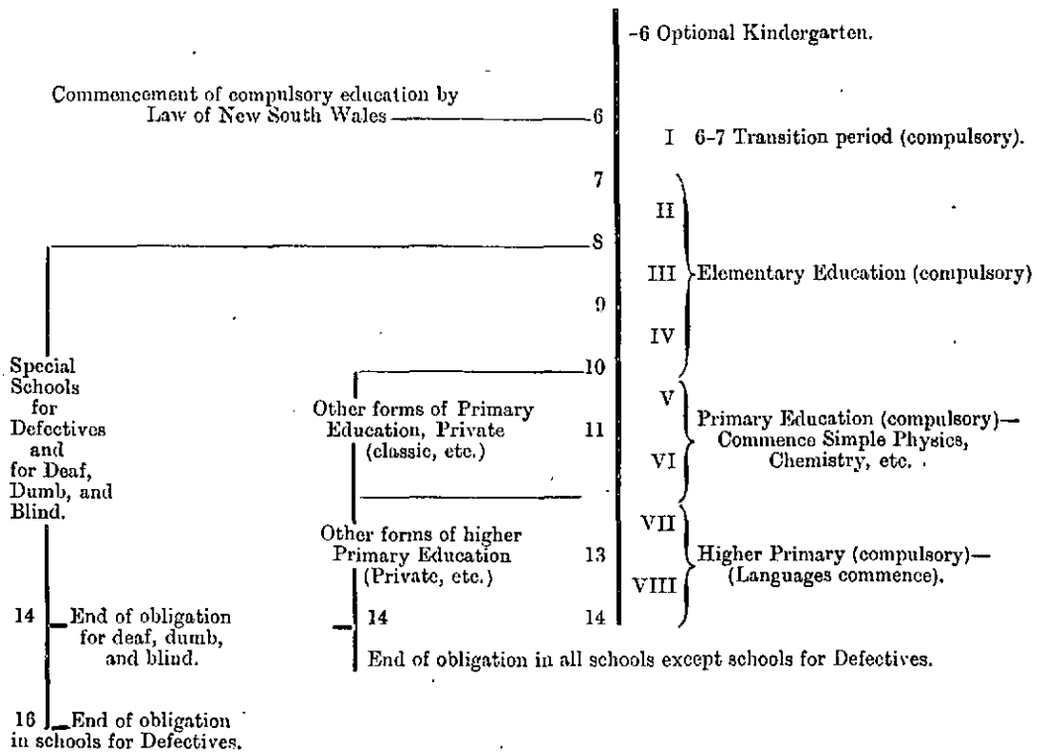
Bearing in mind that the proper authority to examine, in any fully developed educational system, is within the school organisation itself, and not some outside body, and that the outside examination can never assume the same degree of thoroughness, it is evident that the proof of proper educational preparation can only be complete in a fully co-ordinated system of education, where certification at a particular stage is a guarantee of competency either to proceed to a particular career or to proceed in a regular way to higher education.

10. *Co-ordination to end of Higher Primary Education.*—In the earliest stages of *general* education, the pure kindergarten type is probably the only healthy type of school activity; and whatever changes may come about through criticism of its details (gifts, occupations, etc.), one may assume its principle to be permanent. The only *special* education up to the end of the kindergarten age (6 years, say) will be *private*, for defectives.

From 6-7 should be a transition period, during which the child, accustomed only to the free discipline of the kindergarten, may be prepared for the severer and steadier work of the primary school. The free organisation of the kindergarten cannot, of course, be maintained in the primary school, and the year of transition is necessary for the children to *accustom themselves* (without coercion) to the new and less free organisation.

During this year, and the first year (7-8) in the primary school, children who are backward can be under observation, so that they may be classed either as *mentally weak*, or as mentally normal but slow, in the former case being drafted off into *special schools for defectives*, in the latter kept under the stimulus of the ordinary school.

The period 7–10 may be called *elementary*, from 10–12 *primary*, from 12-14 *higher primary*, the point at which obligatory education ceases in New South Wales. This may be represented as follows:—



The above may be called the normal development for town schools, and in country schools the grade of corresponding classes could be determined in special ways.

11. *Co-ordination in advanced stages of Education.*—In the stages of education following on the primary school, the classes of school may be divided into those that are—

(*a*) Supplementary (Special and Technical education, etc.).
(*b*) Secondary (Advanced general education).
(*c*) Superior (Higher technical, professional, and general education).

The distinction, however, has to be drawn as to which lead on to other forms of education; for in organising education certain curricula, as previously mentioned, ought to be regarded not only as complete in themselves, but also as *preparatory to higher forms of education.* This is the essential principle of organisation. To understand it in practice, an illustration may be taken from the system of some other countries. Some of the cantons of Switzerland have excellently developed their educational systems in this respect, and one of their schemes will serve to make the point clear.

Schools that supplement the education received in the primary school without necessarily leading to still greater forms of education, are known in Switzerland as complementary schools. (Ecole complémentaire, Ergänzungsschule.) They may be of several kinds, as, for example, schools for—

(i) Professional education, industrial, commercial, agricultural, etc.
(ii) General culture, with professional tendency.
(iii) General culture, without professional tendency.

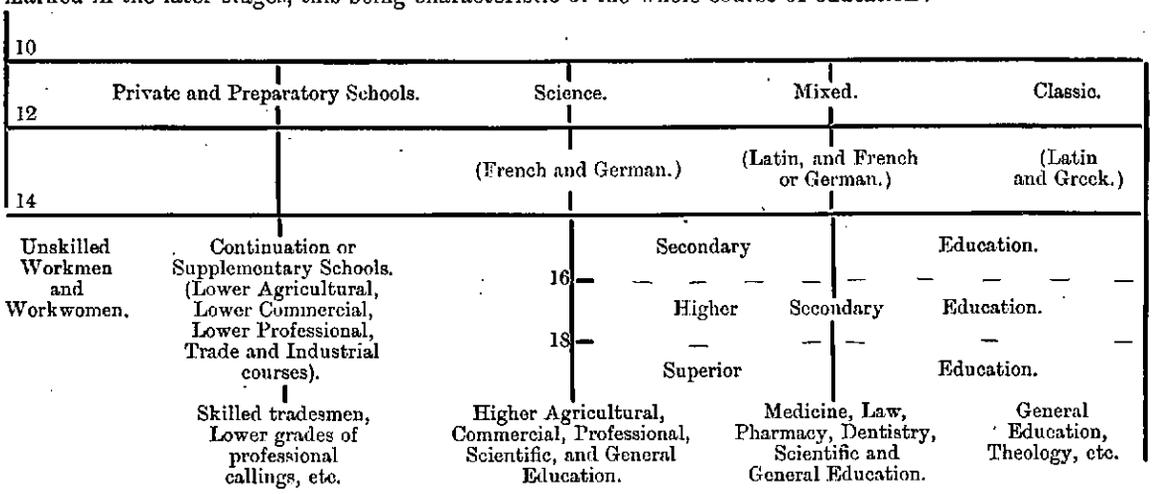
All countries have some form of such schools. In many of the cantons of Switzerland they are free and obligatory, the attendance being from 13-15, 14-16, 15-18, 16-19, etc. Such schools are not designed to lead to higher forms of education, but to equip for practical life either by better general, or by special education. The Fortbildungsschule (continuation school) of Germany has the same object.

Schools that aim at preparing for still higher education, or for technical or professional education, may all be classed as secondary schools, and may be divided practically into three kinds, viz.—

(1) Schools taking account mainly of modern development, (*e.g.*, science, modern languages, and modern commercial and industrial development).
(2) Schools taking one dead language (Latin), generally only one modern language, and science, etc.
(3) Schools in which stress is laid on Greek, Latin, and literature proper.

Any of these may have special tendency, or be entirely devoted to education from its general point of view.

The following diagram will give some idea of the organisation of supplementary and secondary schools. The dotted lines in the diagram imply some degree of inter-relation, which naturally is less marked in the later stages, this being characteristic of the whole course of education :—



Among the various courses indicated under the heading "Superior Education" there must necessarily be some having much in common. A satisfactory co-ordination scheme will make this clear. In the sphere of secondary education also there is a certain amount of possibility of passing from one line on to another. The exact way of doing this may be defined in an educational organisation. To achieve this without holding special examinations is much to be desired, in order that education may aim solely at thoroughness, and that mere solicitude to pass examinations may become an incident of the past.

12. *Conclusions.*—The following conclusions are suggested by a review of the subject of educational co-ordination :—

(1) The ultimate possibility of replacing special examinations held by outside authorities by examinations held by the schools themselves should be kept in view in every future attempt to more thoroughly co-ordinate our educational system, since the present method is not the best in the interest of educational thoroughness.
(2) A definite programme of educational possibilities under existing institutions should be officially outlined from time to time, shewing clearly the scheme of qualification for particular callings.

CHAPTER LV.

CHAPTER LV.

State's Relation to Education, Unification, Subsidy, etc.

[G. H. KNIBBS.]

1. *Introductory.*—Since the Education of the People is the State's true concern, every educational instution should be, if not under its *ægis*, at least embraced in its care for the public well-being. The State has, undoubtedly, the deepest interest in such an organisation of education and liberal unification of educational methods as shall assist in creating a self-reliant, mentally and practically able, and moral community; for, as said by an eminent Hungarian, "the strength of a people depends upon the number of wise heads in it." A sketch is consequently given shewing the present state of the organisation of education in New South Wales, and matters cognate therewith are also considered.

2. *Organisation of Education in General.*—In so far as the State is concerned, the organisation of education is of two kinds:—

(1) Private. (2) Public { (i) Not directly controlled by State. (ii) Directly controlled by State.

The former (i) has many incontestable advantages, and the right to educate children privately, *i.e.*, in the *home* should be here, as it is everywhere else, respected, so long as the education given is adequate for the proper discharge of individual duty to the State, and satisfies reasonable requirements.

The division of the latter (2), into schools, controlled or not controlled by the State, is hardly fundamental. Another subdivision may, therefore, be indicated, viz.:—

(*a*) Schools organised under a definitive scheme, *i.e.*, having a definite plan of organisation and administration, viz.:—

(i) General denominational schools and colleges of all kinds.
(ii) Municipal schools and colleges.
(iii) *State Schools* and colleges of various grades.
(iv) Universities and their affiliated colleges.

(*b*) Schools of independent organisation, that is, not administered as units in a general administrative scheme, viz.:—

(i) Autonomous denominational schools and colleges.
(ii) Autonomous private schools.

3. *Organisation of Education in New South Wales.*—In the State of New South Wales there are all types of educational organisations except (*a*) ii, viz. *Municipal Schools and Colleges.* "Communal," "Municipal," or "City" schools are, however, a feature in the educational machinery of many countries throughout the world, their cities and towns including some of the most magnificently equipped nstitutions. They are likely to arise in any country where the interest in education is great.

In this connection it may be mentioned that in places where there is rivalry between State and Municipal provisions for education, the Municipal or City Schools are, with very few exceptions, very much superior to the State schools, both in respect of buildings and internal equipments, at least in the larger cities and towns. On the other hand, in the smaller towns, and in the villages the State school is usually, but not always, somewhat better than the Municipal school.

4. *Effect of Public Opinion on the Organisation of Education.*—It was observed by the Commissioners during their tour that a strong public opinion on the importance of education was invariably followed by:—

(*a*) A thorough discussion of the educational problem.
(*b*) The erection of well-equipped schools and other educational institutions.

In some places, the public opinion on these matters is so strong as to be properly described only by the word *enthusiasm.* Throughout Europe and America, one cannot help recognising, both how widespread and how intense it is; and it ought also to be said that a similar feeling seems to be growing in England, and in other parts of the United Kingdom. There is, certainly, distinct evidence of an awakening to its importance.

This enthusiasm, as above indicated, seems very often to express itself in a practical form, viz., by prompting various corporations to erect schools, that as buildings will be monuments worthy of their cities, and at the same time institutions exemplifying the most modern ideas concerning educational equipment.

So firmly convinced are people in such places, that expenditure on education brings an inevitable return, that very often apparently nothing necessary to make the material organisation as perfectas possible, is spared. Between one city and another, natural rivalry seems to delight in expending itself on making their educational institutions excellent, a fortunate circumstance for the rising generations of those places.

5. *Absence of General Educational Organisation in New South Wales:*—Although as stated, all the types of schools mentioned in (*a*) and (*b*) with a single exception, exist in our State, there is no real homogeneity of organisation; nor is there any definite or even general State control, ensuring some kind of recognised relation between the various curricula. Consequently in the passage of a pupil from one school to another there is no definite scheme of mutual recognition. For example, the correspondence of relation of a particular "form" or "class" in two schools is quite indefinite. As between the different State-schools themselves there is of course less uncertainty about the matter.

On

On account of the absence of organisation, the entrance to superior or university education has to be under conditions fixed by the University itself, and determined by the University entrance-examinations. The advantages and disadvantages of this will not be here discussed. It will suffice to say, that *at present* there is no other course, which any responsible person, acquainted with the facts, could recommend.

6. *State and Private Schools.*—Some idea of the numerical importance of the "State" and "Private" schools may be had from the following educational statistics, compiled from the Statistical Register of 1901, published by the Government Statistician :—

SCHOOL STATISTICS.

Denomination.	No. of Schools.				Enrolment and Average Attendance.		
	M.	F.	M.F.	Total.	M.	F.	Totals.
Roman Catholic	38	23	275	341	18,731 14,817	22,755 18,160	41,486 32,977
Church of England	11	5	36	52	1,868 1,431	2,098 1,585	3,966 3,019
Other Denominations	3	1	5	9	665 603	619 544	1,284 1,147
Undenominational	35	31	421	487	5,344 4,301	8,202 6,693	13,546 10,994
Totals	87	65	737	889	26,608 21,155	33,674 26,982	60,282 48,137
State Schools	2	2	2,814	2,818	126,768 81,988	115,022 72,416	241,790 154,404

M. denotes male ; F. female ; M.F. mixed. All State Schools except the High Schools are classed as mixed, though the instruction of the sexes is separate. The upper figures denote enrolment, the lower average attendance.

The following shews the rate of progression of the two classes of schools for the last decade :—

AVERAGE ATTENDANCE IN THOUSANDS.

Year	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Private Schools	35·9	35·0	40·0	40·8	43·1	44·9	45·4	47·6	47·8	48·1
State Schools	167·0	156·4	174·2	182·8	187·4	191·8	185·2	196·4	201·9	201·9
Ratio (State to Private Schools)	4·65	4·47	4·35	4·48	4·35	4·27	4·08	4·13	4·22	4·20

It will be seen that the average attendance of the private schools is increasing at a more rapid rate than that of the "Public" or State schools.

SCHOOL STATISTICS.

TOTAL NUMBER OF PRIVATE AND PUBLIC SCHOOLS.

Year	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
Private	719	782	863	884	893	948	956	1,053	912	889
State	2,502	2,520	2,508	2,563	2,574	2,577	2,602	2,693	2,745	2,818
Ratio	3·48	3·22	2·90	2·90	2·87	2·72	2·72	2·56	3·01	3·17

Since 1889 it will be noticed there is a diminution of private but a steady increase of public schools.

These figures are sufficient to shew the preponderance of State schools over private. The State, however, has a very real interest in the well-being of all of them, and it should be its policy to ultimately bring about, without *friction*, thorough cordiality of relation ; and to promote in this way, a real homogeneity of the educational machinery of the territory.

To do so is really of great importance; but it is an undertaking which must be wisely handled, and followed as a consistent policy for many years, in a generous and liberal way.

In this connection it should be remembered that many of the Private Schools exist because, *rightly or wrongly*, some people believe the State system to be defective in several regards. The adverse view, of those opposed to it, may be summed up practically under three heads, viz. :—

(*a*) That the promiscuous association of all classes of children, without distinction or safeguards, is unwise.
(*b*) That the system is uncertain or variable in its teaching efficiency.
(*c*) That it is deficient in moral, or in religious influence, or in both.

It is not here implied either that there is, or is not, any valid reason for such contention.

7. *Different Classes of Schools.*—First of all in regard to the first reason, viz., (*a*) in the preceding section ; it may be said that in all large towns of the State, there is reason to believe that there are large numbers of people who are deterred from sending their children to ordinary "public schools," and these would readily pay a fair fee for special privileges, as for example, a more finely equipped or more select school, etc.

It

It may be said that the logical consequence of compulsory education is, of course, that it should be *free;* and in some of the Swiss cantons, and in some of the States of America, there *is* absolutely free education, even the school-material and text-books being supplied gratis. So also there are even free Universities. And in them there are no distinctions whatever. And if this community become truly democratic in spirit, and more uniformly developed as regards its conception of personal hygiene, then much of the reason for separation between the various classes of the community would vanish.

In considering the proposal to abolish school-fees, so as to do away with the necessity for inquiry into the poverty of pupils, it is well to bear in mind that there is apparently no cogent reason why people who desire for their children the privilege of attending a select school, should not be allowed to do so when they are ready to pay for it. That, of course, they do now, but they are compelled to send their children to private schools.

These questions must be dealt with in the light of existing facts, and are subject to our instincts and traditions as a British people. That *all the citizens of the State should have reasonable opportunity of being educated under the one system*, is obvious; especially when, behind the perfecting of that system, both in the teaching staff and material equipment, lies the whole power of the public purse. And if, without violating any important principle of public policy, the needs and wishes of all classes of the community can be equitably met, those needs ought to be satisfied by our administrative scheme.

There is no disguising the fact that, apart from the difficulty arising out of the promiscuity of association between differently circumstanced children in the community, general conceptions of personal hygiene differ somewhat widely, so much so, indeed, as to demand attention; and whether wisely or not many people seem to prefer a private school of indifferent organisation, to a "public school."

In impartially reviewing the matter, it is impossible to be oblivious of the fact that there is some ground for this hesitation, and it ought also to be noticed that hesitancy to use a public school always involves the purse of the objector—a sufficient testimony as to the seriousness of his objection. Further, it ought to be said that it behoves all persons to be extremely careful about the associations formed by their children; and *self-respecting people of the poorest classes feel this, quite as acutely as do any others.* The only persons who do *not* feel it are those whose traditions are indifferent, or who are more or less negligent in regard to the highest welfare of their children.

In view of the fact that at the present time the schools of the State are not absolutely free, and that there is always a possibility of the logical consequence of compulsory, *i.e., free* education being realised, it may be said that a change of the régime would be a fitting occasion to consider the wisdom of establishing two classes of schools, viz., *free schools*, and *schools in which a fee is charged.*

The consideration of (*b*) viz., the question of efficiency in teaching, and of (*c*) viz., the religious and moral influence in schools, may be postponed, as they will be discussed along with other cognate matters.

8. *The Nationalisation of Education.*—Just in proportion as the importance of nationalisation of an educational scheme is realised, so will it be seen that it is desirable to outline a policy that shall aim at finally including all educational institutions, not in a narrow but in a *liberal* control; a control such as will lead to homogeneity in regard to the plan of instruction, and the *thoroughness of teaching*, and yet which will admit of a sufficient degree of independence to promote real individuality and true development.

The first step will of course be to *put the State system in order*, and then to work for the more remote end, so as to produce a minimum of disturbance; and so as to disclose the fact that *homogeneity is consistent with individual development and with a reasonable degree of freedom.* This aspect of the question needs to be under review during the reading of the next few sections of this chapter.

What has been suggested, involves immediately, a consideration of the advantages and disadvantages of having different classes of schools, and of the means of harmonising all schools with the State scheme, as the most systematic development.

9. *Advantages and Disadvantages of different Classes of Schools.*—There appears to be only two ways in which a distinction can be made in actually establishing schools of different classes under our State system.

First of all, it may be said that for Primary schools two classes are sufficient. In determining the condition of pupilage in the two classes, the following courses are possible:—

(*a*) Both schools may be free[1]; promotion into the better being determined by merit (intelligence and good conduct).

(*b*) One school may be free[1]; pupilage in the other being dependent upon the payment of a suitable fee.

Both methods of dealing with the difficulty have their advantages and disadvantages. The most obvious are the following:—

The *advantages* of (*a*) are—

(i) That the principle of democratic equality is asserted without qualification, and the abler and better children are brought into closer contact.

(ii) That this association of the intelligent and meritorious tends to establish an aristocracy of mind and character, the effect of mere differences of position as regards wealth being reduced to a minimum.

(iii) That in this way it opposes, therefore, the tendency to the formation of a mere plutocracy, with its concomitant disadvantages for the community.

(iv) That this association tends to promote cordial sympathy and friendly relations, between those individuals from all classes of the community who are by nature endowed with nobility of character and intellectual ability.

(v) That such a régime tends to break down mere class distinctions of an unhealthy kind, and tends also to unify the better elements of the human race, while leaving the inferior in no worse position than under any other régime; or rather, be it said, in a better position, because the sympathy of all classes will tend to be increased. The

[1] Or subject to the present small weekly fee.

The only obvious *disadvantages* appear to be:—

(i) The association of children of different social circumstances, and differently circumstanced in respect of wealth, is not always pleasant for either.
(ii) The matter of personal hygiene may sometimes operate adversely.

This latter does not seem to be an insuperable difficulty, and probably could be easily overcome.

The *advantages* of (*b*) are:—

(i) Difficulties as to personal hygiene would in the main disappear.
(ii) Those willing to pay for the education of their children, something in addition to what they pay through taxes, are enabled to avail themselves of the State system of education in its best form.
(iii) In this way a larger proportion of the population will tend to inclusion under the educational system of the State, with the result of intensifying the nationalising of the State system.
(iv) Such inclusion will tend to abolish the inferior class of private school, which the other system does not, and in this way also promote nationalisation of our educational system.

The *disadvantages* of this system are:—

(i) It tends to produce a plane of cleavage in society depending merely upon wealth. This probably can never, however, be avoided, and is not necessarily a positive injury.
(ii) It fails somewhat to cement sympathy between talented children who are differently circumstanced only in respect of wealth. This in its degree is a real disadvantage, but one that can be corrected in the higher branches of education.

10. *Practical Policy, independent of the Settlement of the System of greatest advantage.*—In the present condition of the social organism there is no doubt that (*b*) is somewhat more practicable than (*a*), and there can be no reasonable objection to such a development, except that which depends upon a realisation of the advantages of breaking down social distinctions, depending merely upon differences of wealth.

The advantage of getting rid of all *inferior* private schools is very great, but that cannot be said of the *superior* private schools. And it has to be remembered in this connection that all such schools have been started, and are maintained, to meet a real public want, and to ruthlessly annihilate the vested interests would be recognised as an unwarrantable use of the public purse.

If, however, the educational policy of the State definitely covered a sufficiently long period, and was fully declared, the incidence of the change would be so lightened as to be of no moment, or, at the worst, it could be easily dealt with, and those who absolutely disregarded impending changes would be themselves responsible.

It may here be incidentally remarked that the fundamental outlines of an educational policy for the country, ought undoubtedly to look ahead for at least ten years, so as to get real unity of method and development; and if amendments are continually made, *i.e.*, from year to year, with *a prevision always of about ten years*, there will be a continual unfelt adjustment of the community to the changing educational conditions, and the necessities of progress could be most perfectly satisfied.

Two classes of free schools, with a condition demanding special ability and good character for entrance into the better-equipped, would doubtless cause considerable *emulation*, and in this way be a stimulus to the better and more ambitious children in all classes of the community; and there is some ground for believing that sympathies would grow up between different classes, tending ultimately to bring about a healthy form of democracy, in which mere class distinction and mere plutocracy would, at least, have but little meretricious weight.

All over the world it seems to be realised that a democracy can yield good results, only by making it possible to discover the ablest and best human units in all classes of society, and by fusing as far as possible their separate interests, to found a real *aristocracy of character and intellect that will be in touch with all classes without distinction*, and thus by its wise guidance help democracy to achieve its ideal aims.

If it be deemed that we are not yet ripe for such a development, it would be wise to establish the two classes of schools on the latter basis, viz. (*b*) that is, that one school, viz., the better-equipped, should charge a higher fee, or one should be free, and the other not free. Then at any time, when deemed desirable, the fees could be abolished, and the conditions of entrance be made that of conspicuous merit in respect of ability and conduct; that is to say, it could be instantly put on the other basis without disturbance in any way of the educational machinery.

In regard to the two classes of school, viz., the indicated "free public school," and the public school in which fees are to be paid, it may be said that they would be similar in character, but, perhaps, not quite identical with, the folk-school and pro-gymnasium of Germany, and would represent the type of schools in some States of America, where the *system* is unified, but there are two grades of schools.

The establishment of much better-equipped schools ought to take place slowly, so as not to seriously injure vested interests in private schools; and it goes without saying that the greatest possible care should be taken to inquire into all the circumstances, in this respect, surrounding the establishment of any particular school.

11. *The Question of Vested Interests in Education and of Subsidy.*—The State must inevitably face the issue, that *ultimately* it should, in the interests of the people, definitely control their national policy of education, and while it may not ruthlessly confiscate vested interests, it will never do to disregard the paramount interest of public welfare. By a far-sighted policy, it will be easy to achieve State control of education, without injury to private interest, but such a policy is a *sine qua non*.

In the public interest it is desirable, in this connection, to take into consideration *a future movement*, having for its object the securing on the part of all persons who desire to undertake public teaching, proper qualification for such office. When public opinion is thoroughly seized of the importance of education, this will be felt, as it is in many countries, to be not only natural and just, but the only tolerable scheme.

Reverting to the incidence of a State system upon vested interests, it may be said that there is also a possible alleviation of the whole difficulty through a wise system of subsidy. But the subsidising of schools carries with it an acceptance of the principle of the State's right of control in regard to curriculum

curriculum and efficiency, and could never be considered, except under such conditions. This would mean that the scheme of qualification of teachers would have to be thoroughly organised, so that in regard to the *instructional* part of the programme there would be identity with the State system.[1] Obviously this involves clear definition as to the efficiency of the training of teachers for subsidised schools.

It may be pointed out here that this system works well in Belgium, in which country however it ought to be stated that practically the entire population is Roman Catholic.

As soon as strong public enthusiasm arises in regard to the matter of education, and there is, as in many other countries, a strong desire to have finer schools, it would relieve the State of an enormous expense to allow religious bodies and municipalities to erect them, and *provided the State retain adequate control over the efficiency of the equipment, of the curriculum and of the teaching personnel*, there would be no very strong objections to moderate subsidy, and a better condition of things would be reached than now exists, in regard to thoroughness of our educational system.

The matter is so important in regard to the trend of the State relationship to private education, that it is desirable to set out the advantages and the disadvantages of the granting of subsidies.

12. *Advantages of subsidising schools.*—First of all in regard to the advantages of subsidised schools, the most important which suggest themselves are the following:—

(i) The unification of the educational system in all essential particulars.
(ii) The securing of efficiency in the entire teaching-staff of the State, or at least in all better-class schools for each section and class of the community.
(iii) The improvement of the material of teaching, both in respect of schools and furniture by giving full play to the emulation of private teaching bodies, and assisting them to achieve their ends.
(iv) The acquisition of a larger teaching-staff and larger equipment for education in the State, at a minimum of expense to the State itself.
(v) Improvements in educational method, resulting from a generous rivalry between different teaching bodies. (This indicates at once *why* the administration must be *liberal* in spirit.)
(vi) The creation of a wider public opinion on matters of education, and the unification of the various teaching-elements, which at present tend to separation.
(vii) Greater efficiency resulting from friendly co-operation between the different classes of the community, thus promoting general cordiality of relationship.

13. *Disadvantages of Subsidising Schools.*—The disadvantages of the subsidising of schools are more fancied than real, and the principle wherever applied seems to have worked excellently. They may be detailed as follows:—

(i) The State has not absolute educational control. (It ought, however, to be said that it would have a great deal more than under the present system, and further that it is not possible in an English community at present, and does not seem likely to be, to vest the State with absolute educational control. It is also very doubtful whether it would be wise to do so.)
(ii) Watchfulness against the abuse of the subsidy would have to be very great, until the system had been thoroughly developed. (This difficulty would tend to disappear as the educational system was unified and developed.)

14. *Principle of subsidy already exists.*—The practice of this State already recognises the principle of subsidising schools which have its approval, as for example in the case of the Grammar School, Hyde Park, Sydney; and the extension of the principle hereinafter can be made not only to alleviate the great work and over-centralisation of the State system, but also to afford opportunity for securing the best men for the highest offices.

The Sydney Grammar School, though receiving subsidy from the State, is not under the control of the Department of Public Instruction, but under that of trustees, and its principal is appointed under conditions determined by them. This is no public disadvantage, nor would it be in the case of a general extension of the principle of subsidy, when of course certain details are attended to, which will hereafter be referred to.

15. *Conditions of State Subsidy.*—The conditions of State subsidy are really very simple. The subsidy should depend upon an institution making approved arrangements as to:—

(i) An efficient teaching staff.
(ii) Satisfactory school buildings, furniture, and equipment.
(iii) Satisfactory arrangement in regard to curriculum, and its scheme of development.
(iv) And in regard to fees and financial policy.

In order to make clear what is meant, let a concrete case be taken as illustration. A town wants say a municipal school, or a religious body is willing to put up a good school. On a sufficiently guaranteed undertaking that it would employ only certified teachers; that it would submit its plans, its buildings, its furniture, and other teaching equipment to proper official approval; that it would follow a certain approved curriculum and general plan in its scheme of educational development; that its fees would not exceed a certain limit; and that in its financial policy it would limit its profit, if any, to a fixed percentage, undertaking to devote the balance to educational work; the State could agree either:—

(*a*) To grant a yearly endowment, or
(*b*) To grant an initial sum, or
(*c*) To grant both initial help and yearly endowment.

16. *Opposition to State control.*—The strength of all opposition to the State system will probably vanish when it is more fully realised that its administration is really aiming at;—

(*a*) A liberal interpretation of the function of the department.
(*b*) The acquisition of knowledge of the real needs and spirit of secondary schools.
(*c*) Acquiring a knowledge of the needs of superior education generally, and of the spirit of University teaching and technical training.
(*d*) Touch with all higher educational movement.
(*e*) The maintenance of liberal culture, address, and enthusiasm in the higher spirit of education.

To

[1] The disadvantage of sectarian feeling being maintained is referred to in Chapter XV, section 4 (*c*). One of the great advantages of having but one class of schools, is that the association of the children therein tends to diminish bigotry. For this reason it is felt by many people in France that the elementary school should be absolutely undenominational, and that ethics of a high character should replace any special denominational teaching.

To bring about a spirit of cordiality in the effort of all persons engaged in education, and a recognition of the common aim of all educational institutions, would be to greatly *advance the Cause of Education* in the State.

The State, as such, is more interested in the *Education of the People*, than in the schools of its Education Department merely. We must recollect that all schools *which do not exist for mere money-making* are properly the object of its care. (Even in regard to the others, they should perhaps in ten or fifteen years time be compelled to guarantee efficiency and hygiene).

17. *What can be accomplished through subsidy.*—It is important to bear in mind what can be accomplished through subsidy, looking out in a large way upon the whole question of State Education. Some of the details of advantage and disadvantage have already been set forth; but it is necessary to supplement these with a still larger consideration of the question.

Under sustained, generous, and able direction of the policy of the State Department of Education, keeping steadily in view the closer association of the various educational institutions, unity of effort will tend to develope, and with it that common recognition of the unity of aim of all educational institutions, without which it will be very difficult to achieve our ideals. And it may also be pointed out that *under an undeviating policy* there would finally be ready acquiescence to that degree of State control, under which alone subsidies could be granted. It is to be hoped also that, in the very near future, the public spirit of many a municipality will provoke it to provide a better school for its town or city, than could be provided by a State Department. It is not too much to hope that the generous rivalry in that respect among continental cities will be repeated in New South Wales, and let us hope throughout Australia. State subsidies to such institutions would stimulate their development, and at the same time not exhaust the public purse to an extent which would, perhaps, cause difficulty.

Independent action by each town would also constitute an important element in bringing about decentralisation, intensifying local independence and activity, and liberalising by its independence the whole community. It would in this way also tend to correct the supine habit of looking to the Government for every advance, and would constitute a focus for local civic effort.

It would too be a factor in habituating the citizens of New South Wales to take an interest in their educational institutions comparable to that characteristic of so many other countries. Would it not constitute also a very real help in bringing about that uprising of educational effort, without which the education of our community will never be comparable to that of the great people of America, or the peoples of advanced Europe?

18. *Development of Secondary Schools through Subsidy.*—There is a very real necessity for providing a greater number of secondary schools. We have certainly approached the time when greater opportunities should be given to the citizens of our State to acquire a fair secondary education. At the present time nearly all the secondary schools are in the hands of private individuals. These must necessarily charge somewhat large fees; for although, greatly to their credit, it may be said that, in many cases they are *not* merely institutions for profit, they are obviously more or less affected by commercial considerations, which their undoubted zeal in educational matters cannot completely overcome.

Reverting to a previous section, it may be again said that moderate subsidies would probably lead to the establishment of many such schools under satisfactory conditions, at an early date. On the other hand, if left till the State undertake their erection and equipment in the ordinary way, long intervals will transpire before secondary education in the State is on a satisfactory basis.

The whole question of subsidy needs to be reviewed in a *far more generous light than in the past, and with a wider outlook upon our educational future.* Should it be decided to promote some control over private education in this State a scheme could be readily outlined for securing the State against improper exploitation and against supporting inefficient teaching bodies.

19. *Unification of all important Educational Establishments.*—A liberal scheme of unifying all education is an aim toward which the State Educational policy should be directed. It cannot be brought about at once, nor is it desirable that it should, but by wise direction of that policy, the sympathy and goodwill of the important educational bodies, or institutions within the State, will be won; then the rest is easy. For it is evident that the time must fast approach when the impulse to unify all education in the State will arise, and cordial feeling and the bond of a common aim, viz., the education of the citizens of our State, will help to harmonise discordant elements.

In the past some degree of antagonism has unfortunately developed between the State and other educational organisations; *any such antagonism is of course opposed to the public interest.*[1]

Throughout it has to be remembered that since *Education is the upbuilding of our people*, and their welfare is a matter of uniform concern for the State, all educational institutions should be within the sphere of its liberal influence and care, not certainly in the way of overpowering control, but of watchful and kindly regard. In short, there should be such an attitude as will make that co-operation possible, through which alone the best results can be attained, and opportunity afforded for all classes of the community to secure for their children the possibility of that progress for which their natural endowments have fitted them.

That is the ideal relationship to which any Department of *Public* Instruction, rightly so called, must aspire. Such a department specialises its interest in no class; but the *Education of the People* on every plane is its regard. The primary system initially commands its attention, merely because it is the basis upon which all that follows is built; and though its regard must be more intense in respect of the schools under its direct control, it is interested in all others, for they also all make for the development of the people.

For this reason its administration must take accurate account of and thoroughly understand all planes of education, and the direction of primary education must take systematic cognisance of the final issues in technical, secondary, and higher (university) education.

An administration, controlling primary education in the interest of every possible phase of the people's development, qualified to understand the higher planes, will be able to wisely direct the lower which lead thereto. It is this higher experience that gives that sufficient horizon, to appreciate the people's real needs; and not only so, but its liberalising influence is indispensable in promoting that sympathy of relation between all educational organisations through which liberal unification—not coercive control—may be achieved.

CHAPTER LVI.

[1] Much of this antagonism has doubtedly arisen because of the defective character of the education offered by the "public schools," and must necessarily disappear under a better system.

CHAPTER LVI.

General Criticism of Courses of Study and Standards of Instruction of the Primary Schools of New South Wales.

[J. W. TURNER.]

Introduction.—It is perhaps unnecessary to say that this criticism is a candid effort to indicate the good and bad points in the administration, teaching methods and practices, and curriculum of the Public School System of New South Wales, and is the result of a careful investigation of the different Primary School Systems of other countries.

At the outset, it may be said that our Primary Schools and our Primary Elementary System will take a worthy position when placed side by side with the schools and systems of other countries; and our head teachers, mistresses, and assistant teachers, are as intelligent and earnest as will be found elsewhere. There are, however, some defects in our system, chiefly in the upper primary schools, or, as they are called, Superior Schools. In the matter of managing schools, of imparting knowledge, and disciplining classes, the teachers of New South Wales are quite as efficient as those of other countries; but, as a class, they lack the thorough training given in the Normal Schools of France, Switzerland and Germany, and fall short of the higher ideals of teaching common in those countries. The Commissioner thinks that, with an improved training system, which should be introduced without delay, and the substitution of inspection for examination, which will allow Inspectors opportunities for suggesting good teaching methods, the educational status generally of New South Wales teachers will be raised considerably.

Primary School Courses.—The schools of the State may be classified in two divisions—(*a*) those with one department, and (*b*) those with more than one department. In division (*a*) the infants are known as pupils of the first class; in (*b*) the infants always form a separate department.

The instruction given to infants in a first-class under division (*a*) is divided into three half-yearly courses. There seems no good reason why there should not be four half-yearly courses in the first classes of schools under division (*a*) as there are in the infant schools of division (*b*). The two Standards of Proficiency are almost identical, and the pupils in division (*a*) are expected to reach, in their three half-years of instruction the same standard of work as those in division (*b*) with four half-years of instruction. Some adjustment is necessary in these courses.

A child starting school between the ages of 5 and 6, and attending regularly, is able to complete the Infant School Standard by the time he attains the age of 7 or 8. In our large Infant Schools, an advanced class, called a fifth class, is formed to prepare pupils for promotion to the second class of the Primary Departments.

The pupil passes into the Primary Department about the age of 7 or 8, and, in accordance with the compulsory clauses, attends school till he reaches the age of 14. During the six years that he spends in the Primary Department he has the opportunity of passing through four classes, known as second, third, fourth and fifth. If the pupil is promoted on the annual examination he will reach the fifth class about the age of 12 or 13. Promotions may be made on the pupil's progress in a half-year, or for less periods at the discretion of the head teacher. In these cases the pupil may reach the fifth class earlier than the time mentioned. The question of age is only referred to in this connection to indicate the necessity for a different arrangement of the classes. A pupil's fitness for a class, it is well known, is not in our schools, determined by his age, but by his attainments. Each class, except the third, has two half-yearly courses. The third class has four half-yearly courses. The time devoted to teaching is forty-four weeks each year, almost equally divided between the half-yearly courses.

The Commissioner is of opinion that the classes of the Primary School, and consequently the standards, should be remodelled, and should be made to coincide with a six years' course, divided into half-years of work, commencing at the age of 8 and ending on the completion of the pupil's 13th year. The classes should be named according to the years in the course, and when the pupil has completed the fifth class work by the scheme suggested, he should be considered eligible for promotion to a Superior School.

The Primary School course in America starts at the age of 6 and ends with the Grammar School about the age of 14. The length of the course, either 8 or 9 years, is giving rise to discussion among educationists in that country. The time spent in the Grammar School, some argue, should be shortened in the interest of intelligent, healthy pupils, and opportunities for earlier admission into the High Schools provided. Thos. M. Balliet, Esq., Superintendent, Springfield, Massachusetts, at the Conference of the National Educational Association of America, held in Boston last July, suggested a plan for saving time below the High School. Several devices he pointed out, had been proposed to accomplish this, and among those most widely adopted he mentioned the half-yearly and individual promotion systems, and the system known as the "CambridgePlan" which provides three courses below the High School—a nine years' course, an eight years' course, and a seven years' course, for pupils of various degrees of talent.

Mr. Balliet's particular views on the question are as follows:—

"I wish, however, to suggest what seems to me a better plan for general adoption than any of them, namely the establishment in cities of special Grammar Schools, with shortened courses, for pupils who are both gifted and healthy and are to fit for College. There ought to be in every city at least as many such

Grammar Schools as there are High Schools. They should not be ward schools, but be independent of ward lines. The requirements in the 'common branches,' except in English, should be reduced, and modern languages be introduced the 5th and 6th year of school, and algebra the 7th year. Such pupils could complete two years of French or German, one year of algebra, and possibly one year of Latin in these Grammar Schools, and enter the High School at the age of 13, and College at 17.

"Such special schools would not be undemocratic, because rich and poor alike would be admitted if properly qualified. Those who cannot decide the question of going to College until the end of the regular Grammar School course would be exactly as well off as they are now. It would be financially economical to establish such schools where more school facilities are needed, as each one would relieve a whole group of regular Grammar Schools which happen to be overcrowded. The plan is, therefore, financially as well as educationally practicable."

Standards of Instruction.—Our Standards of Instruction, to be brought into line with the best noted in other systems, require some remodelling.

Kindergarten.—Starting with the youngest classes, it will be necessary to make instruction in Kindergarten principles *general* in all Infant Schools and in all first classes of Primary Schools in which an assistant teacher is employed. Kindergarten exercises are in the Standard of Proficiency for Infant Schools, but the actual teaching is seen in very few schools. It is not intended that pupils in Infant Schools should spend all their time with Kindergarten gifts, games, and occupations. The modified form of teaching, as explained in the chapter on Kindergarten, is recommended. This teaching was seen in the Infant Schools at Fort-street, Riley-street, and Waverley, and what is suggested now is that the system be extended to all Infant Schools, and first classes of Primary Schools with an assistant teacher. The buildings at Riley-street are admirably constructed for Kindergarten work, with the exception of the galleries, and the teaching equipment is very superior. Galleries and fixed seats are not proper furniture in an Infant School where much space is required for games and plays in the daily programme. At the very least one large room should be set apart for movements, and the necessary furniture should be light, inexpensive, and easily moved. An indispensable requisite of all Infant Schools for the satisfactory teaching of Kindergarten is the garden or playground.

An initial difficulty in making Kindergarten teaching more general will be found in the want of experience on the part of our infant mistresses to deal with the practical part of the work. Already steps have been taken by some of our lady teachers to overcome this difficulty, and, acting on the advice of their Inspectors, they are adopting the best means at present available to qualify for the work, viz.: occasionally attending one of the schools where Kindergarten principles are taught. A suggestion has come from the lady teachers in question, which, as forming a temporary scheme, is worthy of every consideration. Their suggestion is (*a*) that a Kindergarten class for infant mistresses, not more than thirty in number, be established by the Department of Public Instruction in a suitable room fitted with Kindergarten appliances, (*b*) that the mistress of the Kindergarten at Fort-street be asked to conduct the class, and (*c*) that two hours a week be devoted to the theory of the subject, and one hour a week during the course—extending over six months—to practice in one of the Kindergarten schools in the city. This scheme, while serving to show the true teaching spirit of our infant mistresses, can only be regarded as a temporary arrangement for dealing with the subject, for the importance of the instruction necessitates the establishment of a thoroughly equipped Kindergarten College, so that the State may have the basis of its educational system secure.

At present the female students of Hurlstone Training School receive one lesson in the week on the theory of Kindergarten, but no practice in teaching it. It is recommended that, until the establishment of a Kindergarten College, one of the teaching rooms of the Practising School, Hurlstone, be set apart for Kindergarten purposes, and that more time be devoted to the training of the students in the theory and practice of Kindergarten. The excellent grounds of Hurlstone provide all that is necessary for outdoor instruction in teaching the subject.

Lower Classes, Primary Schools:—Manual Training.—The Manual Training given in the lower part of our Primary Schools is not sufficient. In our second and lower third classes, about the ages from 8 to 10, there is little provision for boys, outside drawing, for any training of the hand and eye. There should be a course of cardboard modelling (this form of work gets general preference) following on the simpler work of the hand-and-eye training of the Kindergarten. A few of our boys of the age mentioned above receive training in our school workshops, but many go through the classes with no manual training other than what is obtained from drawing. The Commissioner was much impressed with the scheme of manual instruction adopted by the Superintendents of Manual Training in the large towns of Canada, and would strongly urge the necessity for introducing more hand-and-eye training into the lower classes of our Primary Schools.

Superior Schools.—Our Superior Schools, which are the Upper Primary and Higher Grade Schools of other countries, have perhaps the greatest defects. The instruction in our upper classes for boys 12 years of age and upwards is directed altogether too much in one channel, and the best efforts of our teachers are spent in preparing lads for the public service, for clerkships in offices, and for positions as office boys. Specialisation is permitted in the case of schools where the pupils have been six months in a fifth class, but the practice is not so valuable as it ought to be, because little provision has been made for the teaching of special subjects, or directing pupils along different lines of study.

Commerce.—A lad wishing to study for a commercial life can generally get all the instruction necessary in such subjects as mathematics, history, and geography, and in some schools a foreign language, from his regular teacher; but the technical and special subjects of the course, as for example shorthand, book-keeping, typewriting, &c., are *outside* the daily school course, and are not recognised in the daily curriculum. The teacher wishing to prepare his boys in the best possible way for business pursuits negotiates with a teacher of these special subjects, who is not connected with the Department of Public Instruction, except that he is employed as a teacher of Technical Classes, to give instruction at his school

school, either in the dinner hour or after 4 o'clock. The Commissioner considers that teachers who are specialising in the direction of commercial work are to be commended. He is of opinion that the special teachers employed are capable men and women, otherwise they would not be engaged by principals of schools. His objection to the practice is that the special work is excluded from the regular daily curriculum of the school, and forced into a part of the day that should be devoted to recreation. If a teacher in our Superior Schools chooses to specialise in the direction of commerce he should be allowed to do so, and he should be granted every facility for teaching *all the necessary subjects within the ordinary teaching hours*. Our present method of teaching commerce stands in need of alteration in two particulars—(*a*) as to its place in the daily programme, and (*b*) as to the status of the special teaching staff. In connection with (*b*), the persons employed should be under the direct control of the Department of Public Instruction.

Science.—The Standards of Proficiency in use at present in the different classes of Primary and Superior Schools provide for lessons on animals and plants, with special reference to agriculture; on the human frame and laws of health; on elementary physiology; on the chemical and physical principles involved in agriculture; on light, heat, and air in relation to health; on elementary physical science; on botany, chemistry, electricity, physiography. This is the science programme from third-class to fifth-class inclusive, and it will at once be admitted that it is very comprehensive. The defect in the scheme, however, lies in the fact that no State School has a laboratory for the teaching of elementary science. It is known that many of our teachers make their own simple experiments and construct their own apparatus for the demonstration of their lessons; but such an arrangement, good though it be, is not to be compared to that provided by a science equipment. The provision for the teaching of elementary science in the Higher Grade Schools of Birmingham, Manchester, Leeds, Glasgow and Edinburgh, and in the Upper Primary Schools of France, is admirable.

Manual Instruction in the Higher Classes.—In the upper classes of our schools, pupils from 11 to 15 years of age, some Manual Instruction for boys has been provided. Workshops for wood have been established in a few schools, and some Public School classes attend the workshops of Technical Colleges; but, while unable to quote the exact numbers in attendance at both classes, it is known that only a small percentage of the advanced pupils is enrolled. Two causes militate against a large enrolment: first the expense of tools, which has to be borne by parents; and second, the limited number of workshops. To obtain the greatest results in Manual Instruction, the tools necessary for the training of the lads should be supplied by the State, and increased facilities for attendance provided. The instructors are capable men, but they would be better qualified for the different branches of Manual Instruction if they had the experience of English or Continental Training Schools.

Work in iron should be included in Manual Training for boys, and centres should be established in industrial districts. The schools in London and other large towns, which are provided with shops for working in iron, are well attended.

Cookery for girls, which has formed part of the school curriculum for the last fourteen years, has developed to a large extent, and the success attending the establishment of cookery centres has been very marked. The training is so valuable and so educative that the question of further development should be considered, and in connection therewith other features of Domestic Economy—such as house-keeping and laundry-work—might be introduced. Classes for house-keeping are very common in the girls' schools of England, Holland, and Denmark.

Drawing.—Our schools fall short of the ideals reached by many of the primary schools in other countries. The facilities given for the teaching of drawing in other places are great, and the subject is one of the finest features in the programmes of the Higher Grade Schools of Great Britain. The course of studies in the subject, as prepared by the Superintendents of Drawing, is definite and graded for each class, and for each branch of the work (see Chapter XX). Teachers specially trained in the Art Schools of England are placed in charge of centres, or travel from school to school, taking the higher classes themselves, and giving hints on the subject to the regular teachers of the lower classes.

The Commissioner is of opinion that the drawing in our schools requires remodelling throughout all the classes. To effect this change he recommends that an Art Master from one of the great English school centres, with the latest experience of art work in Primary Schools, and with the ability to teach and discipline, should be at once introduced, and that he should be given full power in organising the work on modern lines.

Agriculture.—Whatever the character of the instruction given in our schools may be, the fact remains that many of the children of our State must earn their living on the land. This being the case, the question arises, to what extent should agriculture and kindred subjects be taught in the schools? Great prominence is given to this kind of instruction in the schools of Belgium, France, and Holland. The Commissioner does not support the view that a boy should be satisfied to hold the position in life that his father held. He is of opinion that the best education, and the best position in the world, should be open to every boy. At the same time, he contends that, by reason of their environment, many of our boys and girls will remain on the soil. These, he thinks, should have an opportunity of becoming intelligent farmers, and a bent should be given towards the teaching of agriculture.

The admirable practical instruction given in the Upper Primary Schools of France is giving the best results. The instruction it will be noted is educative while practical. It is not an apprenticeship as a farmer, but it is a good scientific preparation for agricultural apprenticeship. The schools aim at nothing further. The French farmer prefers to teach his son the practice of his calling.

Regular Class Subjects—Reading.—The Commissioner heard reading in every English-speaking community, and he has no hesitation in saying that the reading in the schools of New South Wales is equal to that of any other country. He attended lectures in England where specialists are engaged by the School Boards to explain their methods of teaching reading. One of these methods, that by Miss N. Dale, was investigated. Briefly stated, this lady, in her preliminary lessons, leads the child by familiar chats to discover

sounds

sounds for itself, and afterwards to classify the sounds. Later on the child is helped to find the sign (printed on tablets) which represents the sound, and then to combine the sounds to form words. The child having built up the word in a frame by means of the tablets is required to print the letters on a slate or on the board, and finally to draw a picture from imagination of some incident emphasised in the chats, and connected with an important word in the lesson. Later on primers and readers are introduced. Miss Dale claims for her method that children learn to read quickly by it. She pays particular attention to enunciation. Mrs. Walker, of Fleet-road Infant School, has an admirable method of teaching the alphabet by means of picture charts. A combination of the Phonetic and Look-and-Say methods is generally adopted by all Infant School teachers in teaching the subject, and the lessons are made interesting and attractive by the free use of pictorial representations and chalk sketches.

The teaching of English in the Secondary Schools of Holland is very thorough. The reading lessons in English, conducted by Dutch teachers, give evidence of the great care that is bestowed on enunciation by those giving the instruction, and reveal the wonderful aptitude of the Dutch boy for acquiring the language. In the Secondary Schools of Hungary, English teachers are engaged to teach English.

The great care taken to obtain a clear enunication and correct articulation by teachers in the United Kingdom and America, as well as in foreign countries, suggests to our teachers the necessity for continual vigilance on their part, in order that the purity of the language may be preserved.

The practice of public speaking in the schools is a wise one. The Commissioner knows that the practice is general in the senior classes of several of our large public schools during the ordinary reading lessons, and that debating societies exist in a few schools. The movement is deserving of encouragement. The simultaneous repetition of words, which often degenerates into a sing-song, and which is sometimes heard in our schools, is a bad feature in the reading lesson.

The amount of school reading matter obtained by our pupils is very limited. One set of readers used in schools all the year round does not give a reading boy sufficient opportunities for extending his vocabulary. The teachers under the London School Board can make a selection from the following series of school readers :—

Russell's Citizen Reader.
Laws of Everyday Life.
Golden Rule.
Palmerston Reader.
The Ideal Reader.
Collins' Reader.
Cassell's Reader.
Nelson's Reader.
Waverley and Crown.

All these readers were seen in use in the London Schools.

The Commissioner recommends that complete sets of these and other readers used in the United Kingdom, the United States, and Canada, be obtained, and that the best be selected, revised (to suit Australian conditions), and added to the teachers' requisition list with a view to their use in the public schools of New South Wales.

Writing.—The writing generally, in all countries visited, is taught by means of headlines, and teachers have no difficulty in selecting good copy-books. The copy-books most generally in use in England are the Philip's series, which have a slight slope like that in the Collins' Graphic Copy-book, and the Australian Copy-book published by Angus and Robertson. In most of the Continental schools the slope given to the writing is very great; in England, Ireland, Scotland, Canada, and some of the United States, the slope is generally very slight; and in one of the United States upright writing is much favoured. There is a good deal of difference of opinion among teachers, and more, perhaps, among School Committees, as to the amount of slope that should be given to writing in public schools. While some of the merchants of a city in Canada distinctly refuse to employ lads who have learnt the upright style, the School Committee of a city in the States gives a general instruction to its teachers that vertical writing is to be used in all school-work, and prescribes the book to be used.

The hand-writing which meets with the greatest approval from the business men of Sydney, in the Commissioner's experience, is that with a slight slope, and very satisfactory results are obtained from the series mentioned above.

Writing on paper with pen or lead pencil is early introduced into the schools of France, even in the highest classes in the infant schools. Several of our State schools have abolished slates entirely in the primary departments and substituted paper. The departure is to be commended if only on hygienic grounds.

Arithmetic—In our Standard of Proficiency notation to hundreds of millions in the second class is too difficult, and the requirements for the arithmetic of third class are not definitely stated. "Miscellaneous exercises in simple and compound rules" might involve some knotty problems for pupils in third class. In fourth class the work in vulgar fractions should be practical. Long operations in complex fractions are not required even as mechanical tests. Decimal fractions should be of the terminating order. Simple operations in vulgar fractions and in decimal fractions might well be introduced into the curriculum earlier than the fourth class. Recurring decimals should be taught in the advanced classes of the Superior School. It is feared that mental arithmetic is not receiving the attention in our schools that its importance demands, for too frequently we find that our boys are inaccurate in the ordinary processes. Every lesson in arithmetic should be preceded by a few minutes' mental work, and the questions set in the arithmetic lesson should be largely practical. Preparation for examination work has sometimes forced it into a mechanical channel.

The Board of Education for California (see Chapter XIII), gives some good suggestions to its teachers on the teaching of arithmetic, which are worthy of being considered by our own teachers.

The immense advantage of the Metric System over the system of weights and measures is acknowledged by those who have witnessed the work done under each. While America has decimalised her money system, she retains the old-fashioned method of dealing with weights and measures. The United Kingdom still clings to the old processes in all commercial transactions—money, weights and measures—and Australia, though possessing many modern ideas, seems reluctant to break away from English practices.

A large amount of the work in arithmetic in the Board Schools of England is concrete in character, and has a direct bearing on the practical everyday requirements of business life.

The New South Wales public schools which are represented from year to year at the University Junior and Senior Examinations of the Sydney University show some good results in the subject of arithmetic. The medal in Arithmetic at the University Senior, 1902, was gained by a public school boy.

Geography.—

Geography.—Programmes of work in commercial geography seen in actual operation this quarter in some of our Sydney public schools show that the subject is treated intelligently. Parrot-like repetition of lists of names of places forms no part of later-day teaching in our schools. The subject is taught with interest, and the teacher with modern ideas gets away from the environment of four walls, into the playground or the adjacent country, to make the best use of Nature for his illustrations and descriptions. Where practicable, outdoor teaching of the subject is to be commended.

In some countries schools are supplied with splendidly illustrated geographical readers. Two series are specially adapted for the use of children—the Canadian Geographical Reader, published by Gage & Co., Toronto, and an Australian Geographical Reader issued by Collins Bros. & Co., of Glasgow. In both publications the illustrations and descriptive matter are of great teaching value. The Photochrome Co., Limited, London, publishes a fine series of pictures suitable for illustrating the lessons in Geography. The firm of Delagrave in Paris supplies many fine maps and diagrams which are seen in the schools throughout the Continent. The Swiss teacher makes great use of models in teaching the geography of his country. Arnold and Son, Leeds, England, and the Chicago Educational Company are supplying splendid relief maps. Some of these maps, as well as photographs of towns and scenery, are already in use in our State Schools.

Grammar.—Our New South Wales Standards of Proficiency set too much value on parsing and analysis, and teachers are inclined to spend too much of their time in preparing these subjects for the annual examination. The best schools in all countries are giving more attention to composition on paper and correct expression in conversation. The tests for spelling in our standards are unnecessarily long.

Singing.—The tonic sol-fa method is very general in the schools of the United Kingdom, and pupils show great proficiency in singing from this notation. In no country where the singing was heard are the results in reading at sight from staff notation equal to those of our own children. Great care is given to voice production in the schools of Ireland, England, Holland, and America, and the singing in many of these schools is characterised by softness and sweetness.

History.—Historical readers are much used in England, and the amount of oral teaching is small. The Standard of Proficiency in New South Wales schools provides for the general teaching of English History in third and fourth classes by means of simple connected stories or biographies, from the Roman Conquest to the present time, given orally; and in the fifth class, from William III. to the present time, by more detailed descriptions, such as may be found in any ordinary text-book. Teachers who follow the course prescribed for the University Junior Examination teach the general outlines of English History from the year 1485 to the present time, and the special period specified. The subject is generally well taught in our public schools.

In two at least of our Superior Public Schools the History of Europe and Ancient History are included in the regular course of study for fifth classes. The medallist in English History at the 1903 University Junior Examination is a public school boy. Australian History is not introduced into the Standard of Proficiency before the fourth half-year of third class. The subject might very well be started earlier, and taught by means of simple connected stories. There is good reason for saying that many of our pupils leave school with but a limited knowledge of the history of their own country.

Object Lessons.—Object Lessons in the middle and lower classes of our schools should be closely associated with Nature study, and in the upper classes with elementary science. The students in our training schools have for years past connected their object-lesson teaching with Nature study, and many of our schools in the city and country are provided with cabinets of Natural History for teaching object lessons. In the matter of visits and in the collection of information and concrete illustrations our teachers and pupils have been most generously treated by the Directors of the Hawkesbury College, the Technical College, and the Botanic Gardens. In addition to visiting such public institutions the pupils of our schools under the guidance of their teachers frequently make excursions to particular places in the country for special instruction in certain subjects. The practice of outdoor teaching through such excursions is a good one, but it has its limitations. It is practicable in a school where there is a teacher to every class. It is not so easy of accomplishment in schools where teachers are in charge of two classes, or in schools with only one teacher. The teacher has always to bear in mind that the greater part of his daily work lies inside his school.

The excellent charts and models which are seen in the schools of France and Germany are most useful adjuncts in teaching this subject. Pictures, especially good ones, have a wonderful attraction for children. Our native flora and fauna have not yet received much attention from the artist. A splendid diagram representing the snakes of Australia has been supplied to our schools, but the diagram of Australian animals, though equally worthy of a place on the school walls, has not yet been introduced. Cayley's charming pictures of Australian birds should be in all our public schools.

To further the systematic teaching of Nature study and elementary science, the Commissioner recommends that a bonus to cover expenses be granted to any public school teacher, and extended leave at Summer or Winter vacation if necessary, who would voluntarily spend the time in a Technical College or other institution for the purpose of qualifying himself to give instruction in these subjects. It is believed that with this encouragement many country teachers especially would gladly avail themselves of such a course of study. The benefit to the pupils would be great. The teachers could specialise according to the industries of their district—mining, pastoral, or agricultural. With the establishment of science laboratories in the Superior Schools, and in the District Model Schools as proposed, this temporary provision would be terminated.

Moral Lessons.—The necessity for moral training in the school curriculum is universally admitted, but opinions vary as to what is the best form of giving the instruction. Some teachers give special lessons on moral subjects, others let the moral teaching permeate the daily instruction, and point a moral as opportunity offers.

The moral code hangs in a conspicuous place on the walls of the schools of the United Kingdom and the Continent. France considers the teaching of morality of so much importance that one hour daily is devoted to it in the Upper Primary Schools, and the instruction is entrusted solely to the head-master.

In the schools of Holland moral truths are inculcated in part by means of mottoes printed in large letters over the entrance to the class rooms. Some of these mottoes are "Gentleness and tolerance are two sublime virtues." "Have the courage to be true and you will be great and good." Over the entrance to the sewing-room in one of the Dutch upper primary Industrial Schools, the following motto may be seen, "Vanity is the rock on which many a one slips."

The teaching of morals, as occasion arises in the daily routine, is the plan adopted generally by our own teachers. Whatever the methods adopted, whether in the form of set lessons or by means of incidental conversations, the value of the moral instruction and its effect upon the pupils depend on the man or woman in charge of the class. Our teachers, it is believed, are alive to the great responsibilities connected with the moral training of the youth of our State.

Drill.—The military system of dismissal is not seen outside New South Wales schools. With us the function is carried out with great precision, and the sight presented by one of our great city schools when it pours forth its hundreds of well-drilled, orderly pupils, on the completion of the day's work, is indeed a pleasing picture. In other countries the usual practice in dismissal is very different to that adopted by us. The pupils on the close of lessons for the day leave their desks for the hat lobbies and pass out of the school into the street without any formation of ranks, and without supervision. In but very few schools does the dismissal approach our own practice.

The perfection of our system of Drill is witnessed at the interesting events which annually form part of the grand displays of physical training held under the auspices of the Public Schools Amateur Athletic Association. These splendid exhibitions of physical training organised by our various School Associations, and loyally supported by our teachers, are unequalled in any part of the world. The physique of our boys and girls will compare favourably with the best seen in schools of other countries.

America and Sweden are giving great attention to the physical training of their girls in the primary schools. Both countries have special rooms for gymnastic exercises, which are taught by trained instructors, and both encourage free movements in the open air in addition to indoor practices. The American girl obtains a vigorous training in basket ball, hockey, and lawn tennis under the direction of her teacher; the Swedish girl gets grace of movement by joining in dances and games conducted by her mistress.

The calisthenic exercises set down for our own schools and carried out in the open air are producing a very fine physique in our girls; but except lawn tennis our girls' schools have little in the way of well-organised outdoor games.

"Fire Drill" is practised regularly in the large city schools of America. Cadet corps are not a great success in any country. The expense to parents of the uniform is the main obstacle. In Switzerland target practice is provided for the senior boys of the schools.

Every boy in our fourth and fifth classes should be trained to the use of arms. Drill rifles should not be used in these classes. The same classes of boys should have rifle practice regularly, and attendance in uniform should not be compulsory. The aim of our Cadet authorities should be to turn out many good marksmen. Conscription may yet become necessary in Australia, and a body of men trained to the use of the rifle would prove a valuable defence in case of attack by a foreign power.

Needlework.—This branch of Domestic Economy in our schools is well taught, and compares favourably with what is done elsewhere. The movement in British Schools is in the direction of practicality and the girl is taught to cut out garments. In many schools, rooms are specially fitted up for teaching the subject.

Geometry.—Euclid should be taken out of fourth class standard and placed in the Superior School Courses. Practical Geometry should be correlated to modelling in cardboard, drawing, and manual training.

Certain regulations which have recently been made on the recommendation of the Board for conducting the Public Examinations at the Sydney University, Junior and Senior, will necessitate some changes in the teaching of Euclid in our public schools. In the Junior Examination, 1905, candidates will have the choice of one of two papers in geometry. In one paper the examination will be on the first three Books of Euclid, and easy questions upon their subject-matter. This examination, as our teachers will readily see, is no departure from former lines. In the other paper the examination will be based upon a study of courses corresponding to those in use in the Universities of the United Kingdom in which the changes that have been recommended in the teaching of geometry have been adopted.

In the Commissioner's opinion both public school teachers and boys will welcome the new movement in the teaching of geometry.

In connection with the new development in teaching the subject, teachers are advised to read the report of the Committee of the British Association on the teaching of elementary mathematics; the report of the Committee of the Mathematical Association; and the regulations for the Oxford and Cambridge Local Examinations.

Algebra.—The subject is intelligently taught in our schools. The medal in Algebra, in the 1903 University Junior Examination, was taken by a public school boy.

Latin.—The usual school course is Abbott's "Via Latina" to page 53, with the first conjugation and the verb "sum," and in some schools the Latin author of the Junior Examination is added. In the 1903 Junior Examination a public school boy gained the *prox. acc.* in the subject, and eight boys from the same school passed in the First Class.

Scripture Lessons.—The scripture books of the Irish National Series are systematically read in the State schools of New South Wales. The teachers explain the subject-matter of the lessons without any reference to dogmas. The Commissioner in a long experience of the use of these books in our State schools knows of no instance where the teacher has intruded his own religious opinions during the scriptural instruction or at any other time. The conscience clause is always respected by teachers.

Suggested

Suggested Improvements.—The Commissioner considers that our system of public instruction is capable of improvement in the following ways:—

(1.) By extending Kindergarten Teaching.

(2.) By introducing Manual Training in the lower classes of the primary schools.

(3.) By establishing Superior Schools for purposes of specialisation. Such schools should provide for classes, not necessarily in all subjects, in—

(*a*) General Education.
(*b*) Commerce.
(*c*) Science.
(*d*) Art.
(*e*) Manual Instruction.
(*f*) Agriculture.

In carrying out any alteration in connection with these suggestions the present buildings could be largely utilised. Some changes in the furniture of Infant Schools would be necessary, but not in the direction of increased expenditure. The Manual Training in the lower classes could be carried on in the ordinary class-rooms, but the Superior Schools, with classes for specialisation, would require additional rooms and proper equipment. Admission, as a rule, should not be earlier than 13 years of age, the conditions of entrance should be a pass in fifth-class work (new classification), or the merit certificate as at Bruntsfield, Edinburgh; and the course should be for three years. A scheme of scholarships, especially for children in the country, should be considered carefully. The French scheme is a good one. The head-masters of Superior Schools should receive special salaries. The General Education section should include Latin, and should form the connecting link between the Primary and Secondary Schools. The Superior Schools doing specialised work should form the connecting link between the Primary School and the Secondary Technical and Commercial Colleges.

The scheme of specialised work could only be introduced into schools gradually. While many of the subjects in the various sections could be undertaken by the regular teachers of the State, specialists would be required, at the commencement at any rate, for the teaching of languages, book-keeping, shorthand, typewriting, physics, chemistry, drawing, agriculture. There are persons outside the service of the Department, who are competent and willing to teach these subjects. These would need to be certified as special teachers under the Department of Public Instruction and should be appointed to the charge of groups of schools as in England; indeed, the peripatetic science and drawing teachers might very well be employed both in the city and the country at the inception of the scheme. When the Training Schools are established, in accordance with the courses suggested in the chapter on Training School Systems, students will be well qualified for much of the work of the Superior Schools.

CHAPTER LVII.

CHAPTER LVII.

The Drift of Modern Primary Education.

[G. H. KNIBBS.]

1. *Introduction.*—Great as is the superiority of education in almost any part of Europe or America as compared with that in this State, not only in the matter of curriculum, training of teachers, and school-hygiene, but also in that of appreciation of the meaning of education for a people, the necessity for continued progress, though less imperative than with us, is yet vividly more appreciated. An illustration of this is the fact that in July this year, 35,000 educationists and *teachers* met in conference in Boston for professional discussion. All educational questions, the education of the people as such, its national significance, are subjects that seem to be regarded in every country with a degree of keenness which is collateral with the excellence of the system in operation. And in education, as in most other things, the *sense of self-sufficiency* is likely to be in the inverse ratio of the system's excellence. It is a matter of importance that we should properly estimate our place in the world's educational activity.

There are certain well-defined movements in modern education to which attention therefore should be drawn, certain general matters which stand out with great prominence, and yet which are apt to be lost sight of in dealing with detail. These will form the subject for consideration in this chapter.

2. *Generality of Effort to Improve Education.*—The establishment of a system of Conferences of teachers, similar to that referred to above, for the purpose of discussing educational matters, is a feature in almost all countries visited by the Commissioners. In some instances failure to attend is punished by fining the member concerned. At these conferences every endeavour is made to facilitate the free expression of personal views, and the fact that such views may happen to be opposed to those of the chiefs of the official departments, is not regarded in any hostile way. In fact it may be said that the greatest freedom in discussion is *encouraged*, the object being to *focus* the *experience* of many educated workers, and to maintain the only condition which admits of *free and thorough criticism* of all educational questions.[1] Papers are read and discussed at these conferences on all sorts of educational subjects, and there can be no doubt that to this attitude is to be ascribed much of the success of European and American education.

There is also an attitude which is very pleasing, that is the recognition of the fact that all true teachers are engaged in a common cause of great significance, the upbuilding of humanity. One of the effects of the good education which teachers receive as preparation for their work is that they realise that the subject is worthy of life-long study, and that all teachers, inspectors, etc., are *fellow-students*. This attitude of mind eliminates as far as possible any tendency to undue official domination of opinion, which (as may be readily understood) is a real danger, especially in an educational service, where every worker must, in order to achieve good results, put his *heart* into his work. Under the European system the tendency to merely re-echo the opinion of the official head of a department is minimised.

3. *Wide Recognition of Moral Aim of Education.*—The formative function of education touches two elements of the human being, viz., his *character* and his *intelligence*; or to express it otherwise, his *will* and his *intellect*. There is a tendency to forget that knowledge, and even the power of applying it is not the "end-all and be-all" of an educational system. That the first aim of education is to develope a *good will* through the creation in the child mind of *noble ideals*, is receiving everywhere the most earnest attention. There is no educationist of world-wide reputation who does not recognise that *character-building* is the first aim of education, though naturally there is great difference of opinion as to the question of how best to develope moral education. The method of aggregating one day a week children of all ages in a class for religious instruction under a visiting clergyman, is obviously defective. The French view, that the popular school must necessarily confine itself to *ethics*, has much to be said for it, since the children do not so strongly tend to become partisans to sectarian bad feeling, which is really both irreligious and morally injurious. Dr. W. T. Harris endorses the view that religion in the theological sense cannot be taught in the day school; but that view is strongly opposed also in the United States. This much may be said, however, viz., that whatever differences exist as to the policy of introducing denominational instruction in the elementary and primary schools, there is no division of opinion as to the teachers' character and conduct being of the highest importance in moulding the character of the pupil, and as to his nobility of idea, and the width of his outlook, being the greatest factors in the most fundamental element of education, *the formation of the character of the children committed to his care.* This is why the immaturity and lack of both knowledge and breadth of view of the "pupil-teacher," are felt by continental people to be so serious, and is the main reason why such a system as ours cannot be entertained for a moment in Europe.

4. *Function of knowledge of one's own language.*—The excellence of the power of exposition of the primary teachers of France, Switzerland, and Germany, has been recognised by many visitors of the schools of those countries. A good knowledge of one's own language, is the foundation of this power. To aid it, in every school in the United States is to be found a comprehensive dictionary (not a small edition, but one of the largest); the teachers of other countries are also well-educated in their own language. Such education does not depend so much upon the merely technical parts of the language, *i.e.*, grammar, analysis, composition, etc., though this last comes nearer to the matter, as upon an exact appreciation of the true meaning of words, with their *nuances*, and relationships with other words, and upon

[1] The great value of these discussions depends upon the state of education of the teachers; they have all read the history and theory of education, and have all been *trained* in the sense previously indicated.

upon exact thinking. Great stress is laid upon the clear expression of thought, and in most German schools (all?), children are required to frame a sentence by way of answer, instead of replying to a question by a single word.[1] This tends to overcome the slovenly habits of abbreviating, which are apt to assert themselves in children.

These two matters are of great importance to the State. The *language of Australia* depends largely upon the education and care of the primary school teacher in his pronunciation, and upon the propriety of his use of the language; it depends upon the example he sets to his pupils in reading and speaking, the care he takes in correcting their defects of enunciation, pronunciation, tone, and elocution. And here again it may be asked: "What can be expected of the pupil-teacher system as compared with the system of previous training, where these matters are specially studied before the teacher embarks upon the practice of his profession?"

Care as to the proper development of the mother tongue, based upon a recognition of the reaction of precision in expressing one's thought upon the power of clear thinking, is a feature being recognised with increasing clearness in educational circles. The practical as well as the educative value of language in all the affairs of life is more vividly realised to-day than perhaps ever before, and in other countries a degree of attention is paid to the matter to which as yet we are foreign.

The realisation of the part that language may play in moral education is also more developed in Europe. The power of good reading to awaken emotion, to stir up ideals, to arouse patriotism, is more thoroughly appreciated, and this appreciation of its function is growing throughout the civilised world.

5. *Attitude to dead languages.*—Speaking generally, a knowledge of the dead languages is not demanded of those who propose to terminate their education in the primary school. That is a characteristic feature. It is based upon the view that the ordinary workman does not really need a knowledge of the dead languages to carry out his life work properly. And there can be no doubt that much is to be said for this view in countries where the different social strata are well defined. In a democracy, however, where the government of the country depends upon uniform voting power in each adult, the neglect of the specially 'humanistic' element in popular education is fraught with more serious consequences, and can be met only by the teaching of ancient and modern history and civic instruction, subjects two of which are practically absent in our educational system. The benefit of Latin to the ordinary individual is etymological and humanistic. To some extent also it is a discipline in clear thinking. But the trend of modern education is to assign a place of higher importance to realism, and self-expression, and hence intuitive methods, and all those features of education which call forth self-expression and invention are characteristic, while dead languages tend to be correspondingly neglected. And there is a wide consensus of testimony that this attention to the practical needs of life is what is needed for the people as a whole, rather than a smattering of dead languages. And it is further held that practicality may be made consistent with maintaining the educative value of instruction.

Not only have Latin and Greek been assigned a place of less importance, but higher education is now allowed in which modern languages may take the place of ancient. It is claimed that they have both humanistic and practical value; humanistic, because they enlarge the field of vision, tend to overthrow insularity, as well as to develope the linguistic sense and the general appreciation of language and literature; and practical, because in addition to their direct utility, they afford a logical training through the re-expression of ideas in another language.

The idea, that the way of culture lies through dead languages only, has practically disappeared, though it is widely held that if by better teaching, Latin and perhaps also Greek, can be acquired without serious loss of time, the nation that retains these will receive distinct benefit therefrom. The solution of the difficulty is indicated in Chapter XXII. One has to remember that in practical knowledge we are very much behindhand as yet, and our scientific need is more urgent than our linguistic need.

6. *Formative and Informative Elements in Education.*—Modern pædagogy is attaching relatively less importance to the *informative*, and increasing importance to the *formative*, elements of education. Thus any modern European teacher is more regardful of his pupils' attitude to independent observation and reflection, than he is to their mere exercises of memory; to the accuracy of their grasp of fundamental principles, rather than to the mere accumulation of facts; to their power of application of knowledge, than to their mere receptivity.

This is evidenced among other ways by the wide acceptance of kindergarten principles, and by the part that the Pestalozzi-Froebel-Herbartian ideas play in the development of all branches of education. It is shewn in the importance attached to everything affording opportunity of self-expression; in the belief that the normal child should be encouraged to act and think, rather than to be passive and memorise; that his mental activity should tend toward practical activity, and should have the stimulus which comes therefrom; that inert information, even though encyclopædic, is insufficient; that the power to *know* should express itself in the power to *do*.

The replacement of the guidance of psychology for empirical educational methods, the didactic, heuristic, and so on, points in the same direction; so also does the increasing recognition of the importance of individuality in teaching, that is to say, the treating of each pupil as a unit, to be developed on his own particular line, and not merely reduced to conformity with some mechanically designed standards. It is shewn also in the educative value assigned to such exercises as those acquired in manual training, and in the unification of this with other branches of study, *e.g.* drawing, geometry, etc. It is shewn in the freer methods of teaching and discipline which can be allowed to teachers of good education, and who discharge their duty in the light of a sound knowledge of educational theory.

7. *Manual Training as an Integral part of an Educational System.*—The recognition by physiologists and psychologists of the close connection that exists between tactual skill and mental development, has intensified the recognition of the formative value of manual training, It educates by demanding for its proper execution the co-ordination of mental and physical effort. Providing, as it does,

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[1]For example: A teacher asks, "Wie viele Inseln giebt es in der Nordsee, und wie heissen sie?" The pupil answers, "Es giebt ja viele Inseln in der Nordsee und ich heisse Hans Schmidt." (It will be noticed the pupil gets out of a difficulty by affecting to understand "sie" as "Sie.") The *structure* of the reply illustrates the point above referred to.

an opportunity for the self-expression of children, and thus satisfying an innate need of child, and indeed also, of adult nature, it gives them interest in abstract things by focussing their effort on the concrete to which the other leads. They are compelled to exercise their sense of form, to develope geometrical ideas. The manual training unmistakeably tends to establish them in habits of industry, neatness, and precision. But what is perhaps most important is, that it gives the normal impulse to thinking, *i.e.*, thinking for a definite purpose, and in a connected manner about a task, the successive stages of which disclose finally its scheme of development.

Manual training does not in any way limit the power and tendency to reflect upon the abstract principles underlying the work undertaken, but, on the contrary, tends in exactly the opposite direction; and hence one naturally finds that there is no real disagreement among educationists as to the value of educative manual training. This perhaps explains why it is becoming a more and more striking feature of modern education. For the artisan, the artist, the technologist, the impulse to work practically is of the highest importance; it assures real understanding, practicality, executive ability.

In Chapter XIX it has been shewn that the manual exercises should take the form of "Sloyd," that is to say, they should be a connected series of exercises with a definite plan running through them, and carefully designed so that their educative value shall be a maximum. To substitute for any form of "Sloyd" mere lessons drawn from carpentering, or from some other trade or occupation, would be to misconceive the whole matter, and to reduce the educative value of the manual training.

Here it may be incidentally mentioned that both agricultural and horticultural exercises may also be treated so as to be of educative value; that is, of course, by any teacher who has had proper instruction in natural science.

This is what is perceived by educational experts, viz., that our manual powers want cultivation as well as our mental, and the evidence of this necessity can easily be recognised.

8. *Practical Orientation of Education.*—Another distinct feature to be observed in general education is what may be called its *practical orientation.* Care has to be taken in regard to this, not to diminish the educative value of teaching, but it is fully understood that when teachers are properly educated it is comparatively easy to guard against this danger. A scientifically *educated* teacher will be able to maintain the educative efficiency of a practical course unimpaired.

It ought to be said, however, that just in proportion as it is desired to make education at once practical and cultural, so is it necessary to see that the teacher receives a liberal education.

The practical orientation of an educative course is secured by making the illustrative part of the teaching touch local things, with which the children are already, or can easily be made, familiar. Thus in agricultural districts illustrations are to be drawn from agriculture, not however in such a way that the children are informed of matters which both they and their parents probably know better than the teacher, but rather in regard to the underlying scientific principles. These they are more or less ignorant of, and yet, if success is to be secured in their practical life, they must become acquainted with them. Similarly any local industry may be regarded as an opportunity of focussing the child's knowledge on practical things. This will help it to turn naturally to the realities of life; while at the same time those realities will acquire a deeper interest, and be more truly understood, because the underlying principles of science, and those abstract forms of knowledge which constitute the accumulated intellectual wealth of humanity, will be recognised at the same time.

Notwithstanding that the abstract, and not the concrete, attracts the highest of all types of mind, there is never loss, but rather great gain of power, in the dual gift which enables the practical and theoretical to be apprehended together. This is what has been realised in Belgium, France, Germany, Holland, Switzerland, etc., as their programmes shew. And America no less keenly appreciates the value of an education that is at once liberal and practical.

9. *Individuality and Self-expression.*—Reference has been made to the importance of self-expression. Many of the older forms of education tended overmuch to mould all human beings on the same model. They took no sufficient account of individual differences and tendencies or of the very marked aptitudes and inaptitudes of human beings. Such systems of education frame hard and fast curricula, to which each pupil is supposed to respond. They gauge success by examination based on these curricula, and naturally strain after securing uniformity. With a mechanical system, especially with a teaching staff insufficiently educated, a system of supervision must be adopted which is also mechanical. Instead of qualified teachers dealing with the children in their discretion, an officer or inspector is appointed to determine how far the teacher is capable of making his pupils respond to the mechanical demands of the system. It is obvious that this leads to all sorts of untoward results, and gives no proper gauge of the true educational efficiency of teachers whose pupils are very variable material. Under such mechanical systems a teacher is driven to study the view of the examiner rather than the sound education of his pupils, and this actually happens.

Such a conception of education, as is referred to above, has disappeared from European countries and America, and the effort in the United Kingdom is undoubtedly in the direction of delivering the British nation from the evils of mechanical systems by the proper qualification of their teachers for service under a free system.

The methods of education which are being so well developed in other parts of the world are such as allow the individuality of the pupil the greatest possible liberty, and aim at giving him the fullest possible opportunity at self-expression. This characteristic difference commences in the kindergarten, and is based upon the fundamental idea that the natural spontaneity of the human being demands *direction rather than suppression,* that education which coerces a child into a more or less affected submission to a mechanical routine of study, impairs, just in so far as it is successful, his development as a human being, who has inevitably to learn self-direction and to maintain a positive attitude to the totality of things that surround him in practical life. This has been discussed in Chapter XVI. More and more is it recognised that school-life should lead to self-direction and self-control; that its discipline should be such as to *help* the child rather than *coerce* him; that he should not be the victim of any failure to conform to some mechanical notions of education in the minds of persons not in daily contact with him.

The idea that *real* education can be assisted by corporal punishment has disappeared. The keeping of boys at tasks by fear of flogging is a system that has also gone, though not entirely in this State.

Regarding

Regarding the attitude of pupils and teachers in other parts of the world, it is easy to recognise that the relation is *friendly*, and this is much stimulated by the realism of the teaching, and by that personal contact which is developed through such institutions as the school excursion, carried out with a definite educative object and not merely for sport, and where the children both learn and enjoy themselves at the same time.

10. *The Will, and Physical and Mental Activity.*—Another striking feature in recent and better methods of education, and one of the fruits of the application of psychology to that subject, is the recognition that all undue coercion of children, in so far as it is successful, tends to diminish their will-power, and is, therefore, wrong. This has been referred to in the last section, but it may be added that the modern tendency in education is to stimulate physical and mental activity by stimulating the will of the pupils, and by indicating the channels in which it may find normal exercise. Education of this kind does not aim at communicating merely information, but rather makes the communication of information afford an opportunity for the formation of character, by enlisting the will *i.e.*, the co-operation of the pupil. *Information* is but the means to the end; *knowledge*, and the power and impulse to apply it, are what are of practical value in life. While this is true, it is recognised also that it is the right activity of the will, of the intellect, and of the physical organism at its command, which must be directly promoted in *true* education, and that all failure to take official account of this, is failure to understand its significance. This has, of course, been adverted to in Chapter III. It remains to be said that the recognition of this view is world-wide.

In this aspect it is easy to see that the employment of immature and uneducated children as teachers, which is unquestionably the characteristic of the pupil-teacher system, is absolutely indefensible. Judged from the lower standpoint, viz., its efficiency to afford sound information, this system cannot be compared with the systems of Europe and America. From the higher point of view, viz., the duty to develope to the utmost a right action of the will, and a normal activity of the mind and body of the child, it is seen in a still less favourable light.

This wide recognition of the true character of education is the secret of its superiority in other countries, and affords an explanation of the strenuous efforts of leading educated men in the United Kingdom to reach a better method than the existing pupil-teacher system.

11. *Increased attention to Physical Culture.*—Basedow (1723-1790) who, by the way, aimed in his method at thoroughly educating and training teachers for their work, endeavoured, in the elementary work he published in 1774, not only at constituting a complete system of primary education capable of developing the intelligence of the pupils by "contact with realities rather than mere words," but also at securing a sound development of the powers of the body. It was reserved, however, for Sweden, through Per Henrik Ling, to develope a throughly scientific system of physical education and gymnastic. His work on the "General Principles of Gymnastics" is divided into the various branches, viz., pædagogic, military, medical, and æsthetic gymnastic, and he has demonstrated how necessary it is to base all gymnastic upon a thorough anatomical and physiological knowledge of the human organism in its entirety, together with a knowledge of the laws of motion, considered from the standpoint of physics. His work was extended by his immediate successor, Gabriel Branting, and his own son, Hjalmar Ling. Branting, developing his predecessor's theories, brought medical gymnastics to a high degree of perfection. So also did Hjalmar Ling, though pædagogic gymnastic was that to which the latter gave his more special attention. By means of his pen he made drawings of thousands of forms of gymnastic movement. These were collected and grouped in particular categories, according to their action upon the human organism, and it is in this manner that the 'ten categories' of gymnastic movements have been constituted. Hjalmar Ling arranged, moreover, the movements appropriated to different ages, and made the pædagogic gymnastic available and suitable for the primary school, and for the development of both boys and girls of all ages. He further designed gymnastic games to supplement the more severe forms of systematic gymnastic. "For," said he, "the whole ought to be instinct with joy."

The physique of the Swedish people has been distinctly altered for the better by the wide adoption of gymnastics, based upon a proper knowledge of the human organism; and recently improvements are said to be taking place in the physique of the American woman from the same cause. The recognition that a true gymnastic must take the form of physical culture is intensifying all over Europe and America; and what is still more important, the realisation that it is as much the duty of school authorities to see that the elements of physical culture are attended to, as it is their duty to take into account the culture of the mind, is world-wide, although we have neglected the matter somewhat seriously in this State.

The teaching of gymnastics by mere athletes may be worse than useless, and this distinction is fully recognised in Europe and America. The basis of physical culture must always be a real knowledge of the human organism, and the views expressed in Chapter XVII represent the modern ideas of the subject.

12. *Better Training of Teachers.*—Notwithstanding the incomparably better methods of Europe in the matter of training teachers, the disposition to bring their training up to the highest practical degree of perfection is distinctly marked throughout Europe, and not less throughout the United States of America. English measures are, so far, *half-hearted*, even under the reform of education now being undertaken. Sir William Anson, speaking in Parliament on the matter (see *The Times*, 10th July, 1903, p. 4), said, "At present the pupil-teacher may commence his work in rural districts at the age of 14, and in urban districts at the age of 15." He merely proposed unbroken preparation to 16, and half-time preparation to 18. This means that the Government of England is not yet prepared to make the English teacher the peer of the teacher of Europe. The education of the people of England must inevitably reflect this.

Able Englishmen who have travelled in Europe, with a knowledge of its languages, and who thus have placed themselves in touch with its realities, have spoken out with no uncertain voice on the defects of English education, and are strenuous in their attempts at reform. Such men have pointed out that England is paying dearly for this failure to educate her people as well as they are educated in Europe. England's pupil-teacher system is not a thing to be copied by us. Its best men deride it in no equivocal terms.

Throughout Europe and America, it may be added, the fact that they are far beyond us in the matter of training teachers in no way gives birth to a sense of self-sufficiency, or leads to a diminution of effort. The United States, no less than Europe, vividly realises the necessity for stimulating the education of the primary teacher to the utmost. They believe that it is of the highest importance that he should perceive the significance of his work, viz., that he is charged with the *upbuilding of the character* of the nation. The importance of awakening and directing the intelligence of the child, of imparting to his various powers an impulse in the direction of practical realisation, and the tremendous difference between teachers working without or with the inspiration of a knowledge of the history of education, are features strikingly presenting themselves to any, even a superficial observer of American and European educational activity. The formative influence on a teacher of a knowledge of what has been done by his great predecessors in the field of education is one of the secrets of the keen recognition of the value of proper education of teachers. The perception of the great gulf that exists also between the old rule-of-thumb methodology, and that based upon psychology, is also to be attributed to the very different attitude of Europe and America to the question of the training of the teacher.

Here it may be said that just as it is important to consider the formative functions of education in regard to the children, so also is it necessary to consider them in regard to the teacher. Why is it, for example, that teachers in Europe and America, even of kindergarten, are required to have a good secondary education, and seriously study such subjects as psychology? Is it not because in those countries it is realised, as it has not officially been realised here, that such knowledge has a high formative value?

A teacher who has read psychology has not longer the same narrow outlook on his work, and the same is true as regards the teacher who has read the history of pædagogy. The theory of education, as it stands to-day, has been won by an amount of thought and experience, which it would be difficult to pourtray, or to properly estimate. The interest taken in educational theory is unmistakable in time past in Europe and America, and though it has not yet made English education what it ought to be, it is recognised by all those who are labouring to place it in a position worthy of the Empire, as the most important formative element in the preparation of the teacher.

13. *Definite Curricula with Freedom in Teaching.*—The development of somewhat elaborate curricula is a feature of all institutions where education has been thoroughly studied. This has often led to the false impression that under such curricula the individuality of the teacher is seriously restricted—that his personal opinions are allowed no freedom. Nothing could be further from the truth.

A fully developed curriculum may be used to enforce mechanical treatment, but it is not so used in Europe or America. Its office is to indicate definitely the general aim of the instruction. In the hands of the well educated and competent teachers, it is handled with considerable freedom. With an uneducated and immature teacher, it may, perhaps, have to be regarded as a direction from which he may not deviate, for fear of committing serious error. It cannot, and does not fetter the competent teacher, while, with the inferior teacher, it marks out the path he is to follow.

Here again one realises the characteristic difference between the teaching of properly educated and mature teachers and the teaching of relatively uneducated child-teachers. In applying a curriculum to any class of children, it is essential to take into account their general calibre and their surroundings. The competently educated teacher may safely be left to consider how he will take the details of his curriculum.

The practical orientation of teaching necessitates free treatment of curricula; and there is to-day a growing and wide-spread recognition of this fact. The best results are not obtained by dictating to a teacher how he shall treat details, but rather by outlining a general programme, and shewing him, as it is done in Europe, a *typical development* of it; then leaving him to apply this, according to his discretion, and according to the characteristics of the children with which he has to deal.

14. *School Directors.*—Large European schools are placed under a director, who does but little or even no direct and regular teaching, but whose office is that of general supervision—the stimulating of the teachers, and care of the larger matters pertaining to school development. He is, of course, free to undertake any teaching he thinks fit, and has, of course, the power of intervention. Such an officer is expected to be a student of education, and to endeavour to help his subordinates to keep in touch with all forward movement. Often he takes up some subject as a specialty, and does original work therein, so that his activities are such as command for the teaching profession public recognition, public respect, and contact with the larger world. The influence of such men is undoubtedly good, and the post of director is one to which the abler men in the teaching profession naturally aspire.

15. *The function of Inspectors.*—The maintenance of efficiency of unity of teaching and unity of organisation involves in the administrative scheme of any department of instruction the appointment of persons, whose duty it is to have an oversight over a number of schools lying within a particular area or district. These are known as inspectors. The work they are called upon to do is undoubtedly of a very high and responsible order; for it is through their influence largely that the efficiency of the organisation is maintained. Different conceptions exist as to the proper work of such officers; and, as a matter of fact, the most varied opinions are entertained as to what their office really is.

The two most fundamental differences in the view of their possible functions are:—

(*a*) That their main duty is to ascertain the efficiency of the school by periodical examination of the children, and of the mode in which school records are kept.

(*b*) That their proper work is that of general oversight, and that they should be the friend and adviser of the teacher in regard to his teaching methods.

Which rôle he ought to play depends very much upon the view taken as to the teacher's efficiency and natural tendency. If teachers be appointed who are inefficient, half-educated, and have no interest in their work, it may be necessary to drive them by periodically examining the children unfortunately placed in their charge; if, on the other hand, teachers are efficient, well-educated, and have an interest in their work, there can be no doubt that their daily contact with the children in their charge qualifies them to form opinions as to the progress of the children, which no such casual visitor, as an inspector, can possibly form.

Wherever

Wherever the pupil-teacher system is in vogue, the examination of the children by inspectors has been also in vogue; and the fact is worth observing, for it carries on the face of it an implication that there is no confidence in the teaching staff. Certainly, if the inspector is a better examiner than the teacher daily in contact with the pupils, that is almost in itself a declaration of incompetency. The matter is important. The principle proper to follow may best be illustrated by taking an extreme case.

In the schools for defectives the teachers have absolute control of details; that is to say, they are regarded as absolutely the best judges of the proper way to educate the children in their charge. The reason of this is, that, with the feeble-minded, no stereotyped method would be of value. Consequently the principle followed may be stated as follows :—

(*a*) Care is taken that the teacher appointed is efficient.
(*b*) It is assumed that, so far as lies in his power, he will discharge his duty.
(*c*) The daily contact with the child gives him unique opportunities of discerning the best way of educating it.
(*d*) Real education demands thoroughness rather than attempt at satisfying some superficial and stereotyped standard.
(*e*) The teacher himself is best able to estimate the suitable way of carrying forward the education of the children committed to his care.

What is so clearly seen in the case of the feeble-minded, applies really to the education of all children. From one year to another they are known to vary, and no casual inspection can shew whether they have been dealt with to the best advantage from the standpoint of sound education or not. How far they have been specially prepared to respond to some probable programme of examination can of course be estimated, but this is a gauge of the master's shrewdness rather than of the reality and thoroughness of the pupil's knowledge. It is well known that the predilections of the examiner are made objects of research on the part of the teacher with a view to ensuring a good report.

The least reflection will make it obvious that no teacher in conducting his teaching should have to take into consideration the special views of an inspecting examiner. The teaching to be good must be governed by two things, viz. :—

(*a*) The curriculum, expressing the general aim of the education.
(*b*) The mental endowment of the children to be taught.

Bearing in mind that teaching is to some extent *en masse*, that a teacher called upon continually to sacrifice the whole class to the backward pupils, or to sacrifice the backward pupils to the rapidity of progress of the better pupils, it is preferable that his experience should guide him as to his proper course of action without regard to the results of inspectorial examination. As his experience of teaching increases, he will learn what, with his own personality and endowments, he himself is capable of doing; and his decision in regard to the dilemma just pointed out will, in regard to his own personality, probably be the wisest one, provided only that originally he was properly educated for his profession.

The method of inspection, wherever there are no pupil teachers, *i.e.*, throughout Europe and America, is practically wholly different from that of this State. The inspector exercises supervision, he advises, inspires, encourages, suggests details, comments upon educational developments, and so on. In Germany the programmes of work are drafted by inspectors and directors, working in collaboration. As to the advantage of the method, there is no room for doubt. The results attained in our schools are undoubtedly inferior.

16. *Relation between Teachers and Pupils.*—No system of education is satisfactory which fails to promote the most cordial sympathy between the inspecting and the teaching staffs, and similarly between teachers and pupils. Children, to profit by their school education, must recognise in the master their friend and helper, a man, or woman, who has their interests truly at heart. For, as previously stated, in Europe and America, the teacher is regarded as the *character-builder*.

The wider outlook, the better knowledge, the more serious view, of the matured and well-educated teacher, are calculated to enable him to fully realise that mere mechanical discharge of his teaching duty is a failure to discharge his real duty as a teacher. He cannot deal effectively even with the informative element of his work, to say nothing of the ethical, without putting his heart into it. The teacher is necessarily largely the ideal on which the children build up their ideas of manliness, integrity, etc., and therefore sympathy with his pupils is a pre-requisite if he is to favourably influence them. That the teacher's calling is really in the highest sense a vocation—a duty that is—to which he ought to feel the call of an inner voice, is a view which is really very widespread, and is clearly recognised in the official documents of Europe, as translated passages in this report will perhaps have shewn.

17. *Status of Teachers.*—Except perhaps in some parts of the United States, qualified and educated teachers are, the wide world over, inadequately paid. It probably will always remain true that the earnest teacher will never be adequately paid. At the present time in this State his emoluments are on a scale which must tempt to abandonment of what really ought to be regarded as one of the most important and honourable professions. The question of the emoluments of teachers will, however, not here be dealt with. Here it will suffice to say that the recognition of the fact that the well-being of humanity depends largely upon our appreciation of the teacher's work, is a distinct feature in the views of educationists in Europe and America.

It is well for any country that so comports itself to the teaching profession as to secure men of gentlemanly conduct and of integrity of character, because the character of the teacher is a large factor in forming the character of the child with whom he is in daily contact.

All teachers of the young are in danger of being narrowed by their contact only with children, who can present to their opinions and statements and views no effective opposition. This absence of adult mental attrition has a consequence that can be distinctly recognised, and which is unquestionably more pronounced in those who have embarked on teaching, without the liberalising effect of a good secondary education, than in the case of those who are engaged in teaching at a more adult period of their lives and after a good education. The more, therefore, teachers involve themselves, or who are involved, in the wider life of the community, the better; and any régime which restricts them in this respect hampers their development.

The

The sending of teachers out in a state of better preparation for their task, the giving them at first a much higher education, will do much to command for them that public respect which is necessary to induce the better class of men to remain therein. A larger outlook will not only act as a corrective to their daily association with children, but will also in its turn make their influence of greater value to the children, and help to increase our national vigour.

18.—*Character of the Teacher's Work.*—It may, or may not, be true that national existence is bound up with the system of education. There is, however, a growing opinion that it is at least one of the greatest factors of national strength; and certainly, in so far as intelligence and character determine the industrial, commercial, and moral activity of the people, it may well be said that the function of the schoolmaster is of great and growing importance. Public men throughout England are calling attention in no unmistakable terms to the duty that lies upon us of providing better education for the people. Sir William Anson, in the place before referred to, says:—"We want a good liberal education, with such knowledge of science as will enable a man to understand the world he lives in; such a knowledge of science, I am sorry to say, as is not given to the youth of the period in which we live (that is in the United Kingdom); and we want a good technical education, something that will fit our youth to compete in the commercial struggles of the day, coupled with such a knowledge of language and literature and history as will remind them after all there is a past, and that great men have said great things worth saying and worth recording."

It is perfectly clear that if we are to get the best results, the real character of the work of the teacher must be appreciated. He must be correspondingly respected. His emoluments must enable him to take a reasonable place among his fellow men.

19. *The Direction of Education.*—The liberalising of education, the freeing of the narrowing tendencies before referred to, the maintenance of a high state of efficiency, all demand that the educational system of each country shall be under continual review in comparison with the systems of other countries. In all countries visited by the Commissioners, the chief officials had considerable knowledge of and the widest sympathy with educational movement in other countries of the world, and kept the educational practice and theory of their own countries under continual criticism.

At the centre of educational administration in each country a pædagogical library, containing reports of educational work and progress in other countries, enables changes in systems to be systematically noted. The special pædagogical libraries contain also all the most important works on education, so that the administration has the opportunity of studying the educational systems of the world.

For an administrator to spend the whole of his time on the details of administrative duty, is recognised in other parts of the world as a thorough misconception of his function, and a serious misuse of his time. The case is similar with inspectors, other high officials in the department, and even with directors of schools. To be able to inspire their subordinates, the higher officials must be widely cultured, able by linguistic and general attainments to keep in touch with world-wide educational movement, not so much with its mechanism, although that is important, as with its theory and spirit. It is obvious that the best equipped schools do not necessarily ensure a good system of education. Equipment is, of course, important, but the spirit of the teaching is vastly more so. To maintain in teachers some approach to continued high effort, an effort upon which the whole character of the nation so largely depends, it is necessary that the superior officers and chief of administration should, in addition to possessing wide culture and large sympathies, use their personal influence to inspire the effort of their staff.

Dictation of a policy may answer in some walks of life, but *Education depends upon the moral earnestness and technical efficiency of the teacher.* Hence he needs to be supported by high influences, and may not perform his work perfunctorily, for such performance fails to possess the most important element, viz., that which builds up character.

Over the whole of Europe and America the importance of a liberal direction of education is fully recognised, and the culture and attainments of the men directing education are matters to which more and more prominence is being given.

20. *Free Education.*—Over a large part of Europe, and a considerable part of America, free education is provided. Some places, Denmark for example, have for their primary system free schools, and also better equipped schools charging slight fees. In some cases free education extends right up to the University inclusive, as, for example, in California. The whole question will, however, be dealt with in treating of secondary and higher education.

In almost all countries, too, facilities exist for the talented to acquire the benefits of good education. Switzerland, with its free elementary education, its excellent and well-equipped schools, and well-educated teachers, stands in marked contrast with the educational equipment of our State. And the same thing is true of almost the whole of Europe and America.

21. *Urban and Rural Education.*—All towns have schools of the highest class which represent the highest organisation of education attempted in the particular country. Once the character of the town school is fixed, and the scheme of staffing, there is no difficulty in arranging the simpler rural school. The teacher of either should be fully qualified; and that is a point at which Europe and America are strenuously aiming, and the use of only partially qualified assistants working under supervision is disappearing.

The pupil-teacher in our schools is a teacher really teaching independently; that is a feature which does not exist anywhere in Europe, as far as the Commissioners could learn.

22. *Conclusion.*—The drift of modern education may be summed up by saying that the spirit of progress is thoroughly alive in European and American education. Better education of teachers, better methods, better hygiene, better schools, better equipments, are characteristic. It will be seen by comparing some of the old programmes that we are here lamentably behind, and that the most strenuous efforts will be necessary to reach the condition of either Europe or America of to-day in two decades from the present time.

CHAPTER LVIII.

CHAPTER LVIII.

Rural Schools.

[J. W. TURNER.]

The difficult question of providing means for educating children in the sparsely populated districts of the State was fully and ably discussed at the 1902 Conference of Inspectors and Officers. Several Inspectors with a full acquaintance of the school needs of such districts gave their experience, and made valuable suggestions as to the best means of overcoming the difficulty.

District Inspector Long moved, "That, while in full accord with the desire to extend the means of education in sparsely populated localities, this Conference is of opinion that nothing is at present practicable in addition to what the Department now does in that direction."

The following is the discussion, in part, which took place on Mr. Long's motion :—

"Mr. Long: I take it this item refers to the provision of means of education in localities which are not served by methods already adopted by the Department. The suggestion is that it should be done by in some way subsidising private teachers. Those who have had experience of the more remote regions of this State will agree with me that it is so rare to meet private teachers who can be regarded as worth subsidising that it is hopeless to attempt anything in that direction. I have often seen children running about in places where they are quite removed from educational influences. I have given the matter much thought, and so far as I can see it is not possible to do anything to extend the means of education into the remote districts beyond the provision already made by the Department, and I move a resolution to that effect.

CENTRALIZED COUNTRY SCHOOL—KINGSVILLE, ASHTABULA CO., OHIO.

This was the first Centralized School in Ohio; opened 1892. The cut shows the School at dismissal, with the waggons ready to take the children home.

"Mr. Bradley: I beg to second the motion, and to state that my experience, which is, perhaps, as large as that of any inspector in country districts, coincides with Mr. Long's. I was going to suggest that those who are engaged in the country should be canvassed to ascertain how many families there are within their knowledge for whose education this special provision needs to be made. I only know of two in my own district whose wants have not been met by the provision we now have for supplying Half-time Schools and House-to-house Schools. The exceptional cases are so few, and the difficulty of meeting them so great, that, with Mr. Long, I consider the scheme would be impracticable. Further, if we subsidise, we must see that we get the value of the money. That means that we have to hunt up these people, and appraise the value of the work they are doing. I am just as anxious as any one that every family, no matter how isolated, shall be reached by the educator; but I can see that the matter is simply impossible.

"Mr Blumer:

"Mr. Blumer: Some time back the plan was carried out of appointing teachers to the small schools where they received very little salary, on condition that the people themselves provided board and lodgings free for the teacher. In other words, we paid the salary, and the only expense the people were put to was in the provision of board and lodging. How did the plan work? I think it was the unanimous opinion of those who had experience of such cases that it was a most ignominious failure. The teachers were horribly housed and fed. They received their board and lodging, not in the way of remuneration, but in the same way as the swagman who was allowed to camp and feed there.

"Mr. Board: With regard to the subsidising of teachers, I have very little to say. It seems to me to be beset with so many difficulties that I must pass it by. But, with regard to the first portion of the matter, we are considering the provision of educational advantages in localities too thinly populated to support any school prescribed by the regulations. I am disposed to think that something might be done, in a few cases especially, where small Provisional Schools have had to be closed because the necessary attendance of ten could not be maintained. There are many of these schools that are so situated that when we close them we can make no other provison for them by working them at half time with other places. Yet we have these schools within the radius of 6 miles of existing schools. In Victoria they have adopted a plan that, as far as I can see, has very much to commend it, and that is the conveyance of children to school by the aid of subsidies towards conveyance granted by the Department. When a school is closed an offer is made to the residents to pay 3d. or 4d. per day for each child conveyed to school during the year. Under that regulation, adopted in the first place for purposes of economy with a view to closing up many of their small schools, last year children were conveyed to 190 schools in Victoria, at a cost of £2,020. Since that regulation has been in operation, about 270 small schools have been closed and the children conveyed to neighbouring schools. It seems to me, without going anything like as far as they do in Victoria—because I think they have carried the matter rather to an extreme—we might apply the principle to many of those small schools that lie within a 5 or 6 miles radius of an existing school, but which cannot maintain the average of ten. Taking my own district as typical, the Provisional Schools average in cost about £4 10s. per head on the enrolment in them. If we paid 3d. per day for the cost of each child to school, it would not reach the average cost of that child in a Provisional School. It is possible, if we get seven or eight children carried by means of vehicles to a neighbouring school, that school will be raised from a Provisional School to a Public School, and the actual cost per head will be decreased, while we still bring within the range of our education those unfortunate children who would otherwise be deprived of it. I do not know whether there are really so many practical difficulties in connection with the operation of this plan in New South Wales above what they find in Victoria as to make it impossible for us to adopt it. I will move:—

That, with a view of supplying educational advantages in localities too thinly populated to support any school prescribed by the regulations, subsidies be granted for the conveyance of children by vehicle to existing schools where such may be found practicable.

The details can be left to departmental regulation. I only want to affirm the principle. I think we might pay 4d. per day per child without adding a single penny to the expense of our system in New South Wales.

"Mr. Rooney: This question has been before me for years. In the district in which I live there are hundreds of creeks, and along these creeks are abandoned gold-fields. When the good days are all over all the good men leave and the old crawlers remain behind. There are no horses or vehicles within miles. The families that live along the creeks eke out a most miserable existence. I know families that do not, on an average right through the year, earn 5s. per week. Their children never have boots; they have ragged clothes; many of them are half-castes. To bring these to school in vehicles would cost the State an enormous amount. In fact, a vehicle would have to be got probably 20 miles away. The Government should see that such a state of things should not exist. People of low intellect and low character will go as far away from society as they possibly can. They will go to the mountains and eke out a miserable existence by fishing and washing in the creeks for gold. They bring up their children like animals. Schools would be the best thing they could have; but, with Mr. Long, I say, after seventeen years' consideration, it is impracticable. You cannot get children, far from an existing school, to value the school. The parents will take no interest in it. The children are not clad; they have no possible means of going to school—there are no vehicles anywhere near. In cases where there were, would not this be a grand opportunity for milking the Government cow? Respectable families who are making some sort of a living can always find a way of sending their children to school; but if they find they are to get a subsidy they will at once claim it and make no effort to get to the nearest school.

"Mr. Board: That is a matter for regulations.

"Mr. Rooney: I say the thing is impracticable. I know that at present there are fully 100 children in the Mudgee district receiving no education whatever, and I can see no practical way until the Government steps in and prevents the state of things that now exists of people living in a state of semi-barbarism and eating kangaroos and wild animals as their chief food. Why should the Education Department bear the expense? People are allowed to settle anywhere, to live in any sort of way, and bring up their children like animals, and the Education Department has to try some means to educate them. I do not think anything more can be done than the Department is doing.

"Mr. Cooper: I think that we all agree with the principle of the resolutions submitted by both Mr. Long and Mr. Board, and are in accord to a certain extent with the speeches of those gentlemen and the members who supported them; but I think we ought to turn to the law and the regulations, with a view to seeing whether a remedy to meet the difficulty is not already in force. Clause 23 of the Public Instruction Act provides that, in districts where, owing to the scattered state of the population, it is not practicable to secure sufficient children to form a school, the Minister has power to so regulate matters of administration that every child in the community may be reached. My experience has been that of Mr. Bradley. I have been in some very rough and isolated places, where it has been difficult to take education; but nevertheless it has been provided for. There has been a difficulty that we all have had to experience. It so happens in these cases that the people are of the poorest class, and the least able to obtain the co-operation of any neighbours, and yet they are called upon to bear the full cost of providing rooms in which to hold the school. By a gracious administration, inaugurated by Mr. Bridges, we have had an opportunity of getting some money in the case of Half-time Schools; but I do not know whether that

has

has yet been extended to House-to-house Schools. It always seems to me to be a reversal of the natural order of things that those that are least able to help themselves should be called upon to do something—however small it may be in the way of providing money, it is very great to this class of people—in order to provide the building in which to hold a school. If they fail to do this, they cannot have the means of education. I think that, if it was suggested to the Minister that some pecuniary aid should be given within reasonable limits, which could be easily regulated by the inspectors in each individual case, the difficulty experienced in this matter would be largely met. My experience has been that the people in these outlying places are oftentimes very eager to avail themselves of education; but the difficulty is the practical one of money. I would move:—

That it be suggested to the Minister that the granting of pecuniary assistance to the residents of isolated places to help them in providing the necessary rooms for Half-time and House-to-house Schools would probably meet this difficulty.

"Mr. Sheehy: In connection with this question, I would point out that the 23rd clause of the Public Instruction Act, referred to by Mr. Cooper, provides that the teacher shall be appointed by the Minister. The question is whether aid should be granted in certain cases to the residents by subsidising teachers engaged by them, and providing school materials. In order to test the feeling of the Conference, I move:—

That educational advantages should be provided for private schools in localities too thinly populated to support any school prescribed by the regulations.

I have in my mind several country schools that have been closed, but which have been continued by teachers engaged by the residents. The Department made no objection whatever to give them the use of the schoolroom, and the books therein, but when those books and the materials were exhausted, no fresh supply was given them. I know of one case where the residents were so anxious to have a school that they applied to have the Provisional School that was closed removed to another site 4 or 5 miles away. They got permission to remove it, and at the present time they have a teacher employed to carry it on. In my opinion these schools should receive encouragement. I have not much more to say. Everyone here understands as much as I do, perhaps more, about the matter; but I mean to say that these small schools that we have closed under the Department and have been continued by the residents should receive every encouragement. I have several of them in my district. The teachers are employed by the residents. We need not inquire whether the accommodation is comfortable or not—that is a matter for the residents; but in the matter of House-to-house Schools the inspector has to find a suitable place for the teachers to lodge. In the case of the other schools he has nothing of this kind to do, and, consequently, they stand on a different footing altogether. Although we might not be prepared to go to the extent of subsidising the teacher, even by a small amount, once a year, provided that the inspector is satisfied with the teaching of the four "R's," such schools should get every encouragement in the way of books and materials.

"Mr. Hunt: No doubt these inspectors who affirm the desirability of subsidising private teachers or private efforts mean well; but I am quite sure that if the Department do not hold the reins very tightly we shall bring trouble upon ourselves. I have a very large district, and, owing to the size of many of the blocks of land taken up by the parents, it is sometimes difficult to meet the education requirements of the people; but I know that there are very few families, and I make full inquiries when travelling about, who are being educationally neglected. Where we are not meeting the educational wants of the outlying districts there are teachers and governesses employed; but there are a few instances where people have to drive their children great distances to attend the school. In the case of the Combarra School, I know that there is one family which has to go 8 miles every school-day to attend the school; what they feel the want of is a paddock in which to feed their horses. There happens to be a common there, but not a paddock. If the Department would meet such a case as this by fencing in the school-ground, and by fencing in, say, an acre in which the horses may be put by those who drive to school, I think these people will then see that the Department is trying to meet their case. I saw a letter last evening in the *Stock and Station Journal*, in which the writer spoke of a case—it happens to be in my own district, somewhere between Warren and Quambone, and he says that no Minister has visited that part since the time he has resided there, some twelve or eighteen years, and he suggests that the Department should send forth travelling schools, teachers travelling in a vehicle in which they might live, and visit such outlying families. I believe that this is now done in America. I daresay that there are cases here in which this system might be tried, where we could send somebody out who could visit these out-of-the-way places, and find out the families that are really not being educated.

"Mr. McCredie: Before the question is put I should like to say that whilst I agree with Mr. Cooper's suggestion, I think we should go a little further. He has suggested that a grant be given in the case of applicants for Half-time or House-to-house Schools. No doubt great hardship is suffered by many of these people if we call upon them to bear the cost of erecting schools, for many of them are among the poorest people in our land. I know that, because of several applications of this kind that I have dealt with personally. It would be a great hardship for them to find the money to build the school, or even to assist in erecting it by their own labour. There is one clause of our regulations that I would like very much to see expunged, and that clause is No. 50 of the regulations framed under the Act. I think that would be a step in the right direction. It states that 'Aid will not be granted towards the maintenance of Half-time Schools if suitable rooms are not provided by the applicants.' I can speak from my experience during the last three or four months. Inspectors have sent in applications for Half-time Schools, and I have found it very hard to concur in their recommendations that these schools be established. The Department should do something to meet the case wherever a small average attendance can be assured. I would, therefore, move:—

That Clause No. 50 of the regulations framed under the Public Instruction Act of 1880 be expunged, and provision made for the granting of aid in the erection of buildings for Half-time Schools.

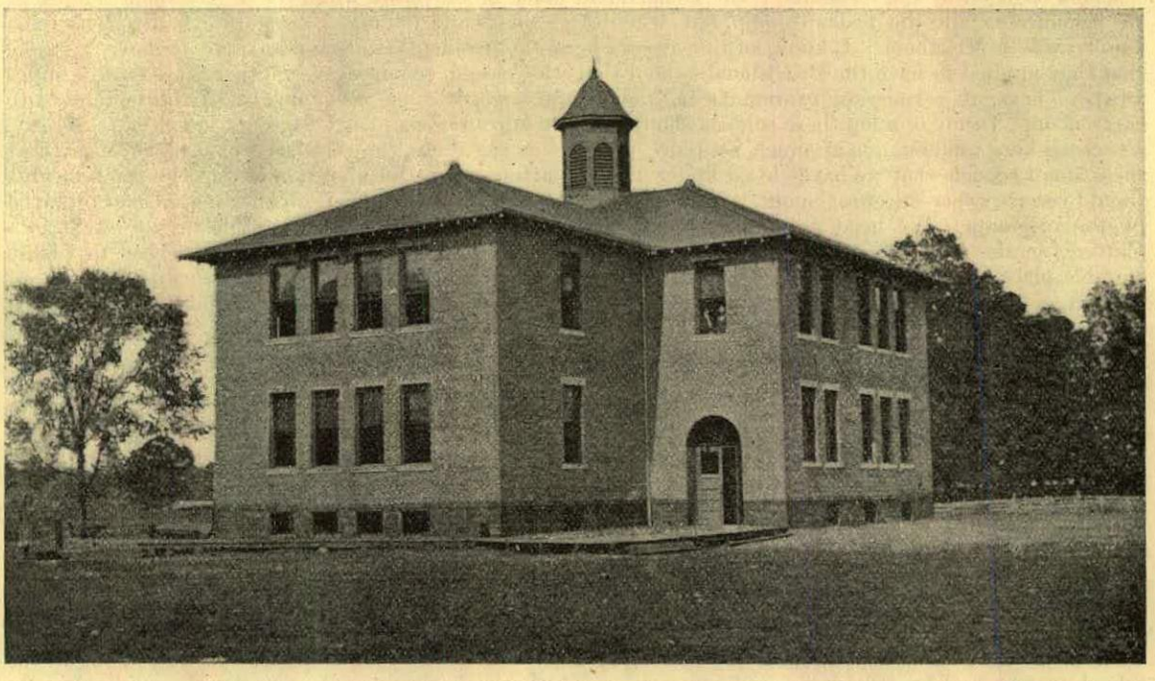
"Mr. Lobban: We are to submit a proposal with regard to the question of subsidising teachers engaged by parents to provide educational requirements. It is well-known that on some of the large stations, a stockman, with perhaps three or four children, resides on one portion of the run, and another stockman, also with a family, resides perhaps 10 or more miles away. These people are unable to engage teachers, and, of course, their children have to be provided for by means of itinerant teachers. My experience is this: I have not yet seen a place where the people have not engaged such a teacher, in such

such circumstances. We are supposed to be legislating for a certain class of people. I have not met any families where there is half a dozen children between them without their having engaged a teacher. Up to the present the only gentleman who has spoken to the latter part of the proposal is Mr. Sheehy. He made a definite proposal. Before we come to vote on this qustion, I want to understand what we really mean by subsidising teachers engaged by parents and providing school requisites.

" Dr. Morris: I think that the matters brought forward this morning point out to the Conference that the Department should be prepared to strain their purse somewhat rather than allow the terrible state of things described by gentlemen like Mr. Rooney to continue. I think it is a blot upon our civilisation that any responsible human beings should be rising into life under the conditions described—and, I am sure, described faithfully—by Mr. Rooney. It rather causes a shudder in my mind that they should be allowed to grow up like kangaroos and wallabies. I think we should be careful about shirking our responsibilities with regard to these persons. I do not think that any sum within reason should be spared to save these children from such utter degradation.

" Mr. Thomas: I have a resolution to move, which, I think, will, perhaps, meet the difficulty. I beg to move:—

That the subsidising of teachers engaged by parents presents unsurmountable difficulties, but steps should be taken to liberalise the existing regulations as to the establishment of Half-time and House-to-house Schools.



CENTRALIZED COUNTRY SCHOOL, GREENE TOWNSHIP, TRUMBULL CO., OHIO.

Opened September, 1900.

" Mr. Bridges: There has been a great deal of talk about this matter, and, perhaps, a certain amount of irrelevant discussion; but I recognise that the matter is a most important one, and have, therefore, permitted a wider scope than usual in the discussion. I think I am justified in taking these as substantive resolutions instead of taking them as amendments on Mr. Long's motion. Adopting that course, I will put the last resolution first.

" Mr. Thomas' motion was carried, the voting being 26 for and 6 against.

" Mr. McCredie's resolution was put and carried.

" Mr. Cooper's resolution was put and carried.

" Mr. Sheehy's resolution was put and lost.

" Mr. Board's resolution was put and lost.

" Mr. Long: I withdraw my motion. We ought all to form our opinions about matters that come directly under our notice. I will say this: that I feel quite sure that to grant pecuniary aid for the erection of buildings for Half-time Schools—I will not say itinerant schools, for I do not think that is provided in the regulations—will operate most prejudicially. Very often there are people who have a small school within accessible distance, but who, if they could get a little building put up for their own particular children a little nearer at hand, would begin agitating for it. No doubt all these matters can be viewed differently, but I certainly think it will operate badly if we do such a thing, more especially if this is to act in regard to itinerant schools as well. The Department will have such a number of applications as to be exceedingly troublesome, and result in the waste of the official's time.

" Mr. Bridges in referring to a statement made by one of the speakers said that within the last ten years no school with an average of eight had been closed. The Department keeps schools going that have only an average attendance of six. And we have been abused for keeping these particular schools in existence; but we will continue to do it, so long as we may be hopeful that the attendance will increase."

At the Annual Conference of the National Educational Association of America, held in Boston in July this year, the question of improving the conditions of schools in the rural districts was one of the items on the programme for consideration. The State Superintendent of Public Instruction for Nebraska, Mr. Fowler, was one of the speakers.

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The population of the State of Nebraska is a little less than that of New South Wales. Agriculture is the leading industry, stock-raising is only second in importance to agriculture, while fruit-growing and dairy and poultry farming are important and growing industries. The public school enrolment in 1896–7 was 266,317, the expenditure, £684,248. The State has passed a law which provides for the free education of pupils, who have not opportunities for advanced classes in their own districts, in neighbouring High Schools. Nebraska claims the lowest rate of illiteracy of any State in the Union.

Mr. Fowler favours the consolidation of small rural schools into a common Central School, to and from which pupils should be conveyed from every part of the district by means of covered vans or waggons. The plan of centralisation of schools in some form is adopted by several of the States. The chief merits of such a plan are: It permits of a better classification inasmuch as pupils work in graded schools under better methods; it affords an opportunity for more effective teaching in such subjects as drawing, music, and Nature study; it insures fewer and better teachers; it quickens public interest in the schools; the health of the children is better for they are less exposed to dangers arising from travelling in bad weather. Finally, the plan makes for contentment with farm life, inasmuch as boys and girls may secure through the common Central School the advantages of a higher education similar to those obtained by pupils living in large centres of population.

Mr. John T. Prince, the agent of the Massachusetts State Board of Education considers it is a matter of grave doubt whether some features of the rural schools consolidation plan should be made subjects of legislation. He is of opinion that it would not be well to fix by law the maximum distance at which pupils may be conveyed to school, the minimum sum for the transportation of each pupil, or the provision for the payment of a sum of money for each pupil or family living at a distance from the school, with the understanding that the father may or may not perform the service of transportation for which he is paid. He doubts the wisdom of closing schools for the purpose of consolidation on the grounds of economy, or because they are small, and contends that in any reform in the direction of consolidating the schools, the question of efficiency should be the only or chief determining factor. He considers that the most legislation needed is a general law permitting schools to be closed and the pupils conveyed at public expense, whenever in the estimation of the County Board it was desirable to do so.

The State Superintendent of Public Instruction, Mr. Bayliss, Springfield, Illinois, gave particulars of his experience in the consolidation of rural schools.

The State of Illinois has a population of nearly 5,000,000. The Public School enrolment in 1896–7 was 920,425; private, 138,542; expenditure, £3,267,110. The manufacturing industries are very extensive, and a large amount of mining and agriculture is carried on in some parts of the State.

The consolidation of the schools in the State of Illinois is in Mr. Bayliss' opinion the result of local conditions. In the State there are, he says, more than a thousand schools with fewer than fifteen scholars; six or seven hundred schools with less than ten scholars; and two hundred others where the attendance is less than five. He advocates consolidation, and points out that all that is asked in the State is permission to consolidate where it appears to be advisable. Approximately he believes the plan would give thousands of children a better chance.

Judging from the general tone of the discussion it would seem that the great aim of the Americans is to bring the child to the school and not so much to send the teacher to the child. The success of the Central School system has been established in some of the Eastern States of America, and in the State of Ohio. The first Central School in Ohio was opened in Kingsville Township, Ashtabula Co., in 1892. A cut of the school is shown on page . The picture shows the pupils leaving the school at the close of the day to enter the waggons. The cut on page shows the loaded waggons en route for home. Each waggon is provided with a hood and curtains which give effective shelter from winds and storms. The drivers, who also act as daily mail carriers, are as carefully selected as the teachers of the schools, and they are placed under a bond to faithfully perform their work.

The Central School, Gustavus Township, Trumbull Co., Ohio, takes the place of nine small schools. The school has four departments and four teachers as against nine in the scattered schools. The average daily attendance has increased in two years from 125 pupils in the nine small schools to 144 in the Central School. But a still greater success is seen in the large enrolment in the High School room of the institution. More than one-third of the pupils, boys and girls, are receiving the higher education, and at the same time all the advantage of the home, where they are able to spend their evenings with their parents secure from the temptations of town or city life. In scattered small schools High School education is impossible.

On the question of cost the Superintendent, Cook Co., Illinois, in recommending the scheme of Central Schools in Ohio to his own people in 1900, said:—"On the whole, the evidence seems to be that the school expense in the Ohio townships is about what it was before the consolidation; possibly it is somewhat greater, but the school facilities furnished, including the High School, the regularity of attendance, the absence of tardiness, the increased number of months during each school year, and the comfort of the children, are strong factors in estimating the expense. It would seem that the schools are at least twice as effective and the cost about the same."

Consolidation of schools, which has proved satisfactory in some American States, is practicable in some of our rural districts. It is necessary to give our boys and girls engaged with their parents in farm life an opportunity for obtaining an education something like what is given to town children, and the question to be considered is what is the best way of reaching this end? Consolidation of schools into one common Central School is one way. Another plan has been suggested in our own State, viz.:—providing scholarships from the small country schools to the nearest District Model Schools, which should be situated in every town of importance. The awarding of such scholarships might very well be entrusted to the Inspector at the time of his annual visit. In consultation with the teacher he could find out without the process of a minute examination what pupils have the intelligence and the desire to go further in their studies. Of the two schemes the plan of consolidation of schools is preferred to the plan of scholarships because (*a*) of the better preparation which the pupils receive under it, and (*b*) of the greater numbers which are likely to benefit by it.

One of the great purposes of the Commissioner's report is to educate the parents, as well as the children, of the State. At present the parents do not realise the difference between school and school; particularly is this the case in the country.

Parents in every small centre of population agitate until they get a school building, utterly unmindful of the fact that the multiplication of these small schools deprives their children of a lot of advantages appertaining to schools of a higher standard. The statement is often made that the city has all the educational advantages, and that the country has to be satisfied with a lower grade standard of instruction.

Some steps should be taken to bring home to the parents concerned the great difference between the standard of instruction in Provisional, or Ninth or Tenth Class Schools, and in that of a Third or Fourth Class School. If parents could be led to dispossess their minds of the idea that by getting a certain amount of Government money spent in small centres of population they were consulting the best interests of their children, a great reform would be effected, because it is not merely the establishment of any sort of school that means the advancement of their children's education, but rather the establishment of such a school as will result in their children being thoroughly taught to the standard of town schools.

If our Inspectors were instructed to continuously address the parents in the different centres on this point, the Commissioner thinks that the Department would have less applications for the establishment of small schools teaching the three "R's," and that these small communities would combine to secure the establishment of a school of higher standard, which would give their children equal advantages with those attending schools in the populous areas. In this connection the Department should undoubtedly assist parents in the matter of conveying children to schools so established.

One good concentrated school would supply the educational wants of a community which now has to rely on several small schools of no particular character.

The amalgamation of several small schools into a school of the Fourth Class, for example, would ensure, in the first place, the appointment of a head teacher of good attainments, and trained assistant teachers. With the better qualified teachers higher standards of work could be reached. A parent would

WAGGONS LOADED FOR HOME AT ONE OF THE OHIO CENTRALIZED SCHOOLS.

not be under the expense or inconvenience of sending his child from home if he wished to give him a good education. The local Central School could be so organised that there would be no general necessity for such a course. Many, if not all, the subjects taught in the city schools, could be taught in the Central School.

The establishment of Central Schools need not in any way clash with the District Model Schools. The former are intended to give certain educational advantages to children living away from towns, the latter are designed to give the best public school education to the children of a town and district. The District Model School no doubt would have a wide curriculum, and possibly would teach some subjects beyond the course of the Central School, and some parents, for very good reasons, might desire to send their children to it. To meet the wishes of such parents, it might be considered advisable to have a scheme of scholarships providing admission from the Central Schools, on the completion of the course by the pupils, to the District Model Schools.

On the mere question of cost, the Central School system would prove cheaper than the present arrangement of separate small schools, because the Department would be relieved of the necessity of building and repairing small schools, as well as of paying salaries to teachers, and providing school material. Even if the scheme cost more, the great benefit conferred upon the children in the matter of providing a higher education would warrant the change.

The Commissioner makes these recommendations because he feels convinced that the community would benefit considerably if our small schools were considerably reduced in number, and a more uniform quality of education given to the whole of the children of the State. At present, without doubt, the children of the towns and cities have many educational advantages over the children spread through the country.

The propositions, which were carried in the New South Wales Conference, outline methods for a very liberal treatment of schools situated in the sparsely populated districts of the State, and the action of the Minister of Public Instruction in putting into effect some of the best features of the resolutions is an earnest of his sympathy in the movement.

Sydney: William Applegate Gullick, Government Printer.—1903.

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

PRINCE ALFRED HOSPITAL.

REPORT OF THE PUBLIC SERVICE BOARD IN REGARD TO THE INQUIRY HELD INTO THE CAUSES OF THE ALLEGED EXCESSIVE COST OF THE ERECTION OF THE NEW PAVILIONS, UNDER THE DAY-LABOUR SYSTEM.

Ordered by the Legislative Assembly to be printed, 21 *January*, 1904.

Public Service Board, 50 Young-street,
Sydney, 25 November, 1903.

THE Public Service Board, having completed the inquiry which they have held, at the request of the Government, into the cause of the alleged excessive cost of the erection of two new pavilions at the Prince Alfred Hospital under the Day Labour System, have now the honor to submit the following report:—

ORIGIN OF THE INQUIRY.

In order that the position may be made clear, it is necessary that the circumstances which led to the inquiry being initiated should be briefly stated.

Investigation regarding the employment of temporary hands in the Public Works Department.

The Board had for some time been much concerned at the large number of temporary hands—inspectors, timekeepers, gangers, and others—for whose employment their sanction was constantly being asked by the Department of Public Works. The Public Service Act makes the Board practically responsible for these appointments, but they have found it impossible, owing to the widely scattered places where the men are employed, to exercise the effective control they would like, and have had, consequently, to rely largely on the responsible officers of the Department. The necessity for exercising the greatest care in these matters was repeatedly urged upon the head of the Department, but the Board at length felt it incumbent upon them to make inquiry, first, as to whether the staff employed was unduly large, and, if such were not the case, whether the various officers were carrying out their duties satisfactorily. They accordingly examined some of the principal officers of the Works Department, the first being the officer in charge of the construction of the New Central Railway Station, who gave some strong evidence as to the undue cost of the brickwork. This evidence the Board immediately brought under the attention of the head of the Department. They then proceeded to examine Mr. W. L. Vernon, the Government Architect. During his examination, Mr. Vernon made some statements in regard to the excessive cost of the stonework in connection with the new pavilions in course of erection at the Prince Alfred Hospital, which, he alleged, was due to the fact that the officers of the Department had no voice in the selection of labour, and that they were obliged to employ the men sent to them by the Stonemasons' Society, the Secretary of which practically had the nomination of all the stonemasons employed. The statements appeared to the Board to be of such a serious character as to warrant immediate and further investigation. They therefore brought the matter under the attention of the Honorable the Premier, and forwarded him a copy of the notes of the evidence taken. These notes were afterwards put in at the inquiry, and are marked "Exhibit No.

Statements made by Goverment Architect.

No. 1." The matter was then considered by the Government, and the Chairman of the Board had an interview with the Honorable the Attorney-General on the 5th of May, when Mr. Wise conveyed to him the wish of the Government that the Board would undertake a full inquiry into the whole system of day labour as carried out by the Department of Public Works. The Board willingly acceded to the wishes of the Government, but at a subsequent interview which the Chairman had with the Minister for Public Works, Mr. O'Sullivan expressed the desire that until the Government had come to a decision in regard to the whole question of day labour, the Board should limit their inquiry to the work in connection with the erection of the two new pavilions at the Prince Alfred Hospital, and the Board decided to comply with his request. Their inquiry, therefore, has been strictly limited to the work in question.

Government desire Board to hold full inquiry.

Inquiry commenced and temporarily suspended.

The inquiry was commenced on the 14th May, 1903, and was continued until the 9th June, when, in consequence of a report which appeared in the public press, of statements made by Mr. O'Sullivan, the Board determined not to proceed further until their position was made perfectly clear, and they had received an assurance that they would be left entirely free and unfettered in prosecuting the inquiry. The statements to which the Board referred were made by the Minister in reply to a deputation from the Sydney Trade Society of Painters, which waited upon him on the 10th June, with the object of laying before him certain matters relative to the employment of painters on public works.

The following letter, which the Chairman of the Board addressed to the Premier, shows the statements objected to, and the views of the Board on the matter :—

Dear Sir John See, Public Service Board, 50 Young-street, Sydney, 11 June, 1903.

My colleagues and myself are very much disturbed at the paragraph which appears in the newspapers this morning on the subject of the inquiries which the Board are holding in connection with the question of the Day Labour System. I enclose extracts from the papers, which state that, in reply to a deputation which waited upon him yesterday, the Minister for Public Works said :—

"He would be very glad to refer this particular case to the Public Service Board, as that body had taken on itself the authority to investigate other matters connected with the Day Labour question. He did not know who authorised the Board to do so. He did not, and he questioned whether the Board had a right to interfere with the policy of the Government. But the Board, having started an inquiry into the Day Labour question, he would take care that it was an exhaustive one. The inquiry must be done fairly and equitably. In order to make the Board's report complete, it must show to what extent contract prices had been added to by claims for extras, as well as by high demands for compensation, such as in the McSharry case and many others. All he wanted was fair play and justice in the inquiry. If it was not satisfactory, possibly a Royal Commission would be moved for in Parliament. As a matter of principle, he was in favour of the Day Labour System ; but in cases where it could not compete with the Contract System, he would have the courage to set aside the one he approved. He firmly believed, however, that in seventy-five out of every hundred cases the Day Labour System would be found successful."

Further, Mr. O'Sullivan stated :—

"The inquiry the Board had started must be carried out to a finish. He did not like the methods adopted for it, and if both sides did not receive fair treatment they might possibly have a Select Committee, or Royal Commission, appointed by Parliament to deal with the whole question."

The Board feel that if this is a correct representation of the Minister's statements it is perfectly useless for them to continue their inquiry. They desire to draw attention to the fact that the inquiry was instituted by them at the wish expressed by Mr. Wise on behalf of the Government—subsequently concurred in by Mr. O'Sullivan so far as the Prince Alfred Hospital is concerned—and the Board have proceeded with the matter with the earnest desire of getting such information as will assist the Government to come to a just determination on the whole subject.

The Board also notice that Mr. O'Sullivan claims the right to direct the Board as to the manner in which they shall conduct their inquiries, in spite of the fact that the law gives them complete independence in such matters, practically in the same way as judges of the Supreme Court. The Board feel sure that there must be some serious misunderstanding, especially in view of the fact that in a paragraph which appeared in the newspapers on 14th May it was stated that—"At the request of the "Premier, the Board is now extending its inquiries more especially into the question of the employment "of day labour at the Prince Alfred Hospital"—and, therefore, to relieve themselves of a very invidious position, they have determined to adjourn the inquiry. It must be admitted by all that unless the Board are left free and unfettered the inquiry will be of little or no value, and they cannot consent to proceed further on any other conditions.

The Board feel certain that these statements cannot have been made with your knowledge or approval.

Yours very faithfully,
J. BARLING.

The Hon. Sir John See, K.C.M.G., M.P., Premier and Chief Secretary.

Upon that letter Sir John See wrote the following memorandum :—

An informal inquiry having been begun, when it was brought under my notice I requested the Public Service Board to make a full inquiry into the whole matter, and I shall be glad if this be done.—J.S., 17/6/03.

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The Board also had an interview with the Premier on the matter, and having received from him an assurance that they would be left free and unfettered, with the object of a full investigation being made, they resumed the inquiry, which was accordingly proceeded with on the 24th June. It was continued at intervals, the Board sitting, as a rule, several times a week until the 23rd October, forty-eight sittings in all having been held, and forty-seven witnesses examined. Towards the conclusion of the inquiry, but before the examination of Mr. Oakden, the Board, in company with the different parties to the inquiry, paid a visit of inspection to the Hospital Pavilions, the Nurses' Home, and other buildings referred to during the inquiry. Inquiry resumed.

Power of the Board to hold Inquiry.

The powers of the Board to hold inquiries, apart from those relating to offences of officers, are contained in Section 9 (subsection 1) of the Public Service Act of 1902, which reads as follows:—

> As often as necessary to carry out the directions and provisions of this Act, and ensure the establishment and continuance of a proper standard of efficiency and economy in the Public Service, the Board shall, as far as practicable, personally inspect each department, and investigate the character of the work performed by every officer therein, and the efficiency, economy, and general working of such department, both separately and in its relation to other departments, and may, for such purpose, examine the permanent head of such department and such other witnesses as may appear to the Board to be necessary.

Before opening this inquiry, which they foresaw would be of an important character, the Board, in order to make their position perfectly clear, verbally asked the Honorable the Attorney-General to advise them as to their exact powers in an investigation of this nature. In reply, Mr. Wise forwarded the following memorandum, which is dated 7th May, 1903:—

> The Public Service Board have full power to hold an investigation on oath under Sections 9 and 10 of the Public Service Act of last year, with regard to the working of any Government Department, including the employment of persons temporarily engaged in the Service.
>
> If an inquiry has already been instituted without the evidence being taken on oath, and it is now desired that this course be followed, either the inquiry should be commenced *de novo*, or the new witnesses should be examined on oath, and the previous witnesses recalled and examined in the like manner.

It should be pointed out that the Board, for the purposes of the investigations they make, are really in the position, and have all the powers of a Royal Commission, as will be seen from Section 10 of the Public Service Act, 1902, which reads as follows:—

> The Board, for the purpose of conducting any inquiry or investigation under this Act, shall have the same powers and authority to summon witnesses and receive evidence as are conferred upon Commissioners by Letters Patent by the Royal Commissioners' Evidence Act, 1901, and all the provisions of the said Act shall apply to witnesses so summoned, and evidence so received and given, as completely and effectually as if such witnesses had been summoned, and such evidence had been received or given by virtue or under the authority of the said Act.

All the parties to the question at issue were fully represented at the inquiry. Mr. Vernon, the Government Architect, and Mr. A. S. Cook, First Assistant Architect, represented the Government Architect's Department; the Operative Stonemasons' Society was represented by Messrs. J. Grant, A. Thomson, and R. Dumbrell; and, at the outset of the proceedings, the Amalgamated Carpenters' and Joiners' Society was represented by Mr. W. Edwards, and the Operative Bricklayers' Society by Mr. W. Saunders. The representatives of the two last-named societies, however, withdrew shortly after the inquiry commenced, when it was seen that it would be limited to the stonework. Parties represented at the inquiry.

In order that evidence bearing on all sides of the question should be elicited, the Board thought it most desirable that the contractors of the city should also be represented, and they accordingly invited Mr. Thomas Loveridge, the President of the Master Builders' Association, to attend. This gentleman was present throughout the whole of the inquiry, and two other of the largest contractors in the city, viz., Messrs. Stuart and Pringle, were also present, as representing, with Mr. Loveridge, the interests of the contractors. By the evidence they gave, and the questions they put to witnesses, the Board were materially assisted in the investigation. It should Why representatives of contractors were invited to be present.

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be pointed out, also, that they were themselves subjected to the most rigid cross-examination by the representatives of the Stonemasons' Society. As a matter of fact, one party cross-examined the other, thus giving the Board a most complete view of all sides of the question, which they could not otherwise possibly have obtained. The contractors' presence at the inquiry was also of great value, in that they were able to give sworn evidence of the cost of work outside the Government Service, for it is evident that information of this nature supplies an important factor in coming to a determination as to whether the work under inquiry has cost more than it should have done, and this information could not well have been obtained in any other way.

Mr. Mant, of the Crown Solicitor's Department, also attended throughout the course of the inquiry, as representing the interests of the Government generally.

With the object of bringing out the full facts of the case, the Board considered it advisable to allow the parties to bring forward any evidence which they thought necessary. Consequently, a great deal of matter was introduced, which, at first sight, appeared to be extraneous to the question at issue; but it really was not so, with perhaps some trifling exceptions. The evidence taken is very voluminous, as may be seen by reference thereto, the questions numbering 18,443 in all.

Scope of the Inquiry.

Inquiry limited to stonework.

So far as the actual work is concerned, the inquiry has been practically limited to the stonework of the building, that being the portion of the work which the Government Architect specially represented as having exceeded proper cost. In connection with this, however, the whole question as to the advantage or disadvantage of the "Day-Labour System" came in, which necessarily formed an important part of the inquiry.

The following extract from the remarks of the Chairman, in opening the proceedings, will more fully explain the scope of the investigation (see pages 4 and 5 of evidence):—

> The scope of the inquiry is first to ascertain what results have been attained by the present system of day labour, as carried out at the Prince Alfred Hospital, and, if these results are unsatisfactory, to ascertain whether they have been wholly or in part the result of defects in management, or in the system which has obtained.
>
> At present we shall limit our inquiries to Prince Alfred Hospital work, and the Board think that the plan they propose to adopt in the prosecution of the inquiry will be the best to elicit the truth, as all sides will, by this plan, be fully represented.
>
> The Board do not intend to leave the question until everything that can be said on it has been said, and the subject fully exhausted.

No evidence was taken by the Board in regard to the cost of brickwork, the Department not being in a position to go into that portion of the work.

The carpentry and joinery work is forming the subject of a separate inquiry by the Board, which is being held at the request of the Minister at the instance of the Carpenters' and Joiners' Association, and will be dealt with in a later report.

Method adopted in conducting the inquiry.

In his opening address the Chairman stated fully the circumstances under which the inquiry had come about and the position of the different parties represented. The Government Architect was then requested to state his case, which he proceeded to do, and called his witnesses in support. Mr. Vernon and his witnesses were cross-examined by the representatives of the Stonemasons' Society and of the Contractors. Messrs. Grant and Thomson then went into the box to state their side of the case, in support of which they also produced witnesses. These gentlemen and their witnesses were also subjected to cross-examination by the other parties. The same procedure was followed by the Contractors' representatives, who went into the box, and they also called other contractors of the city to bear out their views. These gentlemen in turn underwent the closest cross-examination at the hands of the other parties.

Advice of expert witness obtained from outside the State.

Having in view the technical nature of the inquiry, and the importance of the uestion involved, the Board deemed it advisable to obtain the evidence of a special xpert witness to advise on the points at issue, and, with the concurrence of the Honorable the Premier, they obtained the services of Mr. P. Oakden, of the firm of Messrs.

Messrs. Oakden and Ballantyne, of Melbourne, who is a gentleman of acknowledged eminence in his profession and has had large experience. The Board thought it advisable to select a gentleman from outside the State, so that his evidence could not be questioned on the ground of possible pre-conceived opinions or prejudices, or on the ground of his being in any way interested in any of the parties to the inquiry. As a matter of fact, until Mr. Oakden came to Sydney to give evidence, he was unacquainted with a single person connected with the inquiry, with the exception of Mr. Davis, the Under Secretary for Public Works, whom he met on one occasion, and Mr. Cameron, who was sent to him in connection with the evidence. The evidence, so far as it had been taken, was sent to him and the further evidence was sent from week to week. After Mr. Oakden had had an opportunity of perusing the evidence Mr. Cameron was sent to Melbourne to go over the matter with him. He also took the exhibits and a list of questions which each party to the inquiry had been asked to formulate. This was done not merely to save time, but to give Mr. Oakden the fullest opportunity to study the questions in the light of the evidence, so that when the questions came to be asked of him he would be in a position to give carefully prepared answers. The questions, which covered the whole scope of the inquiry, were prepared partly by the Board, partly by the Government Architect, partly by representatives of the Stonemasons' Society, and partly by the Contractors' representatives. Several were also prepared by Mr. Mant, the legal representative at the inquiry.

On Mr. Oakden coming to Sydney, he spent a considerable time in examining the buildings which has been referred to in the course of the evidence as having a bearing on the Prince Alfred Hospital case, all parties being invited to be present at this examination and asked to point out any feature which they wished to specially bring under notice. When this examination was completed, Mr. Oakden was called before the Board and gave answers under oath to the questions put to him. He was then subjected to cross-examination by the various parties interested. It will thus be seen that every possible precaution was taken to ensure an impartial and thorough inquiry, and that this has been attained to the satisfaction of all concerned, is shown by the statements of the parties in their addresses to the Board at the conclusion of the inquiry.

Statement of the Facts connected with the Erection of the Buildings.

The following is a short account of the circumstances under which the erection of the new Pavilions was undertaken:

In September, 1901, the Legislative Assembly, on the motion of Mr. O'Sullivan, Minister for Public Works, decided to refer the proposal to make additions to the Prince Alfred Hospital to the Parliamentary Standing Committee on Public Works. Proposal referred to Public Works Committee.

In the following month the Standing Committee reported in favour of the construction of two Pavilions, each to consist of three wings facing north, south, and east, and having three stories and basement, to be known as "The Queen Victoria Memorial Pavilions," to be erected on the north and south side of the present block, at a cost not exceeding £45,000, and recommended certain alterations in the plans. This report was adopted by Parliament, and thereupon the necessary Act, called "The Prince Alfred Hospital Additions Act, 1901," authorising the construction of the additions, was passed. The Act provided that the estimate already referred to was not to be exceeded by more than 10 per cent. Authorising Act passed.

In December, 1901, Professor Anderson Stuart, representing the Hospital Authorities, called upon the Minister, and discussed with him the question as to whether the work should be carried out by day labour or by contract, and it was then agreed that the excavations and foundations should be carried out by day labour and a contract let for the superstructure. Proposal to carry out portion by contract and portion by day labour.

Representatives from the Trades Hall and the Builders' Association also subsequently saw the Hospital Committee and put forward their respective views on the matter. A suggestion was afterwards made by Professor Anderson Stuart that one of the pavilions should be carried out by day labour and the other by contract. In conjunction with the Government Architect and Professor Anderson Stuart, the Under Secretary for Public Works had several interviews with the President of the Builders' Association, with a view to arranging this scheme, but the Builders'

Association

Tenders invited for one pavilion.

Association decided not to tender for the work. The Minister, nevertheless, invited tenders for one of the pavilions. The office estimate for this pavilion was £29,000, and only one tender was received, that of H. Leahy, for the sum of £41,697. The Departmental Board of Reference would, of course, not recommend the acceptance of this tender, the amount of which nearly equalled the amount allowed for both pavilions, and, on the 12th July, 1902, the Minister decided to carry out the whole work by day labour.

In the meantime, however, the Government Architect, in conjunction with Professor Anderson Stuart, revised the design.

Plans revised.

After this revision of the plans Mr. Vernon estimated that the work could not be carried out for less than £58,305, but as only £49,500 was available, and it was to a certain extent problematical what the ultimate cost would be, the Minister decided to proceed with the work and at a later stage consider the question of the extra cost.

This brings the matter down to the time when the work was commenced under the Day-labour System.

Operations commenced under the Day-labour System.

Operations were commenced about the middle of December, 1901, the work of taking out the foundations being then started by day labour. A start was made with the superstructure about August, 1902, and contracts having been placed for the supply of Purgatory and Waverley stone, the work of stone cutting was entered upon, also under the Day-labour System, at the shed which had been erected for similar work in connection with the Fisher library buildings. In February, 1903, the timekeeper at the building submitted a return showing that the cost of the stone work up to that date was reaching 9s. 3d. per cubic foot. Upon this the Government Architect brought the matter under the attention of the Under Secretary in his memorandum, dated 12th February, which for the sake of clearness is quoted :—

Government Architect brings question of cost of Stonework under attention.

12th February, 1903.

Subject :—New Pavilion, Prince Alfred Hospital, cost to date of day labour on stonework.

From the Government Architect to the Under Secretary, Department of Public Works.

Mr. Cook has forwarded for my information a specially-prepared return, showing to date the cost of the stonework, including purchase of stone, wages, handling and setting, and it is with great disappointment that I have to report its very unsatisfactory character.

Investigation shows a result of 9s. 3d. per cube foot as being the cost of the work as fixed complete. In comparing this with current prices in the building trade it is necessary to give full credit for the use of "Purgatory" stone on the one hand, although on the other hand no charges have been added for establishment, supervision, and for wear and tear of plant.

In addition to this the work done, which particularly consists of base and string courses, window sills, and templates, is of a simple character, involving, comparatively speaking, only a minimum amount of labour.

I can most unhesitatingly affirm that the business arrangements for carrying on this work are in all respects equal to those of the best contractors' yards.

As regards the cost of 9s. 3d., reported above, even if the extreme allowance of 2s. 6d. per foot is deducted for working "Purgatory" stone above the ordinary Sydney sandstone, the net cost for the sake of comparison would still be 6s. 9d. per foot. In making comparisons I submit the following market rates, contracted for by well-known contractors and set forth in the bills of quantities herewith attached :—

Art Gallery.—Mr. Howie, stonework, including moulded cornices, 3s. 6d. to 4s. 6d. per foot.
Art Gallery.—Mr. Howie, stonework, including moulded pilasters, 5s. per foot.
North Shore Hospital.—Mr. D. Stewart, Pyrmont freestone, including all labour, 4s. 6d. per foot.

The excess at the Prince Alfred Hospital is a most marked one, and after mature consideration I can assign no other cause than the system under which day labour is employed, the regulations of which oblige a foreman-in-charge to accept for employment, with the exception of 15 per cent., all men sent to him through the agency of the State Labour Board. He has no choice, and it is inevitable that men of all grades of competency are necessarily employed.

From observation this condition of affairs tends to reduce the working capacity of the higher-class men to those of the lower grade, there being no incentive on the one hand to excel and on the other no fear of dismissal.

As regards the latter, it is quite true that the instructions give the working foreman full power to discharge, but his position is one of extreme delicacy and he naturally falls into such an attitude towards the Stonemasons' Union (which, in fact, controls the employment), as would be capable of the least hostile interpretation, and at the same time consistent with his duty to the Department.

Whether or not there is an inclination to reduce individual effort from the above cause, is a question difficult to answer. The unsatisfactory results of the work already reported upon, seem to imply that there is some ground for such surmise.

W. L. VERNON,
Government Architect.

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The Under Secretary submitted the memorandum to the Minister, but apparently no definite steps were taken until the matter came under the notice of the Board in the following April, during the interview with Mr. Vernon on the subject of temporary employment. As before explained, it was the statements made at that interview which brought about this inquiry.

Amount of stone cut at date inquiry was initiated.

The amount of stone which had been used up to the time the inquiry was initiated, and the cost, is as follows :—

5,843 ft. 8 in. cubic feet Purgatory,	@	10s. 11d.	=	£3,189 13 4
3,416 ft. 9 in. „ „ Waverley,	@	9s. 8d.	=	1,651 8 7
Total				£4,841 1 11

Day-labour System.

When system was introduced.

The introduction of the "Day-labour System" in connection with the carrying out of works by the Department of Public Works, dates practically from the year 1894. Prior to that year all the larger works undertaken by the Department were carried out under the Contract System, competitive tenders being invited in the usual way.

In the year 1894, during the term of office as Minister for Works of Mr. J. H. Young, it was decided to carry out certain additions to the building occupied by the Chief Secretary's and Public Works Departments, and, in view of the nature of the work, it was considered that it could be done more conveniently and economically by day labour than by employing the services of a contractor. The result of this experiment was alleged to be so satisfactory that in June, 1895, the Government Architect, in reporting upon the proposal to carry out certain contemplated alterations and additions to the Government Printing Office building, stated that he considered it would be quite justifiable to extend the operations of the Day-labour System still further, and to carry out that work in the same way. This was approved by the Minister, and the work was accordingly carried out by day labour. Since that date the system has been adopted to a considerable extent in connection with the erection of buildings under the supervision of the Government Architect in the metropolis, although, at first, it was confined to works in connection with alterations to existing buildings.

System extended during the administration of Mr. O'Sullivan.

In the other branches of the Public Works Department the use of the Day Labour System was practically confined for some years to works initiated with a view to relieving men temporarily out of employment, but on the accession to office of the present Minister for Public Works in 1899, the system was extended in other directions, until, at the present time, nearly the whole of the work of the Department, including the construction of Railways, Sewerage works, Water Supply and Harbour works, is being carried out by day labour. The magnitude of the operations may be gauged by the fact that the expenditure on wages alone during the year ended 30th June, 1902, amounted to nearly one million pounds. The exact figures are £998,649.

This alteration in the policy of the Department rendered it necessary to adopt some system under which men desirous of obtaining employment on public works could be registered and classified according to their different trades or avocations, and also in order that the officers in charge of works could readily ascertain the amount and class of labour available.

Appointment of Labour Commissioners.

The first step in this direction was the appointment of Labour Commissioners. These Commissioners commenced operations on the 3rd April, 1900. The powers given to them were such as to allow of their registering the names of all men seeking employment, of classifying, and of sending them out to works as required.

Establishment of State Labour Board.

On the 20th November, 1901, it was decided by the Minister for Public Works to establish a branch of the Bureau at the Trades Hall, where only members of Trade Unions would be allowed to register; also a Departmental Board, to be designated the State Labour Board, which would control the registration of all labour required on Government works (other than relief works), and which would have exclusive power with regard to the engagement of such workmen, the registration of casual labour to be employed on relief works being confined to the Labour Bureau.

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This Trades Hall Branch of the Labour Bureau and the State Labour Board came into existence simultaneouly on the 4th December, 1901, and on the 24th February, 1902, in the following year, the branch was formally taken over by the State Labour Board, and has since been worked by that Board.

The introduction of the "Rotation System" in connection with the employment of day labour, which is more fully dealt with in another portion of this report, dates from the establishment of the State Labour Board in December, 1901.

Day-labour policy.

The policy of the Department in carrying out works by day labour has been the subject of criticism at various times since its introduction. It has been claimed, on the one hand, that it has resulted in economy in the expenditure of the Department, and, on the other hand, that in some cases at any rate, where the system has been used, excessive cost has resulted. So far as the Board are aware, however, this is the first occasion where inquiry has taken place as to the actual cost of works under the system.

During the course of the inquiry some of the principal officers of the Department were asked to express their views on the matter in the light of their experience in carrying out works under this system, and some valuable evidence on the subject was elicited.

Views of Officers in regard to system.

Mr. Vernon, the Government Architect, stated that he was not in favour of the continuance of the Day labour System while there was interference and consequent dictation from the Stonemasons' Society (q. 777). He further said (q.773) that under the system "the State get first-class work, but it does not necessarily get better work than is given by first-class contractors, take the Art Gallery."

Mr. A. S. Cook stated that "prior to the introduction of the Rotation System work done under the Day labour System was generally satisfactory" (q. 1039). He further said (q. 1040), "You can always rely upon the day-labour work being the best." On being questioned by Mr. Stuart, he said (q. 1042) that there was no reason to complain of the cost of the work previous to the establishment of the Rotation System, but he admitted (qs. 1046–53) that no accurate data was kept of the cost of the works prior to the commencement of the work of the Prince Alfred Hospital.

Foreman Ryce stated that under the Day-labour System (*i.e.*, prior to the introduction of the Rotation System in connection therewith) he got as good results as if he had been working for a private employer (q. 2982). On being questioned, however, by the representatives of the contractors, he admitted he had no data as to the cost of the different works, but merely judged by the class of men he had employed, and the way in which the men worked.

During the course of the inquiry the cost of the stonework on a number of the different buildings which had been carried out by the Department under the Day-labour System during the last few years was carefully taken out by two officers of the Public Works Department, who were specially detailed for the purpose. The figures are given on page 18. It is worthy of notice that the prices are much higher as compared with the rates for works carried out by contract, which have been sworn by the contractors to be the prices at which the stonework was done (see page 22).

Contractors' views on day-labour.

The representatives of the contractors are, perhaps, not unnaturally strongly opposed to the Day-labour System, and they sought to show that it is an unsatisfactory system, and not economical. A considerable amount of evidence was given on this point. The following quotations therefrom shortly show the views of the contractors:—

Mr. Pringle said, in answer to Mr. Stuart:

11178. *Q.* Do you think, from your experience as a Clerk of Works in the Government employ, and as a builder with very considerable experience in this city, that the Day-labour System is better than the Contract System? *A.* No.

11179. *Q.* Do you think now, coming to the matter before us, that the rotation system at the Prince Alfred Hospital is responsible for the whole cost of the work? *A.* No.

11180. *Q.* Do you think that there are other factors? *A.* Yes.

11181. *Q.* Will you give us some of your reasons for holding that opinion? *A.* Well, of course, my reasons for holding that opinion are simply the reasons which I have for holding an opinion that the day labour is a costly system, not only at the Prince Alfred Hospital, but everywhere else. There is a good deal of nonsense talked, I think, about the contract system by people who ought to know better; because it seems to me so absurd to think that if you were to abolish the building of houses or any kind of

of works by contract, that this is going to make such a big difference in the position of the men or anything else. I need not tell you, gentlemen, that the contract system is the basis of our whole commercial system in New South Wales, and all the rest of the world. You cannot put an end to the contract system. You can put an end to a little bit of it, but to say that is going to make things better and cheaper is simply begging the whole question. I look at it shortly this way: There is a document, a contract, in the four corners of which you can bind any builder down to carry out any piece of work practically under any conditions you like. You make him stake pretty well all the money he has got perhaps. If he does not carry it out, you will get somebody else to carry it out for him. In that way you hold this one man responsible for the erection of that building according to the plans and specifications and all the rest of it. The work, then, of the architect is simply to see that he does it—simply to see that he carries out the design and puts in the work. There are two parties to the bargain; and, if either of them does not care to carry it out, there is another party to step in and see that it is carried out—the law. It seems so simple, and, so far as economy is concerned, there can be no question about it. Under day labour you ask one man to do half-a-dozen men's work. You see, the architect has a hundred and one things to think about—say, the Government Architect; he has matters of administration, and not only one building, but dozens, and you ask him to take the position of the contractor, the other man, and carry out the work. Now, it is perfectly evident that he cannot do it; he has to delegate his authority to someone else. Well, say he delegates his authority to Mr. Cook—in this instance the Assitant Architect. Well, Mr. Cook has work, I know; my experience of the Government Architect's Office told me that the men work, and work very hard. They did then, and I have no reason to doubt that they do now. And that means that someone else has to do it; he delegates part of it to someone else, and he to someone else, and so on. That is not the case with the contractor. You have a man who is his own paymaster very often; he administers all the different parts of the work; he see that one trade comes in at the proper point, and all that; orders materials: keeps things going on; keeps an eye on the labour and an eye on everything else, for a very good and sufficient reason—it is a matter of self-interest. He has entered into a bond to do that thing, and he knows that if it does not come out right it is a serious matter. And that is undoubtedly such an incentive to any man, whether he has much ability or little, that it makes him do his very best; and, as I said before, it is to the interest of the other party to the bargain, and his duty to see that the contractor does his best, and what he has bargained for.

Mr. Stuart said (q. 12315) that he was opposed to the day labour system, because, in his opinion, it was economically wrong.

The views of the principal officers of the Department who gave evidence, and who had experience in carrying out works under this system, must be regarded as of value.

Views of the Under Secretary for Public Works.

Mr. Davis, the Under Secretary, who, in his present position and that which he occupied as Engineer-in-Chief for Sewerage, has been intimately connected with the carrying out of works under this system since its introduction, said (q. 15457) that it was difficult to say whether the results of the day labour policy had been satisfactory from a financial point of view. He further said (q. 15566):—"I say at once, unless day labour can compete with contract work, then necessarily it must go to the wall. There is no particular luxury in carrying out work by day labour."

Views of the Engineer-in-Chief for Railway Construction.

Mr. Deane, the Engineer-in-Chief for Railway Construction, said, in answer to Mr. Vernon:—

11538. *Q.* Take the country railway works, are you prepared to state before this inquiry your opinion as to the results of work in the country districts, the monetary results? *A.* My opinion as to the work in the country districts is that it has been on the whole very satisfactory.

11539. *Q.* What class of work is it in the country? *A.* It is largely of the labouring class.

11540. *Q.* Unskilled work? *A.* And a certain amount of skilled work—bridges for instance. The station buildings are always let by contract.

11541. *Q.* Have you carried out any building erections by day labour at all? *A.* No, only bridge work. The bridge work we mostly let in small contracts for the labour only.

11542. *Q.* Would you recommend the erection of station buildings by day labour in the country? *A.* I should look upon it as very troublesome, and would always prefer to have them carried out by contract.

Again, in answer to question 11551, he said:—"When I have reported on the results of day labour, I have always very carefully reported that it has been a success in the country, and made no remark about the town." On being asked whether he agreed with the views expressed on the subject by Mr. Davidson, the Inspector-General of Public Works in Victoria (see q. 6907), which was read by Mr. Mant. He said—(q. 11703):—

No, I do not altogether agree with Mr. Davidson. I mean to say this, that there is no reason why day labour under Government should have that bad effect on the men; only, if the responsibility of the heads is taken away from them. Then I would like to say, Mr. Chairman, that when the first day labour I carried out was carried out under Mr. Young, Minister for Works—he was very anxious to introduce day labour, and he asked me to look into it—I said at the time that I did not think there would be any difficulty about it. He asked me to consider it, and I recommended that it should be done, on consideration that I should have a fairly free hand to carry out the work. A pretty large term, of course; it implies the absence of political pressure and so on, and complete "say" as to how the men are to be employed, and what men are to be put on. And if that had been carried out, and could be carried out now

now, in the metropolis as well as elsewhere, I think the day labour would always be a success. I am quite certain that we do not necessarily get the "Government stroke" from a man if he is properly looked after. If you have competent men to look after him, you can get a good day's work; but if the men are bolstered up in their attempts to reduce the quantity of work done, by political influence or otherwise, you certainly will not get good work, and day labour will not be a success.

Views of Mr. Wade, Principal Engineer for Water Supply and Sewerage.

Mr. Wade, the Principal Engineer for Water Supply and Sewerage, said, in answer to a question put by Mr. Stuart (q. 12613):—

12613. *Q.* . . . . . Do you turn out the work under the day labour system satisfactory to yourself as regards cost? *A.* In some cases, but not in others. Some of the day labour work that we do, such as the construction of these low-level sewers about Sydney, being mixed up with all sorts of obstacles, which you do not know of until you come across them, I think the day labour system is the only way of carrying them out, and it is a most difficult thing for a contractor or anybody else to estimate the cost beforehand. That is a work that I think can only be satisfactorily carried out by day labour. I think myself, given a perfectly free hand in the engagement of labour and gangers, that we could carry it out satisfactorily as to cost in most cases.

Mr. Wade further said (qs.12707-8) that he was in favour of the day labour system; but he was also in favour of the foreman having a free hand in the engagement of labour. He said (qs. 12815–6–7) that if the day labour system had come to stop he would recommend certain changes in carrying it out, one of which was the creation of an independent board, free from political control.

Views of the Engineer in charge of the Cataract Dam works.

Mr. Symonds, Engineer in charge of the Cataract Dam works, where a large amount of unskilled labour is being employed, stated that he was in favour of the day labour system (q. 13152).

Day labour in Victoria.

Mr. Marsden, the Government architect in Victoria, stated that the day labour system had not been adopted to any extent in Victoria (q. 14363), and that practically no work under the day labour system was carried out by the Victorian Public Works Department (q. 14591). He thought it was not economical (q. 14593), and he believed in the contract system (qs. 14609–10).

Opinion of the Minister for Public Works.

Mr. O'Sullivan, the Minister for Public Works, in his evidence before the Board, speaking of the day labour system, said:—"It depends, in my opinion, upon two forces for its success; the first is to have overseers who will do their duty, and the second is that there should be no political interference" (q. 16006).

The views of the Stonemasons' representatives on the subject are best shown by the following quotation from the address of Mr. Thomson at the conclusion of the inquiry:—

. . . . . Mr. Grant and myself believe that State enterprise, to be successful, whether it be State enterprise in the carrying out of public works without the intervention of the contractor, or State enterprise of a reproductive character, the administration must be clean; I mean by clean administration that there must be an absence of political and any other kind of interference. The officer placed in charge of the particular enterprise should have absolute control. He should be held responsible for the efficient carrying out of the particular work. There can be no efficiency where political and other influence interfere with control; that is our attitude. We say, notwithstanding all that may be said against the rotation system, taking it all through, it is the best system yet devised to combat political and other influences. Of course it is not for me to suggest any alteration of the existing system, but to us it appears necessary that steps should be immediately taken to place State enterprise of every kind on a footing whereby it would be economically supervised. Day labour, so far, is a thing which has grown up from small beginnings. It has been carried out in a haphazard way. No principle has been laid down for its control. I am not casting any reflection on Mr. Vernon or his officers; what I mean is there has been no system laid down by the Department as to how it should be carried out, and we think some statutory or other kind of authority should be devised to control State enterprise of this kind.

Suggestion that introduction of day labour system was the result of excessive claims by contractors not borne out by fact.

The suggestion that the introduction of the day labour system was the result of excessive claims made by contractors for extras does not appear to be borne out by fact. As already stated, the system was first introduced because it was considered that it would be an advantage in connection with certain special works which were being undertaken to an existing building, which was in occupation at the time. There were at that time conditions in force in connection with contracts in the Department of Public Works, which had been drawn up after the notorious McSharry case, and which would prevent improper claims being made. These conditions are, the Board understand, in force at the present time, and since their introduction there has been no difficulty in the Works Department with regard to extras on contracts. In order to make this clear, the Board examined the Under Secretary for Public Works, having first given him notice that they intended to question him on this important point, so as to give him an opportunity of answering the questions in a full and complete manner.

Mr.

Mr. Davis, at the meeting on the 28th August, submitted a memorandum on the subject, which is put in and marked Exhibit No. 155. In submitting it, he said (see Q. 15418):— Memorandum submitted by Under Secretary as to effect of General Conditions brought into operation after McSharry Case.

It has been prepared very carefully, reviews all the circumstances connected with the case, compares the General Conditions that were attached to that contract with the General Conditions that are attached to all contracts made by the Public Works Department at present, and the conclusion come to is this:—

"It seems to me, in conclusion, that having regard to the very material alteration in, and additions to our Conditions of Contract, made since the McSharry case, it is not, in my opinion, possible for a contracter to now successfully establish claims in a Court of Law, similar to those made by McSharry under his contract herein referred to. Some of the claims made by him would now be successfully shut out by such alterations and conditions, whilst others of the claims would be dealt with—not by resort to a Supreme Court action or to an Arbitration submission—but by the Engineer or Board of Reference, as the case may be, subject, under certain conditions, to a claim involving a question of law being referred by the Board of Reference to the Supreme Court for final decision." It is written by a solicitor in the Works Department named Cocks.

To make quite sure on the point, however, the Board decided to submit the case to the Crown Solicitor, and, in reply, Mr. Tillett forwarded the following opinion:— Opinion of the Crown Solicitor on the New General Conditions.

Gentlemen, Crown Solicitor's office, Sydney, 17th September, 1903.

In answer to the inquiry contained in your Secretary's B.C. communication of the 4th inst., concerning the Day Labour Inquiry, and Mr. Cocks' memorandum on the McSharry case, I have the honor to inform you that when Mr. Cocks was here ascertaining the outcome of the points raised as legal defences during the progress of the McSharry case, it was explained how the alterations came to be made in the Conditions of Contract.

At the conclusion of the case, the Department, at the suggestion of this office, seized the opportunity of availing itself of the special knowledge of the subject acquired by Mr. Atlee Hunt, who had been counsel for the Crown at the Arbitration; and Mr. Hunt was intrusted with the work of entirely revising the General Conditions with the express object of preventing claims being kept in the background to be sprung upon the Department at the conclusion of the contract—also, in some instances, of declaring that the Contractor shall have no right of action at all in respect of certain matters.

It is believed that the new Conditions will be found to have the effect of rendering a repetition of the McSharry case practically impossible.

I have, &c.,
JNO. V. TILLETT,
Crown Solicitor.

The Public Service Board, Sydney.

It is clear to the Board that no sweeping condemnation of the Day Labour system is reasonable. As Mr. Deane and others have pointed out, the system in some cases is not only practicable, but desirable, and the Board are not prepared to dispute this. In cases where a large amount of unskilled labour is necessary, the Government may gain by the adoption of the Day Labour system, but on the distinct understanding that the officers in charge are left perfectly free in the selection and discharge of the men employed, and also that they should be untrammelled in their control of the work by any dictation whatsoever. In cases, however, where buildings and constructions of a complicated nature are concerned, the Board think it will be found that the contract system is the best, but even here no rigid rule can be laid down—each case must be dealt with on its merits, to be determined by the Commission of Management, which is recommended elsewhere. General condemnation of Day Labour system unreasonable.

The system under which men are now engaged for works, is as follows:— System of engaging men.

The officers in charge are allowed to select 15 per cent. of the total as special hands in the various trades. The balance (85 per cent.) are supplied in equal proportions from the applicants on the books of the State Labour Board, and the Trades Hall Registry. An exception to this rule, however, was made by the Minister in regard to stonemasons. In the case of these tradesmen, the Minister approved of the registration of applicants for work being made with the secretary of the society, who submits the lists of names to the State Labour Board. The only restriction imposed by the Minister is that the secretary shall guarantee that the men nominated are out of employment. The result of this is to place the nomination of practically all stonemasons for employment on Government works in the hands of an irresponsible individual. This is shown by the following extracts from the evidence. In the case of stonemasons, secretary allowed to submit list men.

On page 103, Mr. Vernon, the Government Architect, in answer to a question, said:— List of men employed submitted by secretary of society.

854. Mr. Stuart. *Q.* Do you know the system of the Board in selecting employment? *A.* Do you mean for stonemasons?

855. *Q.* Yes. *A.* Yes, for stonemasons they receive a list from the secretary of the Operative Stonemasons' Society, and they send the first on that list to whichever Government work requires a man.

Mr.

Mr. Cook, on page 20, in reply to the Chairman, said:—

146. *Q.* Did the State Labour Board select the men? *A.* They sent a man from the list.
147. *Q.* What list? *A.* The list they had supplied from the Operative Stonemasons' Society.
148. *Q.* The list the State Labour Board would work on would be the list supplied by the Stonemasons' Society? *A.* Yes.
149. *Q.* They would send according to rotation from a list supplied to them practically by Mr. Grant? *A.* Yes.
150. *Q.* Mr. Grant supplied a list of those men who had to be taken on? *A.* Yes.

Mr. W. A. Smith, Metropolitan District Engineer for Roads, and a member of the State Labour Board, stated, in answer to a question (page 1519):—

15123. Mr. Mant: *Q.* . . . . are the stonemasons examined in any way as to their competency by the State Labour Board? *A.* No, they come through the society.
15124. *Q.* As long as they are sent by Mr. Grant that is sufficient for the State Labour Board? *A.* Yes.

Competent and incompetent men have to be taken on and given trial.

Under this system men have to be taken on whether known to be competent for the work required of them or not; and their suitability, or otherwise, can only be determined after they have been given a trial. On this point Mr. Ryce, the foreman, says, (page 26 of evidence):—

230. . . . I have to take the men as they are sent to me from the State Labour Board, and of course when a man is sent to me, I am supposed to put him on and give him a trial. I must give him a few hours or a couple of days work before I can discharge him.
231. *Q.* Why is that? *A.* Simply because if I discharge the man without a trial, I would lay myself open to the charge of not giving the man fair play.
232. *Q.* On the part of the union? *A.* Not only on the part of the union, but he could easily make a complaint to the Department and come back again, as far as that is concerned. I do not say it would be done, but it could be done.
233. *Q.* You think it is a fair thing to give him a trial? *A.* I certainly do.
234. *Q.* Has a man ever come to you, whom you were aware was incompetent, and yet you have had to give him a trial? *A.* I have known many men to come to me. I would not give the man whom I knew to be really incompetent the same trial as I would give others. I would put them on a piece of work, and if they did not do it, they would have to take the consequences.
235. *Q.* Have you ever had incompetent men sent to you whom you knew were incompetent? *A.* Yes.
236. *Q.* Sent to you through the union? *A.* Through the State Labour Board.

Secretary of Society admits sending names of men whether competent or not

Mr. Grant, the secretary to the Stonemasons' Society, admits (*see* evidence, page 663), that the names of men, whether competent or not, were sent in.

6823. *Q.* Under the rotation system, is not any man, good, bad, or indifferent, forced on him? *A.* Yes they go on.

Again, on page 672:—

6923. Mr. Mant: *Q.* Have you ever refused to send a man's name in, in a single instance because he was incompetent—I mean your society? *A.* No, I cannot recollect any instance.

Prejudicial effect upon progress of works.

A large amount of evidence was given to show that this method had a prejudicial effect upon the progress of the works, and seriously interfered with the authority of the officers in charge.

Mr. Vernon stated (*see* evidence, page 15):—

71. Mr. Delohery: *Q.* It means then if you had power to select your own men, you would get better results? *A.* Yes.

Loss of control.

72. Mr. Barling: *Q.* In your opinion, these bad results come about through your not having the power to select your own men? *A.* That is my opinion. The fact that we have no power to select the men means that that, to a very large extent, we have not power over the men. There is a loss of control.
73. Mr. Wilson: *Q.* Even if the men were good? *A.* Yes, even if the men were good there is a loss in control. I might also inform you that Mr. Grant told the Minister in my presence that some of men had contempt for the foreman and would not speak to him, and that they refused to receive instructions from him as to how they were to do their work.

Foreman reluctant to discharge unsatisfactory men.

74. Mr. Barling: *Q.* I think you said your foreman, Mr. Ryce, had a reluctance to discharge men, although they were not satisfactory? *A.* Yes.
75. *Q.* What was the reason? *A.* Mr. Ryce is a man who attends to his work, and who is anxious to be on good terms with those he works with. If Mr. Ryce discharged all the men below a certain standard, not necessarily poor workmen, his life would not be worth living.
76. *Q.* You mean to infer that the pressure is so severe on Mr. Ryce that he is not able to fulfill his duties properly? *A.* I would not say that. He is fulfilling his duties, but the results are not satisfactory.
77. *Q.* Is not that the same;—I want to understand exactly what you mean, Mr. Vernon? *A.* Mr. Ryce is fulfilling his duties up to the hilt, but he is met with great difficulties.
78. *Q.* These difficulties arising out of—? *A.* From the fact that he has no control over the men.

Mr.

Mr. Cook stated (page 19 of evidence) :—

121. Mr. Mant: *Q.* In your opinion is that system of selecting men to be employed a sound one? *A.* No; I think not.

122. *Q.* Why? I will ask you first, as an expert, and then as to your personal knowledge of its effects. First as an expert? A. A man working must of necessity have to look to someone; it is his living, his reputation. He has to make his reputation, and he has to keep it when it is made. If he is appointed to a work and he starts under a man he does not know, or will not know, it seems to me it must be wrong.

123. *Q.* You mean he must obey his foreman? *A.* A man must be under the control of the foreman.

124. *Q.* Under absolute control? *A.* Yes.

125. Mr. Barling: *Q.* What you mean, Mr. Cook, is that if a foreman has not the selecting of his workmen, he has not the same control over them as a man who is able to select his men? *A.* Exactly.

Again, on page 229 :—

2100. Mr. Delohery: *Q.* You say you do not get value in work for the money? *A.* That is what we say, that the work is costing too much.

2101. *Q.* And you could get better value from better men? *A.* We could get better value from the same men if we selected them; that has a great deal to do with it.

Mr. Ryce, the foreman, said (*see* page 275) :—

If foreman had free hand in selecting men could get better results.

2622. Mr. Barling: *Q.* Put it another way; supposing you had the choice of your masons, would the average amount of work be increased? *A.* I could get better results.

2625. *Q.* But if you had a free hand, you would be able to get on an average better men, and, therefore, better results? *A.* Yes.

These contentions were, to a large extent, borne out by statements of other officers of the Works Department. Mr. Deane, the Engineer-in-Chief for Railway Construction, who was questioned on the subject, said (page 1141 of evidence) :—

Mr. Deane of opinion that officers should have complete control.

11546. Mr. Vernon: *Q.* Of course you are aware that your officers can only select 15 per cent. of the men they employ now. What effect has that, in your opinion, on the buildings? *A.* Well, it would be very difficult to say. It is reported that the men do not work as well as they would if the officers had complete control over the selection.

11547. *Q.* Are you in favour of your officers having complete control over the men? *A.* I think they ought to have complete control and not be dictated to by anybody outside the Department.

11548. *Q.* Is it possible to compete with contractors if your officers have to be dependent upon others for their men? *A.* Not thoroughly. I am quite sure that contractors would never submit to any dictation.

11549. *Q.* I presume, therefore, Mr. Deane, you are in favour of the power and responsibility going hand in hand in the same officer? *A.* Certainly.

11550. *Q.* It is claimed here that the responsibility in some cases is left to the officer, but the power has gone elsewhere? *A.* I think to a large extent that is so.

See also evidence of Mr. Wade, Principal Engineer for Water Supply and Sewerage (page 1247) :—

Mr. Wade of same opinion as Mr. Deane.

12512. *Q.* Even under those circumstances, you consider that the work is losing through the system? *A.* I consider if the foreman and engineer had the free selection of their own labour it would make a difference of at least 10 per cent. or 15 per cent. in the work.

12829. *Q.* Then your objection to the rotation system is that it has largely increased the cost of the work to the country? *A.* Unless we have as free a hand as the contractors we cannot expect to compete with them.

Mr. Symonds, Resident Engineer, Cataract Dam, stated (page 1309) :—

Opinion of Mr. Symonds.

13078. Mr. Grant: *Q.* Don't you think it is very unfair that the State works should be monopolised by a few to the exclusion of all others? *A.* As far as I can see, if the selection of men was left with the engineers, I think the men would have the fairest deal they would ever get. It practically amounts to the same thing as the contractors, and I do not think it would make any difference whether the Government had six jobs or six contractors.

Mr. J. H. Marsden, the Government Architect of Victoria, who was called by the Department as a witness, and whose testimony should be perfectly independent, said (page 1444) :—

Mr. Marsden, Government Architect of Victoria, thinks officer responsible should have control over engagement of labour.

14365. *Q.* In the established Day Labour system, in your opinion, who should have control over the engagement of the labour? *A.* Well, I think the man who is responsible, and as far as buildings are concerned, I take it the Chief Architect is responsible.

14367. *Q.* What do you say to a state of affairs in which the responsibility is remaining with the officers, but the power is taken out of their hands? *A.* Well, the least I can say is, in my opinion, that it is undesirable.

Argument that as officers have right to discharge unsatisfactory men, they therefore have practically right of selection.

It was urged that, inasmuch as the officers in charge had the right to discharge unsatisfactory men, they therefore had practically the right of selection, and that little harm could result in giving a man a trial. But it must be remembered that the regulations of the State Labour Board gave the right to a discharged man to appeal against such discharge, first to the architect in charge of the work (which, in this case, was Mr. Cook), and, if still dissatisfied, then to the State Labour Board. The following portions of evidence on this point may be cited.

Mr. Cook (page 201) says :—

Right of appeal against dismissal.

1802. Mr. Thomson: *Q.* Have you not the full power of dismissal? *A.* It is comparatively worthless. The power we want is the power of putting on and selecting.

(Page 200.) 1797. Mr. Delohery: *Q.* What you object to is having to take them on whether they are good or bad? *A.* We object to having to take indifferent men, whom our trained foremen know to be indifferent, when there are good men walking about.

The views of the contractors on the point may be seen by the remarks of Messrs. Howie, M'Leod, and Wall.

Mr. Howie said (page 964) :—

9792. Mr. Vernon: *Q.* Would your view not be altered if the men discharged could appeal from the foreman altogether? *A.* That is a different thing altogether. If the men could appeal to somebody else the contractor would not have the control of the work.

Also (page 1006) :—

10293. Mr. Stuart: *Q.* Do you still hold to the answer you gave to Mr. Grant that the power of dismissal seemed to cover everything? *A.* The power of dismissal does not really exist if the right of appeal also exists.

Mr. M'Leod said :—

10035. Mr. Vernon: *Q.* But if he has the knowledge that a desire is expressed that every man dismissed shall have the right of appeal, would not the foreman be handicapped? *A.* Yes, certainly.

Mr. Wall stated :—

Right of appeal interferes with discipline.

10724. Mr. Vernon: *Q.* In your opinion, does the right of appeal interfere with the discipline of a stonemasons' shop? *A.* Yes, I think it would.

10725. *Q.* Have you ever heard of any such instance except in New South Wales? *A.* I have never heard of it.

10726. *Q.* Anywhere, all over the world? *A.* Never heard of it.

Foreman Ryce.

Mr. Ryce, the foreman over the stonemasons, came in for a considerable amount of criticism as to the way in which he discharged his duties. With regard to his qualifications, it was stated that he had held a similar position in the Department for seven years, having been upon day-labour works the whole of that time (see his answer to Q. 2245). He had previously been employed under contractors, and has had seventeen years' experience in all. Both the officers of the Department and the contractors bear testimony to his qualifications.

Previous experience.

Mr. Cook, on this point, said (*see* Q. 115) :—

115. *Q.* Do you consider, in your opinion, that Mr. Ryce is a competent man? *A.* Yes. Mr. Ryce has carried out some of the best, if not the very best, works in Sydney. There is nothing better than the work Mr. Ryce has carried out.

Testimony of Mr. McLeod.

Mr. McLeod said he was "a most reliable and capable officer as foreman." (*See* Qs. 11,355–6.)

Mr. Howie's opinion of Ryce.

Mr. Howie said that Ryce was a first-class man (Q. 10,349), but he did not work for him as a foreman (Q. 10,350).

Criticism of Ryce by representatives of Stonemasons' Society.

Mr. Thomson admitted that he had no previous knowledge of Mr. Ryce (see his answer to Q. 8164), but both Mr. Grant and Mr. Thomson, from the many questions they put to witnesses, endeavoured to show that Ryce had not displayed sufficient "backbone" or "grit" in the performance of his duties. Their argument apparently was that, had he displayed more firmness, the difficulties alleged in regard to the discharge of incompetent men would not have occurred. It is quite possible that had the foreman displayed greater independence and firmness some of the trouble might have been avoided; but, under the circumstances which existed, it appears to the Board that it would be impossible to get a foreman to act in the way which Messrs. Thomson and Grant apparently suggest the foreman should have acted.

(In this connection reference is made to the answers of Mr. Thomson to questions 8,190–1; also 8,199–22.)

On

On another occasion Mr. Thomson, when being questioned in regard to political influence in the discharge of men, was asked to put himself in the position of the foreman under such circumstances, and he replied (*see* Q. 9084) that if such a thing occurred he "would go to the Minister and have it out on the floor." The Board think, however, that no foreman should be placed in such an invidious position.

Estimate for Stonework.

One of the important points upon which the inquiry turned was as to the correctness or otherwise of the estimate for the stonework, which was prepared in the Department before the work was commenced, as it was upon a comparison of the actual cost with this estimate that the allegation of excessive cost was based. The following explanation of the method of preparing this estimate is taken from the evidence.

How estimate was prepared.

It is one of the instructions of the Department, when a work is about to be undertaken by the day-labour system, that particulars, similar in every respect to those required when inviting competitive tenders, should be carefully and accurately prepared, so that an estimate of the probable cost can be made. (*See* evidence of Mr. Davis, the Under Secretary for Public Works, p. 1569, Q. 15508.) Mr. Davis there says:—

> I may say . . . . . our officers have instructions in regard to day labour works that they are to prepare specifications and designs just as though they were to invite tenders, accounts to be kept, measurements made, and the cost in every respect kept under control, just in the same way as if they were carrying out a contract. So, virtually, the officers of the Department become contractors, so far as the management of the work is concerned.

Based upon Contractor's prices.

The estimate is made on the basis of information in the possession of the officers regarding prices which have been previously submitted by contractors for works of a similar nature (*see* evidence of Government Architect, pp. 1676–7, Qs. 16304–5 and 16310).

> 16304. *Mr. Mant.*] *Q.* Following on those disabilities or otherwise that you speak of, were they clearly borne in mind when the original estimate was prepared? *A.* No, not necessarily, because our estimates are generally prepared on the basis of public tendering.
> 16305. *Mr. Pringle.*] *Q.* If you were to prepare your estimates on any other basis, it would be a higher basis, would it not? *A.* Yes, it must.
> 16310. *Mr. Mant.*] *Q.* You prepared the estimates simply on the cost of other works, and what you thought would be the tender price? *A.* Quite so.

Estimate prepared from bill of quantities supplied by Anderson and Pate.

The estimate for the Prince Alfred Hospital pavilions was made up, in the first place, from the original bill of quantities supplied by Messrs. Anderson and Pate, quantity surveyors. Each item of stonework was priced by Messrs. Elliott and Coates, clerks of works, and by Mr. Ryce, the foreman mason. The prices were afterwards checked by Mr. Cook, assistant architect, and finally revised by the Government Architect (*see* evidence of Mr. Cook, page 18, Qs. 112, 113, 114).

> 112. *Mr. Mant.*] *Q.* Who prepared that estimate, Mr. Cook? *A.* It was prepared by the Clerk of Works, Mr. Elliott, Mr. Coates, the foreman, and myself.
> 113. *Q.* The four of you worked it out? *A.* They worked it out, and I checked it afterwards.
> 114. *Mr. Wilson.*] *Q.* Did they work separately? *A.* They worked it out together.

Prices fixed on basis of ordinary Sydney freestone. Original estimate of cost.

Mr. Vernon states that, although he altered in some instances prices set down against the other particulars, no alterations were made by him for the prices of stonework (*see* also address by Mr. Vernon, page 1845). He there says: "In no case did I alter the prices of the stonework." The prices as fixed were on the basis of ordinary Sydney freestone being used (*see* evidence of Mr. Vernon, p. 64, Q. 508). According to the original design, the quantity of stone in each pavilion was 21,181 cubic feet, and the estimated cost, as per priced bill of quantities, was £6,622 (*see* evidence of Mr. Vernon, page 105, Qs. 868 and 873). This gives an average cost per cubic foot of 6s. 3⅓d. (*vide* evidence of Mr. Cook, page 113, Q. 955). This estimate

estimate is stated to have included all establishment charges, and also a provision for what would have been contractor's profit, had the work been carried out by a contractor (*see* evidence of Mr. Vernon, p. 12, Q. 35, and p. 39, Q. 321).

35 *Mr. Mant.*] *Q.* Can you say, or give an estimate, as an expert, what percentage a contractor might have done it cheaper in your opinion? *A.* That is very difficult to say. Our own office estimate was 6s. 3d. That was the office estimate for Waverley stone, or any stone, except "Purgatory." I consider my office estimate of 6s. 3d. per cube foot to be a liberal covering one, which ought to provide against all losses.

Estimate of 6s. 3d. included all charges.

321. I wish to amplify my answer to question No. 35. I wish to add to that answer that the office estimate of 6s. 3d. includes all establishment charges, and, if in the hands of a contractor, his profit.

Reduction in quantity of stonework on revision of plans.

On the plans being revised, with a view to reducing the cost, 10,135 cubic feet of stone were, according to the evidence of Mr. Vernon, taken out of each pavilion (*see* evidence of Mr. Vernon, p. 105, Q. 870). Mr. Pate, the quantity surveyor, however, states that 11,350 cubic feet were omitted. As there is a slight discrepancy between these two statements, the following comparison will show how the estimate is affected. The comparison has been prepared from Exhibit No. 21, which is a statement put in by Mr. Vernon, showing the quantities of stone in original bills and the deductions as shown in amended bills of quantities, and from Exhibit No. 49, which is a return prepared by Mr. Pate, showing the measured quantities and the omissions, made on revision of plans from the original bills of quantities.

COMPARISON showing how departmental estimate of stonework was affected by the difference between the Government Architect's calculations and those made by Mr. Pate, quantity surveyor, after revision of plans.

Exhibit No. 21.

		Cubic feet.
Department's estimate of cubic stone in original bills		21,181
Department's estimate of cubic stone deducted in amended bills		10,135
Department's estimate of stone left in amended design		11,046
Department's original estimate	£6,622 0 0	
(Assuming 21,181 cubic feet to be correct, this works out at 75d. and a small fraction per cubic foot.)		
Deductions	£3,250 0 0	
Leaving amended estimate	£3,372 0 0	
(Assuming 10,135 cubic feet to be correct, this works out at 77d. per cubic foot, and the stone left in—11,046 cubic feet—works out, making the total of £3,372, amended estimate as per Exhibit No. 21, at 73d. per cubic foot and a small fraction.)		

Exhibit No. 49.

		Cubic feet.
Total cubic feet in original bills, according to Mr. Pate		21,120
(This works out at 75·15d. per cubic foot.)		
Stone omitted, according to Mr. Pate		11,350
Net deduction (which works out at 73·04d. per cubic foot)	£3,456 0 0	
Stone left in, according to Mr. Pate		9,770
Amount of amended estimate, according to Mr. Pate	£3,157 11 3	
(This works out at 77·55d. per cubic foot; but if Department's estimate is to be taken as £3,372 (*see* Exhibit No. 21), then the stone would work out at 82·8d. per cubic foot.)		

Mr. Oakden, the expert witness, questioned Messrs. Vernon, Cook, and Pate, with a view of ascertaining which of these exhibits should be considered as the more correct. These witnesses agreed that Exhibit No. 49, which was specially prepared for the purposes of the inquiry, should be taken as the more accurate statement (*see* evidence of Mr. Pate, p. 1713, Qs. 16585–88; also evidence of Mr. Cook, p. 1713, Qs. 16689–96, and evidence of Mr. Vernon, p. 1712, Q. 16565).

The Departmental estimate, therefore, for the stonework must be taken as 6s. 5½d. for Waverley stone. Mr. Vernon, in his final address, explained that the slight increase on the figures of 6s. 3⅓d. had to a certain extent been lost sight of in the course of the inquiry, and that the 6s. 3d. has been taken as the standard (*see* p. 1856, Mr. Vernon's address). Actual Departmental estimate, 6s. 5½d. for Waverley.

As already stated, the estimate of 6s. 3⅓d. was for ordinary Sydney freestone. The decision to substitute Purgatory stone in the base-course and lower floors, however, introduced a disturbing factor, which made it necessary to obtain some data to admit of the extra cost involved by the use of this stone being arrived at. In order that this data might be obtained with some degree of accuracy, a test was made at the Fisher Library. In making this test, twenty-four stones which were to be used as sills were cut, and cutters of average ability employed. How estimate for Purgatory stone was obtained.

8	pieces	of Purgatory	stone were	taken from	Pyrmont Quarry
8	,,	Waverley	,, ,,	,,	Ryan's Quarry.
8	,,	Best Bed	,, ,,	,,	Pyrmont Quarry.

The result showed that the labour on Purgatory averaged 4s. 9½d. per cubic foot, on Waverley 3s. 8d. per cubic foot, and on best bed Pyrmont 3s. 2¼d. per cubic foot (*see* report of Mr. Cook, pages 89, 90 of evidence).

For the purposes of this inquiry it was therefore accepted by the Department that 1s. 1d. per cubic foot was a fair amount to allow for cutting Purgatory stone over the actual cost of cutting Waverley stone (*see* evidence of Mr. Vernon, p. 11, Q. 31, also p. 158, Q. 1314).

The average prices that have been generally used during the inquiry as the official estimates, are for Waverley stone 6s. 3d. per cubic foot, and for Purgatory 7s. 4d. per cubic foot (*see* evidence of Mr. Vernon, p. 13, Q. 39). It will be seen, however, from the comparison of Exhibits Nos. 21 and 49, that to be more accurate, the prices should have been taken as 6s. 5½ for Waverley, and 7s. 6½d. for Purgatory stone. Official estimates for Purgatory and Waverley stone.

As Purgatory stone was continually mentioned during the inquiry, it is perhaps desirable to explain what is meant by the term. It is the name applied to a certain hard quality of stone which is obtained from a portion of the Pyrmont Quarry. Mr. Vernon, p. 10, Q. 23, says :— Description of "Purgatory" stone.

> I wish to point out to the Board that a somewhat wrong impression is given to the public by the term "Purgatory." In an ordinary sense it would imply an exceedingly hard or difficult place to work in, but I am told that the origin of the word "Purgatory" at Pyrmont has nothing whatever to do with the quality of the stone, but refers to a geological blow which occurs at the back of the quarries, and it was popularly called "Purgatory" on account of this volcanic blow. The name "Purgatory" has become attached to a particular portion of the quarry at Pyrmont, which is much harder than the other portion, and the meaning has rather been applied to the quality of the stone than to the locality it comes from.

Mr. Vernon further explains in Question 36, how it came to be used. He there says :— How "Purgatory" stone came to be used.

> It was introduced because I was called upon some short time previously to report upon the state of the stonework of the existing University buildings, and upon examination I found a most lamentable state of affairs with regard to the lower portion of that building. I had to report that the base courses were showing signs of rapid decay, and that in the main gateway this was especially the case, and that in order to preserve the building some steps must be taken to remedy this. I could not ascertain the quarry from which the stone was taken, but I thought it fair to assume that it was good sandstone supplied from an ordinary Sydney quarry. Then, at the same time, having to erect the Fisher Library and the two new wings of the Hospital, costing together somewhere about £130,000 or £140,000, it was most emphatically impressed on my mind that I must exercise extreme care in regard to the choice of stone to be placed in these two buildings—the Fisher Library, because it was a Gothic building, full of intricate tracery, of an elaborate character, and the Prince Alfred Hospital, because it is built on clay subsoil, and because we found on all the shady sides of the existing buildings vegetation had set up, and consequently induced decomposition. Then I also examined the base courses of the Lands Office, which showed signs of fretting. I also examined the Colonial Secretary's Office, and these buildings, particularly the University, showed that some special care must be taken with regard to these important buildings, viz., the Fisher Library and the Prince Alfred Hospital, and I therefore recommended the use of Purgatory stone . . . . It was a matter of long consideration.

Although the estimate was, as stated, made up on the basis of contractors' prices, the Government Architect, at a late stage of the inquiry, submitted in support of his figures a statement of the cost of stonework on other day-labour jobs which had been carried out before the rotation system came into force. Comparison of estimate with cost of work on other day-labour jobs.

The works referred to, and the prices, were as follow :—

Work.	Stone Used.	Average Cost per Cubic Foot.
		s. d.
Chief Secretary's Office additions	Pyrmont	6 6
Government Printing Office additions	"	6 5½
Royal Mint additions	"	7 4¾
Custom House additions	"	6 4½
General Post Office	"	4 8¾
Art Gallery and Portico	"	6 11¾
Newcastle Post Office	" and Purgatory ...	6 10

Accuracy of estimate questioned by representatives of Stonemasons' Society. Insufficient amount allowed for cutting.

The accuracy of the Departmental estimate was questioned by the representatives of the Stonemasons' Society, and, in fact, much of their case depended upon these objections. They strongly argued that an insufficient price had been allowed for the cutting. In Question 8391, p. 878, Mr. Thomson said :

> The cutting, I think, is worth between 5s. and 6s. to cut. That is my opinion.

They contended that in preparing the bills of quantities sufficient detail was not given to allow a correct estimate of the cost of cutting being made therefrom. Against this, the Contractors stated that the method adopted by the quantity surveyors was that recognised in the building world, and that a perfectly reliable estimate could be prepared from the information supplied (*see* examination of Mr. Thomson, Qs. 8706–14, also that of Mr. Howie, Qs. 10401–13). Mr. Marsden also testified that the mode of preparing the bills of quantities was exactly similar to that adopted in Victoria (*see* his evidence, Qs. 14320–55). Mr. Oakden also confirmed this statement of Mr. Marsden (*see* his answer to Q. 16828).

Arguments of Messrs. Grant and Thomson re pricing individual stones.

Messrs. Grant and Thomson, however, considered that a better result could be obtained by the pricing of individual stones, and they submitted a number of returns, showing the result of cutting the stones of different buildings on which they had worked. They asked the respresentatives of the Contractors to put a price for cutting on various stones selected from the Prince Alfred Hospital Building. The Contractors' representatives, however, urged that this method of quoting the cost of cutting individual stones would not form a fair basis upon which to prepare an estimate for a quantity of stonework; that the conditions under which the work has to be done must be considered, and that the pricing of any particular stone would be misleading (*see* evidence of Mr. Loveridge p. 1355, Q. 13497) :—

Contractors consider pricing of individual stones misleading.

> 13497. *Mr. Pringle.*] *Q.* Do you think it possible, by taking a stone here and there, and estimating the cost of it, to enable one to arrive at the value of the whole of the stone in a building? *A.* Quite impossible.

Again, in Question 13657, Mr. Loveridge, in reply to Mr. Grant, says :—

> We generally take the whole bulk and average it at a price.

See also evidence of Mr. Stuart (page 1192, Q. 11993) :—

> 11993. *Mr. Mant.*] *Q.* The time you take to work a particular stone would have no bearing on the average cost? *A.* No, not the slightest. Where a very large quality of a certain sort of stonework had to be done, I have heard of a builder getting two or three men to work bits of stone before tendering, in order to obtain accurately the cost of working that particular stone; this was because there was a tremendous quantity of it, and he wanted to cut the thing very fine indeed. He got three men to work pieces of stone, but he did not get the work then. You see these three men might have misled him.

Again, in Question 12378, in reply to Mr. Grant, Mr. Stuart points out that the conditions under which the stone is worked would have to be considered, and the price determined by survey of the whole work. Also, in Question 12400, Mr. Stuart states that his objection to pricing a piece of stonework was because he considered it would be misleading the Board.

Contractors classify stones.

Mr. Howie, a master builder, who is regarded, both by the contractors and the stonemasons, as a man whose opinion is of great value, when questioned on the subject of the pricing of individual stones, stated (*see* page 1021, Q. 10391). . . . "We contractors classify the stones."

Again

Again, in answer to Question 10392, Mr. Howie said :

10392. *Mr. Barling.*] *Q.* In making up your estimate you would not go into details like that;—you would look at the work as a whole? *A.* Yes; I will show you how I classify them.

Mr. Wall, the contractor who erected the new buildings for the Kenmore Asylum, gave evidence practically to the same effect (*see* Qs. 10791, 2, 3) :—

10791. *Mr. Barling.*] *Q.* In making up your estimate, on which to base your tender, would you go into the question of individual stones? *A.* We could not possibly do it. In the first place you would not get the time.

10792. *Q.* You take the average right through? *A.* You are bound to do that.

10793. *Q.* You would do like Mr. Howie has explained—classify the stones, and then give an average price? *A.* That is right.

Stonemasons urge that stonework is unique on account of small cubical contents.

The representatives of the Stonemasons' Society urged that the stonework was unique, because of the small cubical contents of the stones and the large superficial area of face-work, in comparison with the beds and joints, and consequently more costly (see evidence of Mr. Grant, p. 466, q. 4595) :—

4595. *Mr. Thomson.*] *Q.* Have you met with any building with such a large amount of stone with small cubical contents? *A.* No; during the whole course of my experience, both here and in Europe, I never saw any stone similar to the stone in the Prince Alfred Hospital.

See also evidence of Mr. Dumbrell (p. 734, qs. 7522–24) as follows :—

7522. *Mr. Stuart.*] *Q.* But you see Mr. Grant said there was no stonework done in the State to be compared to this? *A.* I do not think there is.

7523. *Q.* I think he said this was a unique job? *A.* I do not know a building with stones of such small cubical contents.

7524. *Q.* There is not much stonework altogether? *A.* No; but there is a large number of stones of small cubical content.

Mr. Thomson said, in answer to Mr. Stuart (p. 859, qs. 8718–20) :—

8718. In comparison with buildings that are wholly of stone it is, without a doubt, of small cubical contents. There are long lengths, but they do not cube up large. It has been given in evidence that 19 feet is the largest stone that has been cut there, up to, of course, the date that evidence was given. I do not know of anything since.

8719. *Mr. Stuart.*] Now, do you think the stones are so very small that they would make the job different from anything else that has been done in the State, and of which any record has been kept?

8720. I have not seen the whole State; I have not seen all the buildings; but in the course of my experience I have not met anything like it; when you take into consideration double-faced work.

Mr. Marsden considers work of ordinary class.

Mr. Ryce, the Foreman, admitted, in answer to Mr. Thomson (see q. 3400), that the stone that had been cut was, taking it all round, of small dimensions in comparison with other buildings. Mr. Marsden, the Government Architect of Victoria, however, said that the stone and brickwork was of the ordinary class (see Q. 14199) :—

14199. *Mr. Vernon.*] *Q.* As compared with stone and brickwork ordinarily? *A.* As far as the stone and brickwork is concerned, it is about the ordinary class of stone and brickwork, perhaps a little more work. As I say, the only difference is in connection with some of the smaller sills. That is the only difference. Leaving them out, I do not see any difference between the work at the Prince Alfred Hospital and general work in brick and stone.

See also Question 14201 :—

14201. *Mr. Vernon.*] *Q.* It has been called at this inquiry a "unique" building in that respect? *A.* If the Nurses' Hospital is unique, the other must be unique, too; although I understand the meaning of the term "unique" is that there is no other building like it, and I do not think it is strictly true in that connection.

Stones classified by Mr. Thomson.

Contractors agree to price stones when classified.

A considerable amount of discussion took place on the question of the small cubical contents of the stone, and, in view of the objections raised by the Stonemasons' representatives to the method adopted in preparing the bills of quantities, and the statement of the contractors as to their practice in classifying stones when quoting a price, it was decided, in order to arrive at a conclusion satisfactory to both parties as to the cost of cutting, that the stones already cut and placed in position in the building should be classified by Mr. Thomson, who very kindly undertook to do this at the request of the Chairman. The contractors stated that if this were done they would be willing to put a price on each item. Mr. Thomson accordingly visited the work and made the classification, which he submitted to the Board. This was handed

handed to the contractors for the purpose of pricing. The Board took special care that the contractors should not have any guide as to the quantities of stone involved in each item, in order to prevent any possible charge of making the prices fit in with the final result (*see* qs. 16227–36, p. 1669, wherein this point is very fully dealt with). In the meantime the quantities were taken out from Mr. Thomson's classification by Mr. Pate, Quantity Surveyor. The classification of the stones and the pricing by the contractors is shown in Exhibits Nos. 133 and 167. The quantities, as supplied by Mr. Pate, are given in Exhibit No. 168. The following is a summary of these exhibits, showing the average result arrived at, assuming Waverley stone :—

No.	Item.	Quantity supplied by Mr. Pate.	Price per cube ft. buildings.				
		Cube ft.	s.	d	£	s.	d.
1	Basement sills, rock faced	214	1	9	18	14	6
2	Do coping, 9 in. x 7 in.	5	2	9	0	13	9
3	Do do 1 ft. 2 in x 10 in.	5¼	2	7	6	19	6
4	Steps, at 12 in. x 7 in. section	81	2	7¼	10	10	11
5	Basecourse, 9 in.–1 ft. 2 in. x 1 ft. 6 in. wide, taken at 1 ft. 2 in section	36¼	2	1	37	18	4
6	Sills, specialised, 1 ft. 9 in. x 1 ft. 2 in. section	664	2	0 12/19	122	4	9
	Do 1 ft. 4 in. x 10 in. section		2	10¾			
	Do 1 ft. 8 in. x 7 in. do		3	9¼			
	Do 1 ft. x 7 in. do		4	11⅐			
	Do 7 in. x 6½ in. (7 in.) do		4	3			
	Do 8 in. by 7 in. do		4	3			
			3	7			
7	Covered way bases, 2 ft. 9 in. x 2 ft. x 1 ft. 2 in. kerbing between piers	202	3	1	33	13	4
8	Arcade kerbing, 12 in. x 7 in.	82	6	9	22	0	9
	Do bases, 2 ft. 4 in. x 1 ft 6 in. x 10 in		4	0			
9	Strings, rock faced, 5 in. x 1 ft. 2 in. section	463	1	6⅐	29	1	6
	Do do 9 in. x 1 ft. 2 in. do		1	0			
10	Covered way coping, 1 ft. 2 in. x 7 in	56	4	10½	16	6	6
	Do do ramp		6	6⅜			
	Do do return		6	1			
11	Black gable coping, 1 ft. 3 in. x 7 in.	47	5	10½	13	16	2
12	Templates	695	2	0	69	10	0
13	Sill course, middle section 11 in. x 7 in.	189	3	10½	36	12	4
14	Ashlar panel, 9 in. x 1 ft. 2 in.	517	3	11	81	19	4
	Do 1 ft. 2 in. x 1 ft. 2 in.		2	9¾			
15	Architrave and frieze rubbed on face only, section 11 in. x 1 ft. 8 in.	587	3	3	79	0	2
	Entablature, section 1 ft. 4 in. x 1 ft. 8 in.		2	5½			
	Do do 12 in. x 14 in.		2	11			
	Do do 18 in. x 14 in.		2	1⅚			
16	Colonnade bases, 3 ft. 2 in. x 1 ft. 10 in. x 1 ft. 2 in.	1,358	3	7½	248	19	4
	do basecourse, 1 ft. 2 in. x 1 ft. 2 in., section		3	2			
	Band stones, 1 ft. 7 in. x 1 ft. 2 in. x 1 ft. 2 in.		4	6 12/13			
	Arch stones, 2 ft. 6 in. x 1 ft. 2 in. x 1 ft. 5 in.		3	2 10/23			
	Architrave and frieze, face soffit and back rubbed, section 1 ft. 4 in. x 1 ft. 8 in.		3	8			
	Entablature forming sills, section 1 ft. 6 in. x 1 ft. 2 in.		3	8½			
17	Colonnade bases, 7½ ft. high, 2 ft. 4 in. x 1 ft. 6 in. x 7 in.	260	5	3	79	1	8
	Arch stones, 1 ft. 8 in. x 1 ft. 3 in. x 9 in.		7	7			
	Impost caps, four faces		5	5			
18	Colonnade parapet bases—						
	Colonnade parapet coping as per model 18	242	5	6	59	15	0
	do blocking, section 1 ft. 2 in. x 7 in.		4	4½			
19	Central portion bases moulded three sides, 2 ft. 7 in. x 1 ft. 4 in. x 1 ft. 2 in.	99	4	3	25	17	0
	Central portion imposts, moulded three faces		5	0			
	do do arches, 1 ft. 6 in. x 10 in. x 12 in.		6	5			
	20 cornice pediment	1,012	3	4	168	13	4
		7,191			1,161	8	2

Average cost for cutting per cube foot, 3s. 2·7d.

It

It will be seen from this summary that the average cost works out at 3s. 2·7d. per cubic foot. This estimate by the contractors of the cost of cutting compares very closely with the estimate of the Department, as the following analysis shows. The figures are taken from Exhibit No. 34, which gives the actual cost of the items :— Average cost per cubic foot on contractor's pricing.

	s.	d.
Stone (Waverley)	1	4
Sharpening	0	2½
Cartage	0	2¾
Haulage	0	5½
Setting, cement, sand, &c.	0	9¾
Total	3	0½

The difference between this sum of 3s. 0½d. and the total estimate of the Department for cost of the stonework (Waverley), viz., 6s. 5½d., represents the cost of cutting the stone and establishment charges, which latter is estimated at 15 per cent. This difference is 3s. 5d., so that the Departmental estimate accords very closely with that of the contractors' pricing of 3s. 2·7d. As stated in another portion of this Report, Mr. Oakden's estimate of what should be the proper cost of cutting the stonework is 3s. 6d. to 4s., inclusive of all establishment charges (*see* his answer to Question 16816). Comparison with office estimate and estimate of Mr. Oakden.

While, therefore, giving every due weight to the arguments of the Stonemasons' representatives as to the unique character of the work and the small cubical contents of the stone, the fact that the estimate of what should be the proper cost of the cutting, arrived at through three independent sources, practically corresponds, compels the Board to come to the conclusion that the estimate of the Department was, generally speaking, a fair and proper one.

With regard to the Departmental statement of the cost of items of the stonework, other than cutting, viz., stone, sharps, cartage, haulage, and setting, it should be stated that they were unfavourably criticised by the contractors, and also by Mr. Oakden. For instance, Mr. Pringle stated, in reply to Mr. Grant (*see* Questions 11053–6), that the cost to him of sharps, crane, haulage, and setting was about 6d. per cubic foot. The cost of these three items on the Prince Alfred Hospital work, as already shown, is stated to be 1s. 5¼d. Criticism of items of Departmental estimate other than for cutting.

Mr. Stuart stated, with regard to the cost of the stone, that he could get it cheaper than 1s. 4d., delivered at the shed (*see* his answer to Question 11900). With regard to cartage, he would have endeavoured to have done away with the item altogether (*see* Questions 11909–14). He stated he differed completely with the Department on the item for crane, haulage, and setting (*see* Questions 11,912, 3, 4). Mr. Oakden's evidence on the point is as follows :— Mr. Stuart could get stone cheaper.

16807. *Q.* 9. You have seen the prices put in by the Government Architect for services other than the cutting and the cost of stone, sharps, haulage, cartage, &c.;—do you consider these fair or excessive values? *A.* (*a*) Sharps, 3½d. I understand from Mr. Vernon's answer to Question 1154 in the evidence, that this is for Purgatory stone.

16808. *Mr. Vernon.*] Yes, that is so; this return was made before the Waverley was being returned.

16809. *Witness.*] Therefore, I think I would be justified in assuming that Waverley stone should not be debited with so heavy a cost as 3½d. for sharps.

16810. *Mr. Vernon.*] It has gone down to 2½d.

16811. *Witness.*] So that there could be 1d. to come off that item, speaking generally of Waverley stone. My note was, "If it is the average over the whole, it is too high," but Mr. Vernon now has cleared that up. Mr. Oakden thinks estimate for haulage and setting excessive.

(*b*) Cartage from shed to works: This, I understand, is necessitated by the circumstances of the case. 2¾d. is not an excessive item, in my opinion, in itself, but should, I think, have been allowed for in the Department's original estimate.

(*c*) Haulage and setting, 5½d. and 9¾d., respectively; total, 1s. 3¼d.: These are excessive in my opinion, as already stated in my previous answer, by at least 6d.

In

Comparison of office estimate with cost of similar work in buildings carried out under contract.

In support of the correctness of the Departmental estimate, evidence was produced as to the cost of stonework in other buildings carried out by contract, which, it was claimed, compared in a more or less degree with the stonework at the Prince Alfred Hospital pavilions. The following statement shows the works referred to, the stone used, and the average cost of the stonework per cubic foot, all items included, as compared with the Departmental estimate of 6s. 3d. for the work at the Prince Alfred Hospital:—

Work.	Stone used.	By whom carried out.	Average cost per cubic foot.
National Art Gallery ...	Pyrmont	A. Howie	2/8½
Supreme Court (extras) ...	Waverley	Smith & Pringle ...	5/9
Government House Chimneys	Waverley	J. M. Pringle ...	4/5¼
University Turrets	Pyrmont	Deane & Sons ...	.....
Prince of Wales Hotel ...	Waverley	Baldwin Bros. ...	3/7
Harbour Trust Offices ...	Annandale	J. Howie	.....
New Police Offices	Waverley	J. Garnett... ...	3/7
Kenmore Asylum	Bundanoon	Wall	(about) 4/9
Nurses' Home	Marrickville, Pyrmont, and Purgatory	Stuart Bros. ...	3/9½
Board of Health Offices ...	Annandale	———	2/6
Redfern Court-house... ...	Waverley	Scouller	3/3

Comparison with Kenmore Asylum and Nurses Home buildings.

A large amount of evidence was given on the question as to the comparison of the stonework in these buildings, and that in the Prince Alfred Hospital pavilions. It was generally admitted that the two cases in which a comparison could most closely be made, were those of the Kenmore Asylum building and the Nurses' Home building at the Prince Alfred Hospital, both being buildings with cavity walls and of similar construction to the Prince Alfred Hospital pavilions. The Nurses' Home, forming as it does part of the Prince Alfred Hospital block of buildings, was especially easy of inspection and reference. It was claimed that the stonework in the Nurses' Home, both as regards the size of the stones and the character of the work, was practically similar to that in the new pavilions. To illustrate this, diagrams were prepared by the Government Architect, which are attached hereto. It will be seen therefrom that, in the case of the Nurses' Home, the average dimensions of the stones used was 5·8 cubic feet, and in the new pavilions, 5 cubic feet (*see* Exhibit No. 157). In the case of the Prince Alfred Hospital, the total quantity of stone used was much larger, but this does not affect the comparison.

Contractor's price for stonework in Nurses' Home building.

According to the evidence of Mr. Stuart, the Nurses' Home building was erected by his firm some twelve years ago, and he stated that their price for the stonework was 3s. 9½d. per cubic foot (*see* p. 1168, Q. 11800). The following quotations from Mr. Stuart's evidence (p. 1168), will more clearly explain the matter:—

11800. Mr. Pringle: *Q.* Do you mind giving the Board an approximate idea of the cost of the stonework? *A.* With pleasure. I should say, however, first, that there was a total of about 8,156 cubic feet of stone used there, and the price that I had for it approximately was 3s. 9½d. per cubic foot.

11801. *Q.* Did that price cover everything? *A.* Everything that you could possibly include in the stone.

11802. *Q.* Did you lose on that job? *A.* No, I did not.

11803. *Q.* Did you make on it? No, I did not make on it.

11804. *Q.* You saved the contractor's profit? *A.* There was 1s. one way or the other, and I always forget which way it was really.

11805. *Q.* But I suppose the contractor's profit was saved in that case? *A.* Well, of course, the job paid all my expenses when I was on there, and paid the cost of keeping my plant in order, and the expenses incidental to our business while we were doing the work.

11806. *Q.* It kept you going? *A.* Of course we had a very large quantity of work going on at the same time.

11807. *Q.* You could look on it as a test at what you could work for without a profit? *A.* It came out that way. Of course, I had some trouble with the masons there.

The evidence of other witnesses on the question of the comparison of the stonework used in the Nurses' Home building with that of the pavilions, is as follows:—

Mr. Loveridge on the comparison of stonework in the two buildings.

Mr. Loveridge stated (*see* p. 1363):—

13570. Mr. Barling. *Q.* We have heard the Nurses' Home spoken of where the scantling of the stone is something similar to that at the Prince Alfred Hospital, so far as I can understand. Have you examined the work at the Nurses' Home carefully? *A.* I have seen the work, and have been all round the building.

13571.

13571. *Q.* Take the scantling of the stones in the two buildings; are they alike? *A.* The facing would be different.

13572. *Q.* But as to the proportion of the face work to the cubical contents of the stone; would that be about the same as at Prince Alfred Hospital? *A.* I think in a good many instances it would.

13573. *Q.* Take it all through? *A.* I think there would be a slight average in favor of the Nurses' Home.

13574. *Q.* That is to say that the cubical contents to the face work would be larger than at Prince Alfred Hospital? *A.* Yes.

13575. *Q.* Mr. Stuart said he got 3/9½, which paid him barely. Taking that amount and the 6/3, would you consider that slightly smaller scantling of the stone at Prince Alfred Hospital would be more than covered as between 3/9½ and 6/3? *A.* I think so.

Mr. Marsden, the Government Architect of Victoria, who was called as a witness by the Government Architect, said, on this point (pp. 1429-30) :—

Mr. Marsden of opinion that the work in the two buildings compares closely.

14195. *Q.* Did you compare the external work of the Nurses' Home generally? *A.* I did.

14196. *Q.* What is your comparison between those two? *A.* Well, it is a little difficult. Generally speaking, the work in the Nurses' Home appeared to me about equal in character, but then there did not seem to be so much small work in the Nurses' Home.

14197. *Q.* I am speaking of the external work? *A.* They are about on a par.

14198. *Q.* Now, coming to the cube measurements, as far as you can see from the appearance of the building at the present moment, what is your opinion about the cube general contents of the pavilion? *A.* In what way, Mr. Vernon.

14199. *Q.* As compared with stone and brick work ordinarily? *A.* As far as the stone and brick work is concerned, it is about the ordinary class of stone and brick work—perhaps a little more work. As I say, the only difference is in connection with some of the smaller sills. That is the only difference. Leaving them out, I do not see any difference between the work at the Prince Alfred Hospital and general work in brick and stone.

14200. *Q.* It is admitted that there are some small cubes, and the sills which you speak of. I do not know whether you are aware, but those small sills are valued per cube at about £157, as against a total for the whole pavilion of £3,200. That would be a small proportion, would it not? *A.* Yes, a small proportion—not a disturbing element.

14201. *Q.* It has been called at this inquiry a "unique" building in that respect? *A.* If the Nurses' Hospital is unique, the other must be unique too; although I understand the meaning of the term "unique" is that there is no other building like it, and I do not think it is strictly true in that connection.

14202. *Q.* I might ask you this question now: Is there any practical difficulty in comparison with other buildings? *A.* There is no practical difficulty. It is a matter of calculation, that is to say, the relative area of moulded and face work with the general bulk of the stone.

14203. *Q.* So that the word "unique" is hardly a correct term to use? *A.* I should hardly think so.

14208. *Q.* Now, with regard to the cube contents, of course you could not see them, but you could judge of the Nurses' Home. You have given us your opinion as to the superficial labour Now, can you give us your opinion, as far as you can, of the Nurses' Home stonework? *A.* I did not quite catch the question.

14209. *Q.* How do you compare the cube measurements of the stone in the Nurses' Home with the cube measurements of the stone in the new pavilions? *A.* Well, in the first place, the appearance. In the second place, I understand they are both cavity wall buildings, so that one would naturally suppose you could see all there is to be seen of the stone.

14210. *Q.* Do you consider that the cost of this stone in the Nurses' Home would be anything like reliable as to what the cost should be in the pavilions? *A.* I think so—a fair guide.

14211. *Q.* It has been given in evidence here by the contractor who carried the work out, that that stonework was carried out at a cost of 3s. 9½d.; that being so, and the cost of the pavilions to date being 9s. 8d., what is your opinion as to the latter? *A.* I should say that the cause of the excess must be sought in another direction than in the actual stone and dimensions of work.

Mr. Wall also gave evidence that the building erected at the Kenmore Asylum was, as regards the exterior construction, of a similar nature to the new pavilions (*ses* his evidence, p. 1049, Q. 10683). He further stated (Q. 10820) that his price for the stonework at Kenmore was 25 per cent. less than the departmental estimate of 6s. 3d. for the pavilions, and, in Question 10815, he said that the stonework at Kenmore paid him. He also said (Q. 10832), that he "had never under any conditions had 6s. 3d. for stonework."

Mr. Wall, on comparison with Kenmore Asylum building, and his price for stonework there.

Mr. Davis, the Under Secretary for Public Works, was also questioned on the subject of the comparison with other buildings, see Question 15517, which is as follows :—

The Under Secretary thinks it fair to take comparison with other similar buildings.

15517. *Q.* It would be a fair comparison to take other buildings? *A.* Unquestionably; other buildings where the same kind of stone was used, stone of similar dimensions, and upon which there had been about the same quantity of work.

Actual Cost of the Stonework.

It has been shown that the Departmental estimate for the cost of the stonework was 6s. 3⅓d. (which, however, as already explained, should really have been 6s. 5½d.) This was for Waverley stone. For Purgatory stone it is necessary to add 1s. 1d. to this price, making the Departmental estimate for that stone 7s. 4d., but the correct basis, as already shown, should be 7s. 6½d.

The statement submitted by Mr. Vernon up to the time the inquiry was commenced showed that Purgatory stone had cost 10s. 11d. per cubic foot, and Waverley stone 9s. 8d. (*See* evidence of Mr. Vernon, p. 81, q. 667.)

Statement of Mr. Jeffries, Prime Cost Clerk.

Exhibit No. 111 is a statement, prepared by the prime cost clerk, Mr Jeffries, of the cost of the stonework at different dates as the work progressed, which was handed in by him when giving his evidence (see p. 921). It will be seen therefrom that up to 29th April the cost of the Purgatory stone is given at 9s. 6d., and Waverley as 8s. 5d. per cubic foot. To these prices 15 per cent. must be added for establishment and other charges, making, as before stated, a total cost for Purgatory stone of 10s. 11d. per cubic foot. Comparing these figures with the Departmental estimate, it will be seen that the net excess cost in the case of the Purgatory stone (taking the corrected estimate of 7s. 6½d.), is 3s. 4½d., and, in the case of Waverley stone, 3s. 2½d. This is on the basis of the corrected estimate shown in Exhibit No. 49.

Excess of cost over estimate.

Contractors consider estimate too high.

It was, however, contended by the contractors that the Departmental estimate was too high as compared with what the price would have been under the contract system, and that, therefore, the excess cost was even greater than that stated.

Mr. Howie's opinion as to value of stonework.

Mr. Howie said, in answer to Mr. Vernon (p. 947) :—

9587. *Q.* I want your opinion as a practical contractor, as to whether 6s. 3d. is a fair price, or whether it is not, for the work at the Hospital? *A.* Is it Waverley stone?

9588. *Q.* Yes. *A.* I could do it for less than that. I could do it for about 5s.

9589. *Q.* You think you could do it for about 5s.? *A.* Yes.

Mr. Howie later qualified this by stating that what he meant was that the cost would be 5s., and that he would be prepared to do it at 5s. per foot, plus 10 per cent. (q. 10340).

Mr. McLeod would do work for 5s. 6d. per foot.

Mr. McLeod stated, in answer to q. 9947, that he would be prepared to do the work for 5s. 6d. per foot. He admitted, however, that the Departmental estimate was a proper, careful, and judicious one (q. 9951).

Mr. Wall said he would have no difficulty in estimating work of the description of that in the pavilions (q. 10665), and, in answer to q. 10673, that he had never been able to get 6s. 3d. per foot for similar work.

Mr. Pringle thinks 6s. 3d. to high.

Mr. Pringle's evidence on the point was as follows:—

11103. *Q.* If you were tendering for the job, could you say what you would put down for stonework? *A.* I looked at the job: I had a walk past it, and we kept our eyes about us in the usual way, I suppose. I should certainly never think of putting 6s. 3d. If I wanted the work, I would put less than that on the stone.

11106. *Q.* And that would pay you well? *A.* I should think it would. I never heard of anyone having 6s. 3d.

Mr. Stuart considers estimate excessive.

Mr. Stuart was of opinion that the estimate was too high (q. 11860), and that of all the jobs he had tendered for, he had never had anything like 6s. 3d. (q. 11861). He added that in expressing this opinion he took into consideration the smallness of the stones (q. 11864). In answer to further questions, he said (p. 1179) :—

11876. *Q.* What do you say would be a fair price for carrying out the stonework at the Prince Alfred Hospital? *A.* I could tell you the same as Mr. Howie said and the same as one other witness said. They said 5s. to 5s. 6d. I tell you this, I would not have got 5s. for it.

11877. *Q.* Would that have given you a profit? *A.* Speaking from my past experience, I should say that almost every job I have done has given me a profit.

11878. *Q.* But you are allowing for a profit in giving that price? *A.* Oh, yes.

Mr. Loveridge thinks Contractors would ask considerably less than 6s. 3d.

Mr. Loveridge said he did not think a contractor would have any chance of getting the work if he tendered at 6s. 3d. (q. 13492), and that he felt satisfied that the builders, as a body, tendering for the work, would ask considerably less than 6s. 3d. (q. 14897).

In

In support of their estimate of what the work should have cost, the contractors gave sworn evidence as to the prices at which work claimed to be similar in character had been carried out under contract. These figures have already been summarised on page 22.

Remarks on Contractors' evidence as to price.

In estimating the value of the contractors' evidence as to the price at which they would have been prepared to do the stonework, the fact cannot be overlooked that they were given an opportunity of tendering for the work, and that they did not embrace it. This matter is dealt with more at length on pages 26 to 29. Consequently, when giving their statement as to what they would have done the work for, it may be urged that they were perhaps unconsciously biassed, and that their interest lay in showing that the Day-labour System was an expensive system, as compared with contract work. In the minds of the Board, the chief value of the evidence of the contractors is in showing the actual cost of works carried out under contract.

Mr. Marsden thinks Departmental estimate a fair one.

Mr. Marsden, the Government Architect in Victoria, said he considered the Departmental estimate of 6s. 3d. to be a fair covering one (q. 14434). He thought the cost of the stone in the Nurses' Home building should be a fair guide as to the cost of the work in the pavilions (q. 14210), and that the cause of the excess cost in the latter case must be sought in another direction than in the actual stone and the dimensions of the work (q. 14211). Taking the cost of the central portico at the Art Gallery at 6s. 11d. per cubic foot, he could not conceive that the Hospital should cost so much more (qs. 14227–8), and, comparing the cost of the work in the Newcastle Post Office, which is of a very intricate character, at 6s. 11d. in Newcastle and 6s. 2½d. at Sydney rates, he thought the Departmental estimate of 6s. 3d. full and liberal. He thought the cost in the case of the work in the pavilions should not be as much as that in the alterations to the Government Printing Office, the price of which was 6s. 5½d. per cubic foot. He further said that the work on the upper portion of the General Post Office, costing 4s. 9d. per foot, as stated, was very cheap as compared with the cost of the work at the Hospital (q. 14309), and that the Hospital work should not cost more than that at the Custom House, which was 6s. 4d. per foot (q. 14317).

Mr. Davis, the Under Secretary for Public Works, said (q. 15495) that he was quite prepared to accept the estimate, but would not give an opinion as to whether 6s. 3d. was a fair estimate or not.

Mr. Oakden's opinion as to value of stone as compared with that in other buildings.

Mr. Oakden, the expert witness, who was called from Melbourne, gave an opinion as to the value of the stonework in the pavilions, as compared with that in buildings referred to in the evidence of the officers and the contractors, where a fair comparison could be made. These opinions, which were given in answer to certain questions put to him, are quoted at length in a later portion of this report.

In regard to the Nurses' Home, Mr. Oakden states (p. 1735, q. 16801) :—

Comparison with Nurses' Home building.

16801. . . . but, in my opinion, both the 4s. 2d., that is the estimate for the Nurses' Home stonework, after allowing 10 per cent. for contractor's profit, and the 5s. for the Prince Alfred Hospital pavilions' stonework, are low, because we start on the 3s. 9½d., which, I think, is low. I think the 3s. 9½d. as the basis to start with is a low one; but, if we take that as the basis, that is what I arrive at—4s. 2d. and 5s.

Comparison with Australian Club.

He further said, in answer to another question, that the comparison could, in his opinion, best be made with the Australian Club, which was one of the buildings visited by him. He said (p. 1735, q. 16802) :—

16802. . . . Unless buildings are actually facsimiles, it is difficult to make a comparison; but I should say the nearest would be the Australian Club. Taking into consideration the circle on circle work in the corner, I should say it is just about as costly as the Prince Alfred Hospital pavilions.

The Australian Club was stated by Mr. Pringle to have been erected by his firm some years ago. He said the prices of labour and materials were practically the same as at present (*see* q. 11280, p. 1108). In the case of that building, the cost of cutting the stone was 3s. 10½d. (q. 11281). The cost of cutting, in the case of the Prince Alfred Hospital pavilions, should, according to Mr. Oakden, be between 3s. 6d. and 4s. In answer to question 16816, Mr. Oakden says:—"I should think 3s. 6d. to 4s. would be ample. That would cover the contractor's profit or establishment charges, or whatever you like to call them." The actual cost has been for Purgatory stone, 6s. 6d., and Waverley, 5s. 5d. (*See* evidence of Mr. A. S.

Cook, p. 18, q. 108, also Exhibit No. 34, which is referred to on page 143 of evidence.) In this question and exhibit the price is given for Purgatory stone only; but, as has already been pointed out, the price in the case of Waverley should be 1s. 1d. less per cubic foot.

Comparison of actual cost with (1) cost at Departmental estimate, and (2) Contractor's estimate of value.

The following comparative statement shows the cost of the stonework in the pavilions, first, at the contractor's estimated price; second, at the rate quoted in the Departmental estimate; and third, the actual cost:—

Stone.	Quantity.	Cost at Contractor's Estimate.	Cost at Departmental Estimate.	Actual Cost.
	cub. ft.	s. d. £ s. d.	s. d. £ s. d.	s. d. £ s. d.
Purgatory ...	6,040	@ 6 7 = 1,988 3 4	@ 7 6⅓ = 2,277 11 8	@ 10 11 = 3,296 16 8
Waverley.....	13,500	@ 5 6 = 3,712 10 0	@ 6 5⅓ = 4,359 7 6	@ 9 8 = 6,525 0 0
	19,540	£5,700 13 4	£6,636 19 2	£9,821 16 8

It will thus be seen that the actual total cost of £9,821 16s. 8d. exceeds the Departmental estimate of cost by £3,184 17s. 6d., and the contractor's estimate of value by £4,121 3s. 4d.

With respect to the value of the work under the contractor's estimate, which is nearly 50 per cent. less than the actual cost, it has been pointed out in an earlier part of this report that the original decision was to construct one of the pavilions by day labour and to invite tenders from contractors for the other, with a view to having a practical test of the two systems. The contractors as a body, however, eventually declined to avail themselves of the opportunity, the main reason assigned being that the test, under the conditions sought to be imposed, would not be a fair one. The matter is very fully dealt with in the explanations given by Messrs. Pringle and Stuart, and, as it is of importance, the Board think it desirable to quote the explanation in full.

Reasons why Contractors would not tender for one pavilion.

Mr. Pringle stated (pages 1079–84):—

11026. Well, you know the Builders' Association and the builders generally have been on their defence for a great number of years, ever since the day-labour system was introduced. They were made to defend themselves because the day-labour system took away a good deal of employment from them. It drove them into competition in private offices, and those who had established a connection in Government work found it a very difficult matter indeed to get into private offices. They found men equally as good as themselves there, and it takes a long time to dislodge a good man.

Now, when the Government erected all their buildings by contract, I suppose there were at least half a dozen good builders who followed Government contracts, and scarcely ever touched a private contract; and, as I pointed out, it increased the competition in outside work, and made it extremely difficult for these builders to find work for their men and plant. They naturally resented that, as I suppose every employer in every line of business would if attacked in that way. They thought it was unfair to be attacked by the Government. They had to pay income tax, and all other taxes, and they had to defend themselves. Another reason why they had to defend themselves was this: they had to justify themselves. Politicians generally—I do not refer to any one in particular—said that we slummed our work, that we sweated our men, that we did a great many things that we ought not to have done, and that we charged such enormous bills for extras that the country was nearly ruined. Naturally we did not like it, and we denied it, and did our best to prove that they could not do the work cheaper than we could, and did not do it any better. The result has been that this agitation has been going on ever since. We did not care to cave in on the grounds of expediency or anything else.

So we have been in this position now for many years: that we have been fighting the Government; not that we had the time, or liked to be fighting the Government, because up till that time I might say the Builders' Association took no part in politics whatever. Some were freetraders and some protectionists. The question of politics was tabooed. Nobody was allowed to speak of politics in the Association until they were driven into one camp in the way I speak of.

Now, owing to this agitation that has been going on, the public—or a certain section of the public—came to take an interest in the question, and came to side with us, I think, to a certain extent. Consequently, when the question of erecting the Prince Alfred Hospital pavilions came up, I understand that the Hospital Board wished to have them carried out by contract, as they were in doubt whether they could be carried out as cheaply by day labour as by contract; and I understand the Minister for Works gave his consent to that being done. Shortly after that, a deputation from the Trades and Labour Council, I think, waited on the President of the Hospital Board—Professor Anderson Stuart—and pointed out that it would be much better to carry out the work by day labour; that day labour had been so very successful, not only in connection with Government works, but also private works; that they would be making a great mistake if they did not carry it out by day labour. Mr. Stuart can tell you more about this, because many of the jobs which this deputation mentioned as having been carried out by day labour he knew a good deal about, and was in a position to prove that such was not the case.

It was at this point that the Builders' Association commenced to take some interest in the thing. They did not care two-pence whether the Government carried out the work by day labour or not. They were sick and tired of the whole thing, and were not troubling their heads about one more day labour job going on, because those who had been driven out had formed some connection again, or gone up King-street, or somewhere else. It was only because this deputation misrepresented the facts—at least we thought the facts had been misrepresented to the public, because this interview was published in the newspapers as to private firms being so possessed of the virtues of day labour as to use it in erecting their buildings—we immediately said, "If we let this go we might as well shut up shop altogether, because these men, not content with having a monopoly of the Government work, are now attacking us in our private work; and although we know that what they say is not true, if we do not take up the cudgels now we will practically go out of business."

The result was that a deputation waited upon the Hospital Board, and traversed the statements made by the deputation from the Labour Council. Well, they had a very patient hearing, and the result of that was—I do not know the whole thing—but I think the result was this: that it was decided between the Hospital Board and the Minister for Works to call for tenders for one pavilion, and to carry out the other pavilion by day labour, and this was to be a great test and to lay the ghost of "Day Labour *versus* Contract" for ever. That was apparently the idea. Well, some gentlemen connected with the Hospital Board thought it was a very clever scheme; so it was, from the point of view of the Hospital Board, very good indeed, because it would set the day labour people and the contract people at one another's throats, and they would get a cheap job between the two. That is the way it struck us at any rate. The Builders' Association said, "We are quite willing that this test should be made, but it wants to be safeguarded by certain conditions." One condition that we thought ought to exist was that the Government should be put in exactly the same position as the contractor, whoever he might be, in the matter of supervision, and in all other matters connected with the job.

In short, the position we took up was this: that this matter of erecting the two pavilions was to be a test; that there were two parties to it. One was the Government, represented by the Public Works Department, and practically represented by Mr. Vernon, the other was the Builders' Association, represented by the contractors. That any test to be satisfactory should be carried out under equal conditions, and that one of the first, one of the most necessary things, was this: that there should be outside supervision—that is, an outside architect or some one disconnected with either the Government or the contractors should supervise the work of both jobs, and be perfectly independent of the Government. We could not get out of our minds this fact, that the politicians, irrespective of the present party altogether, were so committed to day labour, and had defended it so often and used such a great many arguments in its favour, that it was most necessary that there should be a clear-cut division between the Government and this test which was going to be carried out, and that the two parties to the test should be put exactly on the same footing. They would not agree to that; the Government would not agree to that, or the Public Works Department.

11027. Mr. Stuart.] *Q.* You might mention that we required a check upon the expenditure. *A.* Yes, there were various details following on that which we thought necessary. I may say, Mr. President and gentlemen, that we had the utmost faith in Mr. Vernon. Those of us who had worked for him, and we explained this to the Under Secretary too, that any builder who had worked for Mr. Vernon was perfectly certain of his absolute fairness and justice, and all the rest of it. No reflection was intended on our part; unfortunately, the Works Department took it up in that way. We said, "It was no reflection, and we did not mean it to be, but this is going to be a test, and during the time this is being carried out you are going to go on with your day labour all the time, and our mouths are closed; we cannot decently criticise this policy of yours during the time the test is going on, and we want the test to be conclusive. We are willing to go into it, but we want it to be conclusive and absolutely fair." We split upon that rock, and the builders as a body thought that under the circumstances they were only doing their duty by intimating to the general building community that they did not intend to tender, and advising any builders outside their Association not to tender. The result was only one tender was received.

11028. Mr. Stuart.] *Q.* You have mentioned, Mr. Pringle, too, what only part of the statement is. You have hardly emphasised the conditions laid down by the Department in carrying out the test. They actually proposed that we should buy certain materials at the same rate as they purchased them.

11029. Mr. Vernon.] *Q.* No, just the other way.

11030. Mr. Pringle.] Well, they retired slightly from that position, but undoubtedly the impression on our minds at first was this: they wanted to get the benefit of our judgment in the buying of materials. We were asked to name a quarry or a brickyard in our tender that would supply the Government at the same rate, the idea being, as it was explained to us afterwards, that the quality of the stone should be the same, and the colour of the bricks the same. They wanted the advantage of our experience in buying, and we did not care to be shackled that way.

Mr. Stuart, on being asked if he had anything to add to Mr. Pringle's explanation, stated:—

11974. Mr. Pringle explained pretty fully the causes that led up to this proposition to make a test of the two pavilions, and I want to tell you now—and I was in this matter right from the beginning to the end of it—that the builders were very anxious indeed to get a chance to tender for that work. I would have made it my particular business to tender for the work, but we were faced with this condition: that the Department proposed to make a test, and in discussing the matter this appeared to us to be the most important point about it, viz., that it was to be made a test. And if we placed ourselves in that position that the Department asked us to put ourselves in, we had to see that the matter was a test, not only in name but in reality. We then asked that the conditions under which the work was to be carried out should be made so that it would be an absolute fair and square test. We said, "We will tender for the work; you will know our price before the work is started, will you put yourselves in the position of showing us what the work that you are going to do will cost when it is finished? Will you permit us to obtain a check on the cost of cutting the stonework? Will you permit us to check the cost of the

joinery

joinery work? Will you put matters on such a footing that we, at a glance, can see everything necessary to know what the work is costing, just the same as you know the price that we have tendered for?" Well, now, in order to do that, it seemed to us that Mr. O'Sullivan had stated in the House of Parliament that if any Departmental officer said anything adverse to the Day-labour System he would deal with that officer ——

11975. Mr. Barling.] *Q.* Is there any evidence before us that that was said?

11976. Mr. Loveridge.] There is no evidence.

11977. Mr. Grant.] It is only a *Telegraph* statement, Mr. Chairman.

11978. Mr. Barling.] The evidence ought to be given. Of course, if it is in *Hansard* it could be put in as evidence.

11979. Mr. Loveridge.] It is a report of a deputation in the Minister's own room, sir.

11980. Witness.] Now it seemed to us with that knowledge that it would be a much better test, and would free the Departmental officers from a great deal of trouble and anxiety, and put them in a very much better position, if it were put in the hands of independent authorities in regard to the carrying out of the work. The Department could do anything it pleased with regard to the plans and specifications, but the carrying out of the work could be much better done by impartial people. You see we could not put ourselves very well in that position unless the conditions were equal, and the conditions could hardly be described as equal where our hand was shown before a tool was put in the ground, and we did not know anything about the Departmental work, and could not be in a position to know absolutely anything about the Departmental work until the work was finished. And then the question was, whether the Departmental officers would know what it had cost.

11981. Mr. Pringle.] *Q.* Was not that one of the conditions that we asked the Department to adopt, that they also put a price on and put in a tender, so that we would start fair? Let them put their value on the work, as well as the contractors, and then there would be a record of it? Was not that the case? *A.* Yes.

Explanation of Under Secretary with regard to the invitation of tenders.

The explanation given by Mr. Davis, the Under Secretary, as to the Departmental view of the matter, is contained in the statement made by him at the meeting of 28th August (*see* pages 1548–9 of evidence). He said :—

. . . . Simultaneously with the preparation of the drawings, the question of how the superstructure work was to be carried out was under consideration, representatives from both Trades' Hall organisations and the Master Builders' Association waiting upon the Hospital Committee regarding it, the respective views on the matter being referred to Professor Anderson Stuart. The Directors then suggested that one pavilion should be built by day labour and the other by contract; and consequent on developments that had taken place, it was understood, if such a course were followed, that the operations would resolve themselves into a direct comparison of the two systems. On 20th February, 1902, Mr. R. D. Sime, President of the Builders' Association, had a lengthy interview with the Minister, at which Mr. Vernon and myself were present, when the proposed conditions under which the respective pavilions should be built were discussed (*vide* Exhibit No. 124, already presented), but no conclusion was come to. In order that the comparison, if a test were to be made, should be perfectly fair to both sides, and with the view also of getting uniformity of colour, the Department decided to invite tenders for both pavilions under certain special conditions, principally that the facing bricks in the one pavilion should correspond with the facing bricks in the other, and the same arrangement in regard to the stone—the tenderers to submit a sample face-brick with their tenders, attaching a quotation from the maker, undertaking to supply the whole of the face-bricks required for both pavilions at a given price. The reasons for this are obvious.

Then, after receipt of tenders, on acceptance, lots to be drawn for the pavilion, and the amount of contract to be the basis of comparison. The Builders and Contractors' Association, however, contended that the tenderers should be allowed to make the best arrangements they could in the open market for the material required, the Government to do likewise.

Further negotiations took place, but without result, and ultimately the whole matter was referred to Professor Anderson Stuart for consideration by the Board of Directors, as shown in the letter which I addressed him on 13th May, 1902.

Again, on page 1551 :—

. . . It was finally decided that tenders should be invited for the southern pavilion only, the 7th July, 1902, being the date fixed for receiving offers. In conformity with the decision arrived at by the Builders' and Contractors' Association, none of the members of that body tendered—only one offer, that of Mr. Henry Leahy, for the sum of £41,697, being received. The following endorsement on the back of his tender explains the situation :—"With reference to my tender attached hereto for the erection and completion of Southern Wing, Queen Victoria Memorial, Prince Alfred Hospital, I have to inform you that in consequence of the Associated Brickmakers refusing to quote for the supply of bricks to this contract, we are unable to comply with the guarantee clause regarding the bricks; but I feel confident that, in the event of my tender being accepted, I can obtain the bricks required from the non-associated makers at current rates."

Mr. Vernon not in favour of construction of pavilions, one by day labour and one by contract.

Mr. Vernon, the Government Architect, apparently was not in favour of the pavilions being constructed, one by day labour and one by contract. The following is quoted from his address at the conclusion of the inquiry :—

Then came the controversy relative to contract and day labour, about which the Board have been very fully informed. Tenders for one wing were invited, and there was no response from the contractors, excepting the tender of Mr. Leahy. I consider the contractors lost an opportunity very favourable to themselves of carrying out the work more advantageously than the day-labour system with its kindred rotation system would possibly accomplish. My own impression was that Mr. Sime who conducted

negotiations

negotiations on the part of the contractors, took up an impossible attitude; that the Departmental proposals were fair and only such as would be absolutely necessary in this trial of system; and that had the matter been in the hands of the gentlemen representing the Association at this inquiry, a contest would assuredly have been held, and a result possibly arrived at. Personally, I considered the Hospital authorities acted thoughtlessly and without any guidance in recommending a duel that would be so fraught with quarrels and strife within the borders of their own Hospital grounds. I can quite conceive the differences (if this had been carried out by the contractors) between the Association on the one side and the Department on the other would have been interminable; that a combination of societies and unions on the other hand, in directions which we cannot foresee, would have shown themselves, and that in the eagerness of the contest either party would claim the other was taking some undue advantage, and, as regards the officers, I venture, with the utmost respect, to say that they should never be called upon to take up positions thus rendered almost impossible. Therefore, I think, so far as the practical issue of the work is concerned, it was a very fortunate thing that a contest of that character was not carried out within the precints of the Hospital grounds. I think it would have been fraught with very great trouble, worse than we have got into even now.

Statement of Professor Anderson Stuart as to reasons why test between the two systems was recommended by the Hospital Authorities

The following is Professor Anderson Stuart's statement as to the reasons which induced the Directors of the Hospital to recommend a test between the Day-labour and the Contract Systems in carrying out the two pavilions :—

18414. There is a statement made in the evidence showing the manner in which the proposed contest between day labour and contract should be brought about. It is stated there, and correctly so, that it was the suggestion of the Board of Directors, and I ought to state what our reasons were for making that suggestion. We thought if the two systems were competing against each other, each would naturally try to do its best, and the result would be that we would get work as perfect as it could be made. We thought the work would be rapidly done, would be well done, and would be cheaply done, and, incidentally of course, we thought that it might help to settle the vexed question, because we had deputations coming to us from the masters, and we had deputations from the men, each upholding its own side more or less. We were not experts; we could not settle which was the better of the two, and it occurred to us that if there was a competition, it would result—as it results wherever there is competition—in each trying to do its best, and whichever side lost, it would not matter, because the Hospital would certainly gain, and we were trustees for the Hospital, and in duty bound to do our best for the Hospital.

Mr. Loveridge draws attention to difference in colour of bricks used.

When the inspection of the building was made by the Board, in company with the parties represented at the inquiry, Mr. Loveridge drew attention to the fact that the bricks which had been used in the lower storey were not of the same colour as those in the upper storey. He drew attention to this, he said, as an illustration of the impossibility of getting an uniform colour throughout, which was one of the conditions sought to be imposed upon contractors by the Department, when inviting tenders. In regard to this, Professor Anderson Stuart, in his evidence at the conclusion of the inquiry (*see* p. 2097) said :—

I am quite aware that some of the bricks are not as good a match as one would like, but it came to be a question of delaying the work indefinitely, or admitting bricks that were not a perfect match.

Professor Anderson Stuart's statement bears out the contention of the contractors as to the delay which would be caused in obtaining bricks if the Department's requirements were insisted upon.

Tender of Leahy.

With regard to the tender of Leahy, it was disclaimed by the Builders' Association as not emanating from any member of that body. Mr. Stuart gave an explanation on this point, which will be found on pages 1220 to 1222 of the evidence. It is clear from this that Mr. Leahy had no connection with the Association.

When, however, all is said, *pro* and *con.*, with regard to the determination of the contractors not to accept the offer of the Department and submit a tender for one of the pavilions, the Board cannot help thinking that it is a matter of regret that they did not take advantage of the opportunity afforded them, as it would undoubtedly have given an excellent chance of showing the relative cost of doing work under the two systems. Although the contractors do not say so, it is possible that they considered that in a test of this kind the enthusiasm would be all on the side of the men working under the Day-labour System, and in that way a damper might have been put on the men employed by the contractor. It is reasonable to suppose that men would have worked with more enthusiasm if they were engaged on a work carried out under conditions in which they were so strongly interested than if working under the ordinary contract system, and this may have been one of the factors which induced the contractors not to tender.

Causes of Excessive Cost.

Excess cost all in cutting of stone.

The evidence has, the Board think, undoubtedly established the fact that the cost of the work has been disproportionate to its true value. They will now proceed to deal with the reasons advanced to account for this.

At the outset of the inquiry, it was claimed by Mr. Vernon that the excess cost was all in the cutting of the stone (*see* his evidence, q. 48, p. 13). Other factors which, to a certain extent would affect the result, were referred to in the course of the inquiry, but Mr. Vernon, in his summing up at the conclusion, gave the following as being, in his opinion, the causes which contributed to the excess (see pp. 1916–18 of evidence) :—

Reasons given by Mr. Vernon in his address.

(1) The Rotation System as controlled by the stonemasons; (2) Inability to bring good men from one work to another—transfer them; (3) The limitation of the choice of the foreman to 15 per cent. out of 100 per cent.; (4) The fear of the foreman that even that 15 per cent. was to be taken away from him and cancelled; (5) The defiant attitude of certain of the men sent by the Society; (6) The failure of the State Labour Board to examine the men as to their qualifications; (7) The impotence of the State Labour Board to refuse the nominees of the Society: (8) The admission of the officers of the Society that it sends, good, bad, and indifferent men; (9) The loss occasioned through engagement of men before knowing if they are capable or otherwise; (10) Retention of men for fear that others less suitable may be sent in their places; (11) Then, according to the evidence, general slowing down and working in the usual manner; (12) Hesitation to dismiss, being morally certain that political influence would be brought to bear to reinstate and to cause further loss of control; (13) Actual reinstatement after dismissal; (14) Right of appeal given to all dismissed; (15) Anticipation that concession given to Labourers' Protective Society to retain shop foreman throughout the whole job would at any time be applied to masons; (16) Interference of the Society and the shortening of the hours worked on the building by the setters, and consequently by the crane-drivers and dog-men; (17) Loss of one-twelfth of the working time of the cranes as a result; (18) Increase of the wages to carters; (19) Impossibility of putting on well-known good men when they came to apply to the foreman for work; (20) Want of inducement to good men to stay on the job because they knew they could not be engaged by the Government on the next one; and (21) Having to deal with men like W. S. Thompson.

With the exception of those numbered 16, 17, and 18, these suggested causes of the excess arise out of the alleged harmful effect of political interference or the injurious operation of the Rotation System and the consequent taking out of the hands of the officers of the Department the power of selecting men for the work. It is as well, perhaps, to give here a short account of what the "Rotation System" is, and how it came into operation.

Account of the Rotation System.

The system arose out of one of the regulations of the State Labour Board, a body which was brought into existence in December, 1901, by the Minister for Public Works. The reasons for the establishment of this Board are best shown by a quotation from the evidence of Mr. Davis, the Under Secretary for Public Works, page 1555. He there says:—

> During November, 1901, the Honorable J. Carruthers gave notice in the Assembly to introduce a Bill for the establishment of a Board to control State labour. The Minister had various consultations with me on the subject, and obtained expressions of opinion from several officers also, regarding the provisions of the measure. At this time Mr. O'Sullivan was dealing personally with applications and found it impossible to continue to do so owing to the tremendous demands it made on his time. Another point that had weight with him and pointed to the necessity of establishing some body to control the employ of artisans, &c., was that in dealing with *bonâ fide* working men, he found they strongly objected to identify themselves with the Labour Bureau, and the men who sought work of a purely relief character there. Ultimately, after going into the matter with the Minister, he decided to establish a State Labour Board, which was done on the 4th September, 1901. Mr. Hanna was appointed President, and a representative from each brauch, as under:—
>
> | | | |
> |---|---|---|
> | Mr. W. A. Smith | ... ... | Roads and Bridges |
> | Mr. J. W. Grimshaw | ... ... | Harbours and Rivers |
> | Mr. F. E. Wickham | ... ... | Railway Construction |
> | Mr. Wm. Smith... | ... ... | Water Supply and Sewerage Construction |
> | Mr. A. J. Purdue | ... ... | Government Architect |
>
> constituted the Board.

To this Board was entrusted the duty of registering the names of all artisans and others seeking employment on public works, as distinguished from purely relief works. The Board drew up a series of regulations for the registration and employment of men (*see* Exhibit No. 161), one of which, No. 3, reads as follows :—

> 3. *Selection of Men.*
>
> The ordinary method of selecting men shall be by rotation, which shall be fixed by priority of registration.
>
> For special work, however, men may be selected according to their qualifications or fitness for such work.

State Labour Board Regulations.

Under

Under this regulation, when men were required for any public work, they were sent to the officer-in-charge in order of their registration, 50 per cent. of the number required being sent by the State Labour Board, and 50 per cent. from the Trades Hall branch of the Labour Bureau. These numbers were exclusive of leading men in the special trades, whom the officers in charge were allowed to select themselves. At first the officers were practically untrammelled in their selection of these leading hands, but by minute of the 5th May, 1902, the Minister for Public Works directed that officers should have the right to select 25 per cent. of the men to be engaged, the remainder to come equally from the State Labour Board and the Trades Hall Registry. In the same minute the Minister gave instructions that—

Minister limits rights of officers to select men to 25 per cent.

If members of the Stonemasons', or any other Society, did not care to register, then the secretary of the society should send in the names of the men out of work, and they could be put on by rotation.

The decision of the Minister to allow officers the selection of 25 per cent. of the hands does not appear to have given satisfaction to the trade societies, for, on the 26th of June, 1902, a deputation from the Stonemasons' Society and other trade unions waited upon the Minister to urge that the minute be rescinded. The Painters' Society complained that the Government Architect's employees were being transferred from one job to another, thereby monopolising the work to the detriment of other men. The Society were anxious that when a work was completed all men should be paid off and fresh men taken on in rotation. The Minister promised to have inquiries made, and then issued the following instructions:—

Let this practice be discontinued. One set of men should not monopolise State work whilst others are suffering from want of employment.—E. W. O'S.

Minister directs that practice of transferring men from one work to another be discontinued.

It had previously been the custom of the Department to transfer certain leading hands from one job to another, which, of course, this decision put a stop to. It was made a strong point by the contractors that this must have an injurious effect upon the cost of the work. They stated that it was their practice to keep good men as long as they could and transfer them from job to job. Mr. Stuart, in his reply to Question 11838, gives an eminently common-sense view of the matter, which must commend itself to any impartial person. He said, in reply to Mr. Pringle:—

Contractors state they keep good men and transfer them from job to job.

11838. *Q.* I might explain myself in this way: I would like your opinion on this point. You know and I know, and everyone connected with the building trade knows very well, that it is not always the first-class mechanic who becomes an employer; occasionally he does, but sometimes he does not. Now there must be some quality in the employer that makes him an employer, and it has always appeared to me that it is simply the faculty of organisation, and without that faculty he could not be an employer at all. It is a process of natural selection, just the same as anything else. I would like you to give the Board your opinion on that? *A.* This touches upon a question that has often been discussed in the press and other places, as to why it is that the day-labour work cannot be done as cheaply as by contract, because, in spite of the inspired statements that have been issued from the Department, and such ridiculous statements as were made by Mr. O'Sullivan at Newcastle the other day, there remains the fact, which I think is generally admitted, that day-labour work is more costly than that done by contract. And to the uninitiated, it seems a strange thing that the officers of the Department cannot do it as cheaply as by contract. Well, the builder, or builders I should say, are really the survival of the fittest. Among all those who start a certain number go down; and among those who keep their heads above the water there are different classes. There are some who make only a living; they are a very large number. Some have little success; they are a smaller number. And there are some that make the business a complete success; they are specially qualified. The difference between these systems, as far as I can see, is this, that the builder has not only to have a knowledge of the trades in one case, a practical knowledge in one, and the other a theoretical knowledge, but he has to have a thorough grounding in commerce. He must aspire to have complete control of everything that he handles. The men must be absolutely under his control. He must be able to do things at a moments notice; to purchase material at the very lowest possible price, and in doing that, his business must be very extensive, and he must know the people who have certain articles for sale, which will perhaps suit him. It is no use going to the market and saying "I want this, that, or the other thing." He must know the men who sell the cheapest. Then he must have his men thoroughly well organised. He must have his foremen, and unless these foremen have been with him a considerable time, there is always a considerable leakage there. I would sooner have a foreman who was an indifferent man, than a good man who was not used to my ways, for this reason, that the man knows the work required. Then again, the foreman must have the choice of his men within reason. I never give any foreman unrestricted control of everything, but the longer the men work with an employer the better they are for that employer, and the oftener that he can draft men from one job to another, the more chance there is for the work being carried on successfully. What struck me as most absurd was the statement about not keeping men going. I have had men for sixteen years, several of them; others ten, twelve, thirteen, and eight years. I could name a score of them. Now they all work for that and they know the job is worth keeping. If I had to dismiss these men and take on a new squad, they would all be new to me. I differ from Mr. Grant when he said a qualified tradesman only wanted the template and the stone and to shape it. I found that the men wanted very careful

careful watching and every employer has had the same experience. Now, if I were to dismiss my men at the termination of a job, I should have to start fresh men, and that means that I would be in almost the same position as at the beginning. And it is there that I believe the Rotation System seriously affects the Goverenment Architect. There is not the slightest doubt that the biggest inducement an employer could give his workmen is to give him a long job, and a good pay. And furthermore, if an employer can go beyond that, and give his foreman bonuses and the leading hands, and meet them in their difficulties and troubles, he gets around him a number of men who really work for all they know and for their employer's interests. There is a feeling of mutual interest grows up between them—I think that those who have come from the old country have experienced it, but I am sorry to say it does not seem to exist here. But there are factors again in the builder that are almost inexplicable. He has to be a thoroughly keen man of business, and if he is not keen at business, he must quickly go down. He must have a keen knowledge of human nature and must study the idiosyncrasies of people because he must please them. He must be prepared to sacrifice himself or his time, disturb all his arrangements in order to accommodate the people who employ them. However I think I have spoken enough on that.

Mr. Loveridge also stated that it was his practice to keep men on if there was a prospect of work giving out, for the purpose of having them on hand when a job turned up (*see* Q. 14747). Mr. Marsden also gave similar evidence (*see* Q. 14520, p. 1460).

Mr. Marsden confirms statement that contractors endeavour to keep good men on.

14520. *Q.* Do you infer that because of the uniform rate of wage in the Government, a man who could do more than other men would naturally slow down to their capacity;—do you think there is any real ground for that statement? *A.* I think that in the Government service there is not what I would call an inducement, but a tendency towards that, under the Rotation System. A contractor would keep his best men on and employ them over and over again. I know contractors who have taken jobs simply to keep a certain number of good men together so as not to lose the run of them; but in the case of the Government, it does not matter much whether they are good or bad, so long as the work is got through.

View taken by Stonemasons' representatives.

In regard to this matter, the representatives of the Society—Mr. Grant particularly—took what appears to be a very partial view of the question. It was argued that when men were transferred in this way, it was not because they were good men that the Department wished to keep them on, but rather that they were "special pets and favourites" of the officers. Beyond, however, making general statements of this nature, no evidence in support thereof was adduced by the representatives of the Society.

Minister reduces officers' right to select from 25 per cent. to 15 per cent.

As a result of further representations made by the Operative Stonemasons' Society, the Minister decided that the provision for allowing officers to select 25 per cent. of the men should be reduced to 15 per cent. The matter is more fully explained by the circular which was addressed to the Heads of Branches by the Under Secretary on the 3rd September, 1902:—

Circular.

Department of Public Works, Sydney, 3 September, 1902.

Memo. to

With reference to the conditions under which stonemasons are employed on works under your Branch, please note that, in view of certain representations made by the Operative Stonemasons' Society, the Minister has decided—

That on the completion of any job, or portion thereof, the masons employed shall not be transferred to other works, but discharged.

That the arrangement providing for overseers, specially selecting 25 per cent. of the men required, be amended to the extent of 15 per cent. only being thus selected; the men to be engaged through the State Labour Board from men registered on the books as unemployed, and not, as before, at the discretion of the overseer.

J. DAVIS,
Per W.J.H.

Stonemasons' Society wish right of officers to select men to be cancelled altogether.

It would appear, however, that the Stonemasons' Society, at any rate, was not satisfied with even this concession. Mr. Grant, the Secretary of the Society, claimed that there should be no limitation whatever; that the full 100 per cent. should be appointed from the list furnished by him.

The following quotation from his evidence explains the position he takes up:—

5745. *Mr. Vernon.*] *Q.* Now give the Board, if you will, some little information as to the progressive stages under which the choice of men—I will put it in that way—has gradually gone from the Department into the hands of your Society, or into your hands as representing the Society;—just tell the Board the several progressive steps; when did you first begin to make this new step? *A.* We did not begin the Rotation System. The Rotation System was established by the Minister. We never asked for it.

5746. *Q.* How long ago was this? *A.* The first knowledge I have got of the establishment of the Rotation System was on December 4, 1901. On that date the Trades Hall Branch, I believe, was established.

5747. *Q.* What was the concession granted then;—what proportion of men? *A.* The information that was understood at that time was that all the men then working for the Department would require, when that job was finished, to come out and re-register their names. Prior to this time the selection of the men was supposed to be in the hands of the foremen, frequently in the hands of Mr. Cook, Mr. O'Sullivan, or any other Minister.

5748. *Q.* You have not told us the proportion—tell us the percentage of the men;—what percentage of men did this arrangement first have? *A.* I could not tell you how many were forced on to Mr. Ryce by the Department or the Minister, but I went back as far as the State Secretary's Offices, and showed how Mr. Ryce at that time practically started no men at all. What you wish me to bring before the Board is the gradual evolution of the present system of rotation?

5749. *Q.* Yes. *A.* That has been given fully in my statement. I have no objection to repeat it if the Board wish it.

5750. *Q.* It began with 50 per cent.? *A.* When the masons were working at the shed at Pyrmont in January, 1902, it transpired when that job was finished that they would require to come out and re-register their names. At this time the Trades Hall Branch and the Head Office of the State Labour Board were established, and instructions were issued that half the men required were to be taken from the Head Office of the State Labour Board and half from the Trades' Hall Branch.

5751. *Q.* That is incorrect, that is 100 per cent? *A.* But it was explained by the Minister in a paragraph on the 26th January that it was not intended to apply that system to the masons then working at Pyrmont. He said they need have no fear as it was not intended to apply the Rotation System to them. So that up to that time, presumably, the foreman selected the whole lot. We know he did not.

5752. *Q.* Then he selected 50 per cent.? *A.* Selected them all.

5753. *Q.* After that? *A.* After that——— [*Interrupted.*]

5754. *Q.* We selected half? *A.* No, as the result of prolonged negotiations, the Minister insisted upon the foreman having the right to select 25 per cent. and the remaining 75 per cent. were to come from the State Labour Board Head Office, and the Trades Hall in equal proportions.

5755. *Q.* After the 75 per cent., what then? *A.* Then, of course, we strongly objected to the 25 per cent. being put on by the Departmental Officer, and the Minister, and Mr. Ryce.

5758. *Q.* The 75 per cent. was then increased to 85 per cent.? *A.* Yes, as the result of further representations, the 75 per cent. was increased to 85 per cent.

5762. *Q.* Now you require the whole lot? *A.* Yes.

Position taken up by the Stonemasons' Society.

The position taken up by the Stonemasons' Society is very clearly shown by the evidence of their representatives. It is shortly this: that the masons, being citizens and taxpayers, are entitled to employment upon State work in rotation as opportunity occurs, and that, in fact, all should have a share of such work at some time or other.

They contended that, although they were in no way responsible for the introduction of the Rotation System—it having been introduced by the State Labour Board without any reference to them—they were strongly in favour of it on the ground that it gave every man an equal chance of obtaining State employment.

Every man should have a chance of State employment in turn.

Mr. Grant, the Secretary of the Society, said (p. 446, q. 4481) :—

Rotation System only one that will accomplish end desired by Stonemasons' Society.

I wish to make this point clear: in order that the whole of the members of our Society should have an equal chance of getting State employment, if they want it, there does not appear to us to be any other system, excepting the Rotation System, that will accomplish that end.

He further said (p. 568, q. 5777) :—

. . . We want the members of our Society to be able to get employment in rotation, irrespective of whether Mr. Ryce, Mr. Cook, or Mr. Vernon, or Mr. O'Sullivan likes it.

See also Questions 6940–1, p. 674, as follows :—

6940. *Mr. Stuart.*] *Q.* As a matter of fact you are strongly in favour of day labour, are you not? *A.* Yes.

6941. *Q.* Now what do you mean by telling the Board that you are in favour of day labour? *A.* Because I believe in extending the functions of the Government as an employer in every direction on account of the inability of private enterprises to provide continuous work with fair remuneration to the workers.

Again, in his address, page 1785, he said :—

. . . We would much prefer a system whereby we would get a show of securing employment there, entirely apart from Mr. Vernon, Mr. Cook, Mr. Ryce, or Mr. O'Sullivan. We do not want favouritism at all. We want to get there by reason of our being tradesmen, and by reason of our being citizens. There is no system, except the Rotation System, under which we can get there.

Mr. Thomson said (page 809) :—

8186. *Q.* Do you believe in the Rotation System? *A.* Yes.

8188. . . . I believe in it on the ground of fairness.

Masons admit that Foreman should have full power of dismissal.

On behalf of the masons, it was admitted, however, that if a man were not up to the mark, he should not be kept on, and that the foreman should have full power to discharge men whom he did not consider to be competent. It was claimed that in this way the Rotation System practically became a system of selection (see evidence of Mr. Grant on this point, pp. 570–1) :—

5800. *Q.* . . . . although we insist upon, and although we believe all the members, irrespective of whether they are liked or disliked by the foreman, so long as they are competent men, they should have an opportunity of getting employment at some time or other on State works. We have never objected when a foreman discharged any man for being incompetent; we have never said a word about it, and so long as the foreman holds the power of discharge, it practically means he has the power of selection.

Again, pages 1772-3 (Mr. Grant's address) :—

. . . . . While we insisted upon all the members of the Union getting a fair chance of securing employment, we have never offered the slightest objection to the foreman discharging any mason, which left him with an absolutely free hand to secure practically the selection of the men he wanted. . . . . If the men employed were not suitable, all the foreman had to do was to call for more men, and if they were unsuitable, to weed them out. To that course the masons' Society have never offered the slightest objection, and for very good reasons, or for reasons that appear to us to be quite satisfactory, there was never any objection offered by us to that performance of his duty on the part of the foreman.

Mr. Dumbrell, on page 730 (q. 7468) said :—

We have never questioned the right to discharge men at all.

Mr. Thomson also, in his address to the Board at the conclusion of the inquiry, contended that any given number of men taken on under the Rotation System would be equal in capacity to any like number who could be obtained under a selection system (p. 1799).

Stonemasons' Society has never interfered in regard to the discharge of men.

The representatives of the Society admitted that the power to discharge on the part of the responsible officer must be complete, and they urged that the Society had never interfered in this regard.

Mr. Grant (p. 568, q. 5778) said :—

I wish again to endeavour to impress upon the Board that our Union has never at any time objected when Mr. Ryce has discharged a man. . . . .

Again, (p. 719) Mr. Grant states :—

7351. *Q.* . . . . I want to ask you if at any time the stonemasons have interfered with any foreman on any day labour job? *A.* No, they have not.

7352. . . . . The Stonemasons' Society has not interfered with any foreman on any Government day labour job.

7353. . . . The Society has taken no action whatever in opposition to the action of any foreman in discharging men from Government day labour works.

Mr. Dumbrell, on page 730 (q. 7469) said :—

. . . . We have never questioned the right to discharge men at all.

Case of Lauderdale.

It was admitted, however, that the Society did interfere in the case where one man was discharged. This was with reference to a mason named Lauderdale, who left the employment of Mr. Howie, contractor, to take work at Prince Alfred Hospital, he having been offered work there in consequence of his name being on the rotation list. Mr. Howie brought the matter under the notice of the Minister, and as Lauderdale's action contravened one of the direct instructions of the Minister, that only men out of employment should be given work, and that men should not be allowed to transfer themselves from the service of a contractor to that of the Government, he was discharged. Upon this being done, a deputation from the Stonemasons' Society waited upon the Minister.

Minister's explanation of his action in reinstating Lauderdale.

The Minister's action is best explained by his own statement, given in evidence before the Board (*see* pages 1629-30). He said :—

. . . . the circumstances were exceptional. On the representations of the Society there appeared to me to be extenuating circumstances, and as an act of grace and consideration, I gave him another show. As to Grant's assertion that effective words, &c., were used (q. 6543) this must not be regarded as indicative of pressure, for there was not any. The statements made rather appealed to my sympathy, and convinced me that there were exceptional circumstances, so I sent the man back to work.

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It was claimed by Mr. Grant, on behalf of the Society that in this particular case they were not using political pressure in the sense of having a man sent back to work who had been discharged for a good and sufficient reason. His explanation went to show that the Society took action because they thought that the Minister's decision, in consequence of which the discharge was made, was wrong. (See Mr. Grant's answers to Mr. Vernon, p. 637, qs. 6543-7).

It was practically admitted by the officers of the Department that the foreman had full power to discharge, and that the Society, except in the case of Lauderdale, before referred to, had not interfered. It was, however, contended that the Minister had interfered and ordered the reinstatement of men who were discharged, and that the foreman was intimidated and afraid to exercise proper control; that, in fact, the power to discharge had been greatly interfered with, if not rendered a nullity. Interference with Foreman.

The following quotations from evidence will show this shortly :—

On page 15, Mr. Vernon, in answer to Question 74, said :—

74. *Q.* I think you said your foreman, Mr. Ryce, had a reluctance to discharge men, although they were not satisfactory? *A.* Yes.

75. *Q.* What was the reason? *A.* Mr. Ryce is a man who attends to his work, and who is anxious to be on good terms with those he works with. If Mr. Ryce discharged all the men below a certain standard, not necessarily poor workmen, his life would not be worth living.

Mr. A. S. Cook (p. 201, q. 1802) said :—

1802. *Q.* Have you not the full power of dismissal? *A.* It is comparatively worthless. The power we want is the power of putting on and selecting.

Under the circumstances, it is perhaps not surprising that the foreman was influenced in his action with regard to the discharge of men. In the first place, it was shown that a report made by the foreman in regard to the qualifications of an applicant for employment on the works, which one would think should have been regarded as a confidential document, was disclosed to the applicant, and that, in consequence, proceedings were taken in the Law Courts against the officer (see evidence of Mr. Cook, pp. 22, 23, qs. 177-197). It may be mentioned that the action at law resulted in a verdict being given for the officer without his being called upon to give evidence, the Judge remarking that it would be a most improper thing for a report, made *bona fide* in the course of public duty, to be made the subject of such an action (p. 317, q. 3129). Disclosure of report made by Foreman respecting applicant for employment.

But the effect of political interference would naturally be most felt when it took the form of influencing the re-employment of men who had been discharged. Beyond the case of Lauderdale, already referred to, it was not shown in evidence that any mason who had been discharged had been re-employed at the Prince Alfred Hospital on the instructions of the Minister, but in another case, viz: that of Walter Thompson, a gantryman, or skilled builder's labourer, it was shown that the Minister had interfered, with what must have been most unfortunate results to the authority and influence of the officers in charge of the work. Effect of political interference. Case of Walter Thompson.

It would appear that Thompson was originally employed at the instance of Mr. O'Sullivan, Minister for Works, who forwarded the following memorandum to Mr. Vernon on the 12th September, 1902 :—

If a good man at scaffolding and gantry work is required, send for Walter Thompson, 17 Maria-street, Newtown.

(See evidence of Mr. Vernon, q. 8554, p. 841; also Exhibit No. 110).

At that time Thompson was employed at the erection of the Car Shed at Fort Macquarie, and did not present himself to the forman-in-charge of the labourers at the Hospital (Mr. Thornton) until a week afterwards, when he was immediately put on as gantryman and builder's labourer at 9s. per diem. After working for seven weeks, he was informed by the foreman that as the gantry work was completed, and there was no other skilled labouring work upon which he could be employed, his wages would be reduced temporarily from 9s. to 7s. per day—the rate of an ordinary, unskilled labourer—pending further work becoming available, for which it would be proper to pay the 9s. per day. Thompson, however, refused to accept the reduction, and asked for his discharge. He thereupon appears to have obtained

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an interview with the Minister for Public Works, through Messrs. Sleath and Hollis, Ms.P., and after hearing his version of the case, the Minister gave him a letter addressed to Mr. Thornton, the foreman, directing his reinstatement. The letter was as follows:—

Mr. Thornton, 11/11/1902.

I sent Mr. W. Thompson out as gantryman and erector of scaffolding. He is one of the best workmen of that kind in the State, and carried references which prove him so. Put him back into his position. I expect my instructions to be carried out.

E. W. O'SULLIVAN,
Minister for Works.

It is to be noted that the Minister, before writing this letter, did not apparently make inquiry as to the officer's side of the question, and that his instructions for Thompson's reinstatement were addressed to the foreman direct, and not sent through Mr. Vernon, the responsible head of the office. On Mr. Vernon, however, becoming aware of the instructions for Thompson's re-employment, he brought the matter under the attention of the Under Secretary in a memorandum dated 14th November, and suggested that, as there was no further skilled labouring work available at the time, it was only reasonable that Thompson should be content to remain as a general labourer until an opportunity occurred for his being put upon work for which the higher wages of a skilled labourer could be paid. The Minister approved of this suggestion on the 19th November, but on the same date, on other papers submitted to him in regard to two skilled labourers required at the Fisher Library, he directed that Thompson and another man named should be employed there. This instruction was, of course, carried out (*see* Exhibit No. 110).

This incident of Thompson's reinstatement was referred to in the course of the inquiry by Mr. Vernon, as an instance of the interference with the authority of the foreman. Thompson apparently heard of this, and instigated Mr. R. Sleath, M.P., to write to the Board (see his answer to q. 17271, p. 1870). This letter is as follows:—

Dear Sir, 4 September, 1903.

It having come to my knowledge that in the inquiry into the Prince Alfred Hospital and the Fisher Library, in regard to the Day-labour System, a strong objection seems to exist in allowing any but those opposed to the system giving evidence, I most strongly object. My name having been mentioned, I ask that not only I, but all those that are interested, should not only be called and allowed, but that every opportunity given them of giving evidence, otherwise the whole inquiry will be a farce.

Trusting you will give me an early reply, and oblige.

I am, yours, &c.,
R. SLEATH.

J. Barling, Esq., Chairman, P.S. Board.

It will be observed that Mr. Thompson's name is not mentioned in the letter, and when it was received the Board were at a loss to understand the meaning of the communication. At the next sitting of the inquiry, therefore, which took place on the 7th September, the letter was read, and the representatives of the Stonemasons' Society were asked if they could throw any light upon it, and whether they had any cause for complaint in regard to the opportunities given them of submitting evidence. The following extract from the proceedings of that date will more fully explain the matter:—

16084. Mr. Barling: The Board are at a perfect loss to understand its meaning. I have got a sort of impression that Mr. Sleath's name was mentioned, but I cannot recall it exactly. Can anyone help me?

16085. Mr. Grant: Politicians will advertise themselves, Mr. President.

16086. Mr. Barling: Mr. Grant, so far as you and Mr. Thomson are concerned, I think you have had the fullest opportunity of bringing forward any evidence you wished.

16087. Mr. Thomson: No cause for complaint at all.

16088. Mr. Grant: None at all.

16089. Mr. Barling: You do not wish to call Mr. Sleath?

16090. Mr. Thomson: No.

16091. Mr. Barling: It is perfectly enigmatical to me. Mr. Sleath makes another mistake. He says we are inquiring into the day-labour system. We are doing nothing of the kind, but, of course, incidentally it comes in.

16092. Mr. Barling: Would you like to call Mr. Sleath, Mr. Grant?

16093. Mr. Grant: No, I would not.

The

The next day, viz., the 8th September, the Board directed that a reply should be sent to Mr. Sleath, of which the following is a copy :—

Dear Sir, Public Service Board, 50, Young-street, Sydney, 8 September, 1903.

I am directed to acknowledge the receipt of your letter of the 4th instant, received yesterday, in which you state that, "It having come to my knowledge that in the inquiry into the Prince Alfred Hospital and the Fisher Library, in regard to the Day-labour System, a strong objection seems to exist in allowing any but those opposed to the system giving evidence, I most strongly object," and I am to point out that the Board are not inquiring into the Day-labour System generally, but into the question of the alleged excessive cost of the Prince Alfred Hospital additions. It is a fact, however, that certain questions bearing on the larger question, have necessarily been brought up in connection with the specific inquiry engaging the attention of the Board.

The Board are at a loss to understand the reference in your letter to the alleged objection to receiving evidence, unless it be that bearing on one side only of the matter at issue. If this were so, I am to point out that the whole proceeding would be worse than a farce. The Board are only too glad to receive evidence from any quarter relating to the subject of this inquiry, and if you, or anyone else, is able to give them any pertinent evidence, they will be only too glad to receive it.

Yours &c.,
J. W. HOLLIMAN,
Secretary.

No further letter was received from Mr. Sleath, but Mr. Thompson himself wrote to the Board as follows :—

Sir, 78, Maria-street, Newtown, 2 September, 1903.

Having been led to understand that my name has been freely used in connection with Fisher Library and Prince Alfred Hospital, I ask for a hearing to enable me to defend my own character and reputation, which is now at stake, owing to the insinuations contained in the report submitted to the Board.

I have, &c.,
WALTER S. THOMPSON.

Mr. Barling, The President, Inquiry Board.

Mr. Thompson was informed by the Board, in reply, that nothing detrimental to his character and reputation had been given in evidence at the inquiry. He then waited upon the Chairman, and stated that he wished to appear to show that the action of the Minister for Public Works in directing his reinstatement had been represented at the inquiry in an improper light; that according to the report which had been submitted it would appear that he was practically forced by the Minister upon the foreman when he had no further use for his services as gantry labourer, whereas he wished to prove that it was simply an act of justice on the Minister's part instead of an act of tyranny. (*See* q. 17246, p. 1867.) The Board decided to give him the opportunity he desired of tendering evidence, and he appeared before them on the 16th and 22nd October. He then gave an account of the action he took on receiving from the foreman the notice of the reduction of his wages. His evidence graphically describes the incidents of his visit to Parliament House, and forms very interesting reading. After reading from a statement, which he said was an account of what he stated verbally to the Minister, but which he admitted was written eight months after the interview, he then, in answer to questions, gave the following account of his visit :—

17313. By Mr. Mant.] . . . . I went up to the House and I met Mr. Sleath in the lobby going out to get his tea. I said to him, "Good night, Dick," and he said, "Good night, Wal." I said, "I want to get an interview with the Minister, and will you get an interview for me?" and he said he would. He never asked what the business was.

17314. *Q.* Why did you not go to Mr. Vernon? *A.* Because I would have had no chance through Mr. Vernon.

17315. *Q.* You did not think you would get fair play? *A.* No.

17316. *Q.* You preferred to go to the Minister? *A.* Yes; I preferred to go to the head of the tree than to go through a sewer.

17317. *Q.* Are you paid 9s. a day? *A.* Yes, I am, and still following the same class of work for Howie Bros., at the new fruit markets.

17318. Mr. Barling.] *Q.* Where did this interview take place with the Minister? *A.* At the House.

17319. *Q.* And did he write a minute there and then? *A.* Yes.

17320. *Q.* He there and then gave you the minute? *A.* Yes.

17321. *Q.* What took place after, when you saw Mr. Thornton? *A.* I met Mr. Thornton on the job. He said "Good morning," and I said "Good morning"—(*interrupted*).

17322. Did you take the letter straight to Mr. Thornton? *A.* Yes.

17323. Mr. Barling.] *Q.* What took place? *A.* He started me on my work. I got there that morning at about half-past 7, in order to start at a quarter to 8. Both Mr. Jeffries and Mr. Thornton were a little late. Mr. Jeffries passed me and I wished him "Good morning." Mr. Thornton came along and he said, "Good morning, Thompson," and I said, "Good morning." He said, "What about it?" and I said, "I don't know, this might explain the matter to you." He read the letter, and said to me, "Did you tell the Minister everything I said?" and I said, "Yes, as far as I could recollect it."

it." He asked whether I knew of any 9s. work that I could do, and I said I did. He asked me what it was? I said there were three or four bags of lime in the heap that could be turned over, and in the meantime he could look round too. I turned to with the bricklayers and knocked over those three or four bags of lime that day, and next morning I was still turning the cement. I had been at this work the fortnight before. Next morning Woffingdon came along and said, "You can't stop there!" I said, "All right." He said, "You can get into the gantries and clean all the planks out," and sent an old chap by the name of Richard Crosby to take the planks from me as I knocked them out of the gantry and handed them down.

17324. *Q.* How long were you employed after that? *A.* Eleven days.

17325. *Q.* Eleven days at 9s. a day? *A.* Yes.

17326. *Q.* What made you leave then? *A.* Mr. Thornton then came and said I was to go over to the Fisher Library. He said he supposed it was scaffolding, and that I could make out the time-sheet for both jobs. I said, "I would not trust you that far old man," and I went into the office and put on the sheet for gantry and scaffolding the same as I had done before.

17327. *Q.* Did Mr. Thornton sign the sheet? *A.* No; I handed it to Mr. Jeffries, and then went straight to the Fisher Library.

17328. Mr. Mant.] *Q.* How long have you known the Minister, Mr. Thompson? *A.* About twenty-three years.

17329. *Q.* I suppose you have been to him before for employment? *A.* Never. I never wrote one letter to the Minister for Works in my life for work. I would like to say this: I practically knew nothing whatever of my being recommended to Mr. Vernon until I received the docket from Thornton.

17330. Mr. Mant.] *Q.* You were sent for before, but said you had other work? *A.* I practically knew nothing of that recommendation whatever.

17331. Mr. Thomson.] *Q.* Who instigated the Minister to write to Mr. Thornton? *A.* That I cannot say. I am just as much in the dark as you are. I never approached the Minister until I went to him with reference to the reduction of the wages from 9s. to 7s.

17332. Mr. Barling.] *Q.* And on the same night you went to the House, and the circumstances you have described took place? Yes.

17333. Mr. Mant.] *Q.* Did you ever send anyone to the Minister? *A.* No; I am pretty well known, and perhaps some of my friends have spoken on my behalf.

Thompson also stated that Messrs. Sleath and Hollis, Ms.P., were present at his interview with the Minister (q. 17306), and that they used some pretty strong statements (q. 17307).

Thompson alleged that the real reason for his discharge was spite on the part of Thornton, arising out of some fracas which occurred at a picnic that took place some months previous to the date of his employment, on which occasion he said he had to remonstrate with Foreman Thornton for improper behaviour. He also alleged that the ganger, Woffingdon, had some animosity against him on account of a trade union dispute (they being apparently leading members of rival unions), and that Woffingdon had instigated the foreman to discharge him. Thornton, however, denied that this was the case, and he swore that he did not know Thompson until he came to him to be employed (*see* qs. 1429–30). He stated that Thompson did his work satisfactorily, and that the sole reason for the proposed reduction in his wages was the completion of the gantry work by that time (q. 17447). Other skilled labourers were treated in the same manner, and they all accepted the reduction with the exception of Thompson (q. 17454).

In regard to the allegation against Woffingdon, Thornton stated that so far from Woffingdon having spoken detrimentally of Thompson, he had spoken well of him, and reported him as being a good labourer (see q. 18237). Thornton also stated that when Thompson was re-employed at the Minister's direction, work at 9s. per day had practically to be made for him (see qs. 17459–60).

Thompson apparently is a good workman; but the Board can quite understand what a disturbing effect his reinstatement would have upon the authority of the foreman, and also upon the discipline of the men employed upon the work. It should also be stated that his conduct towards Foreman Thornton at the inquiry was very reprehensible. He practically brought a charge of a most serious character against Thornton, alleging that he had been reported by nurses at the hospital for misbehaviour (q. 11722, p. 1896). For this charge it was shown there was not the slightest foundation, and he afterwards withdrew it and apologised to the Board and Thornton (*see* qs. 18207–09, p. 2072).

Professor Anderson Stuart, in his evidence, p. 2099, said, in regard to Mr. Thornton:—

> He seems to be a man who is always at his work. I have never seen him idle; I have never seen him do anything he ought not to do; and, so far as I can form any opinion about him, I do not think you could have a better man than Mr. Thornton.

It is but fair to Messrs. Grant and Thomson to state that they entirely disclaimed any sympathy with the attitude taken up by the witness, Walter Thompson;

Thompson; and, in fact, they strongly resented his appearance at the inquiry. Mr. Thomson, at the conclusion of the inquiry, expressed himself upon the point in the following way:—

18439. Mr. Barling.] Mr. Thomson had not the opportunity, like the rest of the speakers had, of commenting upon the statements which have been made by Mr. W. S. Thompson, and it is only fair to him that he should have an opportunity of addressing the Board on that subject. I gather that Mr. Thomson is entirely at variance with the position taken up by that witness, and he wishes to put the views of the Society before the Board.

18440. Mr. Thomson.] Mr. Chairman and members of the Board, it is an experience I do not wish to meet with again; and on behalf of Mr. Grant, myself, and the Stonemasons' Union, I wish to say that we have never at any time taken up the attitude of that witness, and I do not think we ever will take up such an attitude. . . . .

With reference to the letter of Mr. Sleath, quoted on pages 92 and 93, and the Board's reply thereto, quoted on page 94, it may here be stated that after the conclusion of the inquiry—viz., on the 12th November—Mr. Sleath referred to the matter in the Legislative Assembly during the course of the debate on the Western Lands Amendment Bill. He said, referring apparently to this inquiry, that "they (the Board) had three or four contractors there without rhyme or reason attacking a certain principle, and incidentally they attacked me, and the Board refused to allow me to be heard before them." On the Board's attention being drawn to this statement when it appeared in *Hansard*, they caused the following letter to be written to Mr. Sleath:—

Dear Sir, Public Service Board, 50, Young-street, Sydney, 16 November, 1903.

The attention of the Public Service Board has been drawn to *Hansard* of the 12th instant, in which, in connection with the debate on the Western Lands Amendment Bill, you are represented as having said, with reference to the Board, "They had three or four contractors there without rhyme or reason attacking a certain principle, and incidentally they attacked me, and the Board refused to allow me to be heard before them." The Board presume you were referring to the inquiry, which was recently held in connection with the erection of the Prince Alfred Hospital pavilions, and they direct me to state that no attack was made upon your character during the course of that inquiry; and with regard to your statement that they refused to hear you, they can only come to the conclusion that you did not receive the letter which was sent to you on the 8th September last, in reply to yours of the 4th of that month. It will be seen by this letter, of which I enclose a copy, that not only did the Board not decline to hear you, but, on the contrary, that the Board would be glad to receive any evidence pertinent to the inquiry from yourself or anyone else who is able to give it, and they will be prepared now to receive any evidence from you that you wish to offer.

Yours, &c.,
J. W. HOLLIMAN,
Secretary.

R. Sleath, Esq., M.P., Parliament House.

Up to the date of this report being submitted, however, no further communication had been received from Mr. Sleath on the subject.* Mr.

* NOTE.—Since this report was forwarded to the Government the following letter has been received by the Public Service Board from Mr. Sleath, M.P.:—

Dear Sir, Parliament House, 3 December, 1903.

Yours of the 17th instant to hand. My reason for not replying sooner was that I met with a rather nasty accident, and have not been able to be in town before, therefore did not get your letter. You are kind enough to forward to me a copy of a letter dated 8th September, and in that you quote from my letter of the 4th, in which I state—"It having come to my knowledge that in the Inquiry into the Prince Alfred Hospital and the Fisher Library in regard to the Day-labour System." Now, surely that is plain enough when I distinctly mention the name of the work that the inquiry is held in regard to, therefore where the necessity of stating that the Board are not inquiring into the Day-labour System generally.

In regard to my complaint it was not that any personal attack was made upon my character, but my name was mentioned in regard to the discharge of an employee who was afterwards re-employed by the direction of the Minister. I brought the matter of his discharge before the Minister, supported by Mr. Fallick and other Members, who were qualified to judge as to his ability as a workman. His case having been mentioned, you for a long time refused him his undoubted right to clear his own character, while you had around you continually a number of contractors who had nothing to do with this particular work. They never put in a tender, and as you point out in your letter to me, this inquiry was dealing with a particular work in which they were not interested in the slightest, yet we find that they become almost the judges, while a workman for a long time is refused a hearing even to clear his character. My reason, or at least one of them, for taking any action was the grossly unfair report issued in regard to the Fitzroy Dock Inquiry. In that case again a man by the name of Melville came to me almost starving, but produced his references; first, from the largest and most important ship-building yard in Glasgow, where he served his time, and then from a number of other firms with which he had worked, and from those references I am prepared to say that no man at Fitzroy Dock held better references. The Minister gave him a note simply asking if there was an opening to give him a show as his credentials seemed good, and he would be satisfied with any wages that they felt inclined to give him.

Those are the facts which I had no opportunity to bring before that inquiry, as the same system of suppression was exercised then as now, and this case was brought before the public as an awful example of Ministerial influence. The whole thing was a farce, and when the public know the facts I am quite sure that they will refuse to tolerate from a body whose duty it is to give them the truth, the whole truth and nothing but the truth, without fear or favour, any suppression of evidence that puts a false impression on any case.

I am, yours, &c.,
RICHARD SLEATH.

J. W. Holliman, Esq., Secretary, Public Service Board.

With regard to this letter, the Board point out that Mr. Sleath has apparently been misinformed as to the essential facts in the matter at issue. Mr. Walter Thompson's character was not in any way assailed during the inquiry, and he was given the fullest latitude in bringing anything he desired before the Board. As to Mr. Sleath's remarks impugning the fairness of the inquiry, the Board are content to leave the matter to the judgment of the public.

With regard to the case of Melville referred to by Mr. Sleath, the Board point out that the Fitzroy Dock Inquiry was conducted by a Royal Commission entirely outside the Public Service Board, although one of the members of the Board was also a member of the Commission.

Ministerial interference in other Branches.

Mr. Vernon, in q. 8554, referred to other cases in which instructions had been given by the Minister to put men on.

The ill-effect of Ministerial interference does not appear, however, to be confined to the Government Architect's Branch of the Public Works Department. The evidence of officers of other branches shows the difficulties they have had to contend with on this account. Mr. Deane, the Engineer-in-Chief for Railway Construction, refers (q. 11617) to a case where men were discharged by the foreman, and were brought back again. He refers to this case as an illustration of the manner in which the power and authority had been taken out of the hands of the foreman.

Reinstatement of bricklayers discharged for incompetence.

Mr. Wade, Principal Engineer for Water Supply and Sewerage, referred to a case in which a work was absolutely demoralised by two bricklayers, who were discharged for incompetence, having been sent back by the Minister. His account of the matter is as follows :—

12659. Mr. Grant.] *Q.* During the whole course of your experience, how many men have been sent back to you after your foreman had discharged them? *A.* The worst experience we had in the Sewerage Branch was in connection with a couple of bricklayers, who were dismissed by the foreman, and they were sent back. The job was absolutely demoralised.

12660. *Q.* Are those the only two cases you can think of? *A.* Yes.

12661. *Q.* In what way was it demoralised. *A.* The men were dismissed for being absolutely incompetent.

12662. *A.* Were they members of the Bricklayers' Society? *A.* I could not say.

12663. *Q.* In what way was the work demoralised? *A.* The ganger lost all interest in the work.

12664. *Q.* What became of him? Did you still keep him on? *A.* We still keep him on, and the output of the other men was reduced.

12665. *Q.* Was this a fairly large job? *A.* Fairly large.

12665a. *Q.* What job was it? *A.* It was the Marrickville Storm-water Channel.

12666. *Q.* Who was in charge there? *A.* Mr. Peake.

12667. *Q.* And were the bricklayers employed there not doing a fair amount of work? *A.* The men dismissed were not.

12668. *Q.* Subsequently to their dismissal were they not doing a fair amount of work? *A.* They did not improve after they went back.

12669. *Q.* But was the number of bricks laid by the bricklayers subsequent to that event decreased? *A.* I could not give you exact details, but I could get them for you.

12670. *Q.* Which one is that? The last or the first one? *A.* The first one.

12671. *Q.* Who was foreman over the bricklayers? *A.* I forget who he was.

12672. Mr. Grant.] Because I saw them working there, and they were giving a fair output when I was looking on.

12673. Mr. Barling.] *Q.* Who sent them back? *A.* The Minister.

12673a. *Q.* What Minister? *A.* Mr. O'Sullivan.

12674. Mr. Delohery.] *Q.* I understand you to say the other men slowed down when they returned? *A.* I said the work was less satisfactory afterwards than before.

12675. Mr. Grant.] *Q.* Was the number of bricks laid subsequent to that event decreased? *A.* The report was that the work was more expensive afterwards.

Men sent back for further trial.

Mr. Stilwell, the Engineer for Roads, stated (qs. 1350 to 1353) that men who had been discharged had been sent back by the Minister, with a request that they should be given a further trial, and he estimated that this action had been taken with regard to about 10 per cent. to 15 per cent. of the men discharged.

Other officers referred to the effect of political interference in the employment of the men. Mr. Wade said (*see* qs. 12504-08) :—

12504. Mr. Stuart.] *Q.* Have any instances been brought to your knowledge in which men so sent on to the works have been dismissed by your foreman and have come back? *A.* I think Mr. Symonds can tell you that in one or two cases a man has declined to leave ; he told the foreman he could not put him off.

12505. Mr. Delohery.] *Q.* Did he remain on? *A.* He went eventually, but there was some trouble about it.

12506. Mr. Stuart.] *Q.* Did the other workmen know that, Mr. Wade? *A.* I should think it very extraordinary if they did not.

12507. Mr. Grant.] *Q.* How did he succeed in defying the foreman? *A.* In this particular case he told the foreman he was not going, and he went down and joined another gang. Eventually the foreman had to come down to Mr. Symonds to get the man away.

12508. Mr. Stuart.] *Q.* Was he nominated by Mr. Kidd? *A.* I am not certain, but he was a nominee of some sort. I would not be quite certain whose nominee he was.

Again,

Again, in reply to Mr. Vernon, he said (*see* q. 12566) :—

Our experience has been that the man who can only get on to a job by a recommendation from the Minister, or instructions from the Minister, is the most difficult man to deal with on the job.

Mr. Symonds, the Resident Engineer of the Cataract Dam, said, in reply to Mr. Vernon :—

12980. I have had a lot of men that have come through Ministerial influence, we might say; they seemed to think they could ride rough-shod over me, but we had to show them that they could not do so.

See also questions 12991-92 :—

12991. Mr. Vernon.] *Q.* Any trouble you have had with any of the men, has it not invariably been with what you call "Political men?" *A.* Always.
12992. *Q.* That is our experience too. *A.* There has been no trouble with any man that I can remember, excepting he thought he had political influence at his back.

Interference of Stonemasons' Society.

The evidence shows that during the progress of the work the representatives of the Stonemasons' Society frequently waited upon the Minister to bring under his attention various matters in connection with the employment of masons on the work. The evidence of Mr. Grant shows that it was owing to their various representations that the authority given to the officers to select a certain number of men for employment was reduced from 25 per cent. to 15 per cent., and that they afterwards urged upon him that this latter percentage should be done away with.

Deputations to Minister *re* use of Purgatory stone.

Exhibits No. 18 and No. 29 show that deputations waited upon the Minister to bring under notice the excessive use of Purgatory stone in the hospital and other buildings. It appears to the Board to be a great anomaly that the Architect responsible for the work should, in the matter of technique, be open to review practically by the workmen.

Deputation requests discharge of timekeeper.

Exhibit No. 94 shows also that a deputation waited upon the Minister to urge, amongst other things, that the temporary second timekeeper, appointed in connection with the hospital work, should be withdrawn. It may be stated that this timekeeper was employed with a view to taking the time occupied by the masons in cutting each piece of stone, for the purpose of getting accurate data as to the cost. The masons themselves had previously refused to keep the board which would have shown this cost, and their refusal, therefore, necessitated the employment of the timekeeper in question. (*See* evidence of Mr. Cook, p. 202, qs. 1819–26.)

Stonemasons' Society does not believe in political interference. Minister warns representatives of Society that they will kill day labour.

Mr. Grant stated several times that his Society did not believe in political influence, but said that it was necessary to go to the Minister to obtain what they wanted. Take, for instance, his answer to qs. 6514–18, pp. 633–4. Mr. Grant admitted that the Minister warned him that the constant endeavours of the Society to have the right of the Department to select 15 per cent. of the men done away with would result in killing the Day-labour System. The evidence on this point is as follows :—

5767. Mr. Vernon.] *Q.* Have not you been warned by your own men, by your political representatives, and by your Minister, that you will kill the Day-labour System if you go on like this? *A.* In asking for the adoption of the Rotation System?
5768. *Q.* Have not you been warned that you were killing the Day-labour System? *A.* The Minister impressed upon the men the necessity for not asking for the 15 per cent.
5769. *Q.* How did he impress it? *A.* He tried to impress it upon me.
5770. *Q.* He could not possibly do that;—he would try? *A.* He said we would kill the Day-labour System, or something like that.
5771. *Q.* Is not Mr. O'Sullivan one of your best friends? *A.* I do not know.
5772. *Q.* Do you think it is a fair thing to harass the Minister in the way you have been doing in this matter? *A.* Yes; I think if he forces a system upon us, involving coming to you or Mr. Cook, or somebody else, asking for a job, I think it is up to us to show him about once every day that he is wrong.
5773. Mr. Stuart.] *Q.* I was under the impression that Mr. O'Sullivan was a politician? *A.* So he is.

Again, with reference to the Minister's warning, Mr. Grant says (*see* Qs. 5930–1) :—

5930. Mr. Vernon.] *Q.* You have built up here a state of things which the Minister has warned you will kill the day-labour system? *A.* I paid no attention to that.
5931. *Q.* He told you so? *A.* I paid no attention to that, not the slightest. We are going to deal with Mr. O'Sullivan if he insists upon political influence. Allow me again to explain the position: While Mr. O'Sullivan says he insists upon the abolition of political influence, he insists upon retaining it. We want it abolished.

Further

Further evidence on the point might be quoted, but the foregoing is, perhaps, sufficient to indicate the way in which the representatives of the society interfered, and there can be no doubt that such interference must have had a prejudicial effect upon the conduct and progress of the work, and contributed to the excessive cost.

Other causes which conduced to the excessive cost of the work were referred to in evidence, but these mainly referred to the effect upon the foreman's control by the system of appointing the men, and by the interference to which he was subjected from outside persons. There can be little doubt that the foreman's authority with the men was thereby materially lessened and interfered with. It can readily be seen that the men who came to be employed in this, as it were, automatic manner under the rotation system, would not regard the authority of the officers of the Department in the same way as they would have done had their selection for employment depended upon those officers. As evidence pertinent to this point, the Board refer to the statement by Mr. Grant in his evidence, p. 566, Qs. 5755–6–7. It must be remembered that Mr. Grant is himself a stonemason, and his answer to the question may be taken as a fair representation as to how the authority of the officers would be viewed by a mason employed upon the works. Foreman Ryce, on the subject of control, said, in answer to Q. 239 :—

Other causes of excessive cost.

Foreman's authority and control weakened.

239. *Q.* Has that any effect on your control of the men? *A.* It places me in a very awkward position. When a man has charge of a work, he should certainly have full control of putting on and discharging men, and if a man has that control over the men, as I have had under contractors, he certainly has more respect from the men ; but when they are sent to him from the State Labour Board, they can go on independently of him altogether—he has really no choice in the matter. A man may be a good workman, but he may be antagonistic to the foreman to a certain extent, and the foreman does not care to discharge that man, but he knows that he would not have that man on his own choice. When the men know that the foreman has not a free choice, it gives them the idea that the foreman is not in the position he should be.

Mr. Cook also stated, in answer to a question by Mr. Thomson :—

1717. *Q.* On page 45 of the informal evidence you made this statement :—"This work is costing too much, and it is to be attributed shortly to the fact that we are losing and have lost control of the men." What do you mean by "losing and have lost control of the men"? *A.* Well, the men do not look to the Departmental officers as those whom they have to obey.

It will be seen that the opinion of the contractors on this point entirely accords with Mr. Ryce's statement. *See* answer of Mr. Stuart to Qs. 11874–5, which, though, somewhat lengthy, is worth quoting :—

11874. *Q.* Supposing I put it this way: Would there be any great difference between a picked man and a man that must be obtained by the rotation system? *A.* I will have to give you a good long answer to that. I mentioned to you before that the biggest hold that an employer has over the average man (and, mind you, I am always speaking of average men, I take no notice of these fast men, I am now dealing with average men), the biggest hold that an employer can have over such men is the sort of job that he can give them, and as to how much it is worth to them to stay there. Now, they have at the same time this knowledge, that they are subject to immediate dismissal if they do not give satisfaction. Remove that feeling, which I think is done by the rotation system, and you change the conditions altogether. You change them in a way that I hardly feel capable of explaining. You not only give the men the idea that they are there and can stay there until they are proved to be incapable, which is often a hard thing to do, but they feel that the employer is not their master, and that makes a very great difference in the feeling that the men have while going about their work. They feel they are quite as good as the foreman, and, perhaps, just as good as their employer, and they get that independent spirit that some people take particular pride in, but which is not at all times for the good of the possessor. I know this, speaking now from my own point of view, that sooner than have the rotation system pressed upon me I would give up business at once. And furthermore, although I cannot accurately explain the difference, I know this well, that if I had to employ the men just as they came—and they knew that I had to do so—I could not possibly make my work pay.

11875. *Q.* I suppose your idea would be that it would reduce them all to a dead level of uniformity, and that the spirit of enterprise and stimulation would be taken away from the men? *A.* Almost every builder in this city has been a workman either at one time or another, and we know exactly the feeling of the men in these matters. I have been in a workshop where it has been said, "What is the use of working too hard; you are doing too much." I have heard that. Still it would be more so in the Government service, where there was not the fear of dismissal. I know this, that men will slow down if they get a chance. Again, I am speaking of the average man. I know they get racing each other sometimes, but that is an exception.

The

The evidence of Mr. Deane, the Engineer-in-Chief for Railway Construction, who must be looked upon as a high authority, is very clear on this point. He said (*see* Q. 11622, p. 1148) :—

11622. *Q.* Well, where does the lack of control come in? *A.* The lack of control is one that acts in a very general way, Mr. Chairman. I think it can be conclusively understood, when the men know that they are protected by outside influence—whether it is from the unions or from the Trades Hall, or in any other way—it is quite certain that they do not acknowledge the complete authority of the officer in charge.

Men have contempt for foreman.

It was stated that some of the men, at any rate, had a contempt for the foreman; in fact, it was admitted in evidence by Mr. Grant that he had made this statement to the Minister. (*See* p. 663, Qs. 6825–6–7–8). It is there shown :—

6825. *Q.* Did you ever tell the Minister that the men have the greatest contempt for Mr. Ryce? *A.* Yes.

6826. *Q.* You did? *A.* Some of the men, not the lot of them.

6827. *Q.* Do you think there is any justification for that contempt? *A.* Well, when you hear them saying they look upon Mr. Ryce with contempt, I do not know what the justification is; I merely repeated a statement they made to me.

6828. *Q.* Were these rotation men? *A.* Yes, they were rotation men at that time.

Conduct of mason Cox

Foreman Ryce, in the course of his evidence, referred to a case in which he had to complain of the conduct of one of the masons employed named Cox, who, he stated, was the cause of much discontent and dissension amongst the men. He said he asked that Cox be removed to some other work, but nothing was done. His report on the subject, which was read (*see* Q. 290, p. 31), shows clearly the insubordinate conduct of this man. It is as follows :—

Department of Public Works, N.S.W.,
Government Architect's Branch, 18 February, 1903.

To Mr. A. S. Cook, Assistant Architect.

Subject :—*Re* A. Cox, mason.

Sir,

Will you kindly transfer A. Cox, mason, who is the cause of much discontent and dissension among the workmen employed on this work? I had occasion to speak to the men one meal hour about a week ago. When holding a meeting among themselves they got very noisy and quarrelsome. I told them I had no wish to interfere with them in their own time, but that I would have no disturbance, and that I would stop it, and that any man who caused a disturbance would have to go. This morning at meal time a Mr. Hudson, secretary of the Day Labour Demonstration, came to the shed, when Cox called a meeting, and he and Mr. Hudson commenced to address the men. As Mr. Hudson had not asked permission from either Mr. Sayers or myself, and the men got noisy, and there was every prospect of a quarrel, I told Mr. Hudson that he was not to continue to address the men, but that if he had any tickets to sell for the Day-labour Demonstration he was at liberty to sell them, as it was optional with the men as to which they took—the united or the sectional tickets—as the sectional picnic had the official approval, and had also been decided upon by the majority of the men. Cox impertinently told me that I had no right to interfere, and that a foreman's place was to be neutral. He also took his pocket-book out and read from it a repetition of the words used by me on the previous occasion when I had occasion to check them. Mr. Sayers heard all that passed this morning, and can verify my statements. I have no fault to find with his work, but his conduct is such that it will be to the interest of the Department to have him removed to some other work, and I have no wish that any of the workmen shall dictate to me my duties as a foreman.

I have, &c.,
JAS. H. RYCE,
Foreman Mason.

When an incident of this kind was apparently allowed to pass, it is little wonder that the men come to have a contempt for the authority of the foreman. Mr. Thomson in his address at the conclusion of the inquiry referred to this matter, and said that although he did not attempt to condone Cox's conduct, he did not think that the occurrence would have a detrimental effect on the discipline of the men. With this, however, the Board do not agree.

Effect of rotation system to cause a slowing down.

It was stated during the inquiry that one of the effects of the rotation system had been to cause a general slowing down of the men employed, and that this was one of the reasons, if not the main one, for the excessive cost.

While the Board are not prepared to come to the conclusion, from the evidence, that there was a general slowing down of the men employed, as a whole, there can be little doubt that a much less satisfactory result has been obtained than

would

would have been the case had the rotation system not been in force. It must be remembered that the selection of men for employment was taken out of the hands of the responsible officers, that good, bad, and indifferent, alike, were taken on, and that difficulty was felt, on the part of the foreman-in-charge, in discharging any of the men who might not be up to the mark. Also, that owing to the interference of the Stonemasons' Society, and of the Minister, the foreman's authority was weakened, with consequent relaxation of the strict supervision which would be the case under a contractor; and further, that the duration of the men's employment depended upon the time the work lasted, all being, under the departmental rule, discharged on the completion of the job. It can, therefore, be readily understood that there would be a lack of incentive for the good men to put forward their best efforts, and that the tendency would be, quite unconsciously, perhaps, for a slowing down to take place; and this might be still further contributed to by the fact that men were kept on who, while not incompetent, were not so competent as others who would have been selected and retained had the officers had a perfectly free hand.

Mr. Ryce, in his evidence (p. 27, Q. 238), said:—

238. *Q.* . . . . . Do incompetent men affect the others? *A.* Certainly. If you have good men in a shed, and there are a number of incompetent men among them, it has a tendency to bring the good men down to the level of the others, as they consider, if those men are worth so much, they are not going to put themselves out by doing much more than the others do.

On the other hand, he admitted (*see* Qs. 2619 to 2622) that the men worked honestly, and worked hard; that they were willing enough, but that they could not get through the work.

In coming to this conclusion, the Board would again emphasise their view of the case that the unsatisfactory result in regard to this work is not due to individual demerit, but to an inept system. The masons themselves, as a body, can, without flattery, be denominated as a credit to the State. It may be mentioned that the exquisitely carved shell-work at the head of the niches in the portico of the Art Gallery was the work of Mr. Thomson, and equally good work can be found elsewhere.

Masons representatives deny there has been any general slowing down.

On the part of the masons, it was denied that there had been any general slowing down, although Mr. Grant admitted that the men did slacken off (*see* his answer to Q. 4854). He, however, afterwards qualified this by stating that the slackening was due to want of stone (Q. 4856). His information was apparently based upon information supplied by Cox, one of the men employed, and in regard to whose conduct the complaint was made by the foreman.

Mr. Thomson argued that if there had been any slowing down, it was a reflection upon the officer in charge (*see* answer to Q. 8293, p. 818). Mr. Grant, on another occasion, when questioned regarding the fact that one man had taken 9½ hours to do a piece of work which another man had completed in 3¾ hours, said, in regard to the man who took the longer time:—

I think he is working conveniently. I do not think any man should injure himself for the sake of anybody. (*See* Q. 5354, p. 530).

Still, both Mr. Thomson and Mr. Grant strongly expressed disbelief that there had been any general slowing down on the part of the men, or a slowing down to any appreciable extent, and said that if they believed this was the case, they would not have been present at the inquiry.

Contractors evidence as to demoralising effect of Government employment on workmen.

The contractors, in their evidence, stated that Government employment had a demoralising effect on the workmen; this to such an extent that when working for a private employer afterwards they did less work by 25 per cent. than the same men did previous to going on to the Government job (*see* evidence of Mr. Howie, page 952):—

9649. *Q.* What is your experience of stonemasons after they have been working for the Government? *A.* Oh, my experience after they have worked twelve months with the Government is that you get 25 per cent. less work out of them.

9652. . . . I find now that work costs actually 37 per cent. more than it did five years ago. We got stonemasons for 10s. a day then, and now we have to pay 11s. a day. We get 25 per cent. less work out of them than then, and that makes about 37½ per cent. more cost.

9653. Mr. Barling.] *Q.* That is, with 1s. a day extra? *A.* Yes, it takes about four masons now to do what three used to do.

9654. *Q.* What do you attribute that to? *A.* To the Government stroke.

9655. *Q.* The Government stroke developes into private works? *A.* Yes.

(*See* also his answers to questions by Mr. Grant, p. 1044.)

10617. *Q.* Do you think it is a fair thing to slander the whole of the masons in this city as you have done? *A.* I am not slandering them.
10618. *Q.* You state they have been slowing down? *A.* That is a fact.
10619. Mr. Grant.] We think it is a slander anyhow.
10620. Witness.] I know from experience that it is a fact.

Mr. McLeod, another contractor, said (Q. 9962, p. 978), that tradesmen had lost the good habits they formerly possessed, and that labour cost 10 per cent. or 15 per cent. more. Working for the Government was, he said, responsible for this (Q. 9965).

Mr. Pringle said, on the subject of slowing down (*see* Q. 11201–3, p. 1101) :—

11201. *Q.* Do you find that the workmen keep up the amount of output per man at the present time that they did in years past? *A.* Well no, not in certain trades.
11202. *Q.* Has the diminished output taken place suddenly, or was it a gradual matter? *A.* It has been gradual, I think.
11203. *Q.* Do you think that the day-labour system has anything to do with the gradual slowing down that has taken place? *A.* I think so, partly.

Mr. Stuart expressed his opinion as follows (page 1213) :—

12202. *Q.* Mr. Delohery.] Are they doing less? *A.* I find, generally speaking, that all classes of tradesmen are doing less.
12203. Mr. Thomson.] *Q.* Have Government day-labour works, in your opinion, reduced the output? *A.* I do not think the diminished output can be attributed to any one particular cause. In my opinion, the Government stroke has a good deal to do with it.

The fact that a "slowing down" does take place with men employed on Government works seems to be borne out by the evidence of officers of the Works Department, outside the Government Architect's Branch. Mr. Deane, the Engineer-in-Chief for Railway Construction, said on this point (p. 1141, Q. 11544) :—

11544. . . . I do not think we get the same amount of work out of the men. There is not the same amount of control. I do not think there can be any doubt about that.

See also Q. 11649–50, where he expressed the opinion that some of the men "slowed down," and in Q. 11695, p. 1156, he says :—

The tendency is, I think, to do less work than used to be done.

Mr. Stilwell, Engineer for Roads, says (Q. 13383, p. 1342) :—

We do not get fair work from the men (viz., those employed under the day-labour system). Not as much as we should get if we had free control—if we had proper management.

He estimated the loss on that account at from 10 per cent. to 15 per cent. (Q. 13385).

Mr. Wade, Principal Engineer for Water Supply and Sewerage, however, stated that there had been no general slowing down reported in regard to the works under his control. (*See* Q. 12788, p. 1276).

It is given in evidence that Mr. Grant stated it was no concern of the men whether the work paid or not (*see* Qs. 6714–6718) :—

No concern of men whether work pays or not.

6714. *Q.* You have stated that it is no concern of yours whether the work pays or not? *A.* I made use of that statement.
6715. *Q.* Where? *A.* At some interview; but apart from its context, it is very misleading.
6716. *Q.* It is garbled? *A.* Yes, it is misleading. What I wished to state was that if the job did not pay, we, of course, got our wages while the job was going on, and if it did not pay, there was no resulting loss, so far as we were then concerned. That was the intention of the expression.
6717. *Q.* But to sum up, when you are getting these men employed in rotation, really you do not give a thought as to whether they are competent or not, do you? *A.* They are members of the Union.
6718. *Q.* They are members of the Union;—that is the whole answer? *A.* And they are sent in in rotation.

Admission that if work is costing more than the market value, it must damage day-labour system.

Mr. Grant, however, admitted (*see* Q. 5785) that if it were shown that the market value of the work at the Prince Alfred Hospital is far less than it is costing, the result would be damaging to the day-labour system in general, and the rotation system in particular.

Mr. Thomson also said, in his address at the conclusion of the inquiry :—

Mr. Thomson has no illusions about the rotation system.

I have no illusions about the rotation system. If the rotation system is not an economical one it will have to go.

Mr.

Mr. Grant made a somewhat damaging admission, as far as his case is concerned, when asked if he were pecuniarily interested in the putting up of a building whether he would use the Rotation System. The question and answer may be quoted. It is as follows:—

Mr. Grant would not use the Rotation System if pecuniarily interested in erection of building.

6730. *Q.* Supppsing you were pecuniarily interested in the putting up of the building—that it touched your pocket—would you wish the Rotation System to be employed;—do not think of yourself as a mason? *A.* No; I do not think that I would.

6731. *Q.* You would not? *A.* No; I do not think I would. That is just my own individual opinion.

At the next sitting of the inquiry, he, however, sought to qualify his previous statement by saying that he wished to add to his answer that if he had the power to discharge he would offer no objection.

Would not advocate application of Rotation System to contractors.

Mr. Thomson also admitted that he would not advocate the application of the Rotation System to contractors (*see* q. 9433).

Although both Messrs. Thomson and Grant were representatives of the Stonemason's Society, it often became evident that their views were not always identical. What Mr. Grant advances as the reasons why his Society favours the Rotation System, has already been stated. Mr. Thomson's view of the case may be quoted from his answer to Mr. Stuart (qs. 8970–1):—

8970. *Q.* And you believe day-labour is a step in that direction? *A.* No; my views on day-labour are these: that the State represents the whole people, and that all State buildings and works should be of the very best quality, because we are judged as a community mostly by externals. And under the Contract System, when competition is exceptionally keen, and the State accepts the lowest tender, it is difficult to get exactly the article I want, no matter how efficient the supervision. It is difficult to put into practice what I want, that the State should not accept the lowest tender, and that being so, I favour day-labour instead, as the best system to get what I want. A contractor now in business in this city has expressed to me a somewhat similar view as to the injurious effect of the lowest tender system.

8971. *Q.* Do you prefer to work for the State or for a private employer? *A.* I have worked only once for the State—the first building they did under the Day-labour System—that is, the additions to the State Secretary's Office. That is the only time I worked for the State, and I find the contractor, speaking personally, as good an employer as the State. He does not pay for holidays; that is the only difference.

In his address he says:—

Although I agree that it is desirable to build public works which are monumental, educative in character, by day-labour, I hold that the cost of those public works have to come within measurable distance of the ordinary competitive commercial cost. Further, I believe that under the present competitive system, the article the State should get cannot be obtained, notwithstanding the most rigid supervision that may be applied to the contractor. These are my personal opinions with regard to day labour.

Mr. Thomson was also asked whether he agreed with Mr. Grant's view that the State should carry out all employment (*vide* Mr. Grant's answer to questions 6940–1, already quoted). In answer to this, Mr. Thomson said (*see* qs. 8962–69):—

8962. I think he gave that opinion on the spur of the moment? I do not know whether he quite believes in that. He does not take the same view as I do.

8963. Mr. Barling.] I think Mr. Grant said, "These are my opinions. I do not speak on behalf of the Society; I am not speaking on behalf of the Society."

8964. Mr. Stuart.] *Q.* Do you hold similar views, Mr. Thomson? *A.* You know I do hold similar views, but I am ahead of the procession; that is my position. I am not in favour of compulsion in any shape or form. I say, "Wait until the people want the State to be the only employer."

8965. Mr. Barling.] *Q.* You mean to say you are ahead of public opinion? *A.* Yes; but I publicly and privately express my opinions.

8966. Mr. Stuart.] *Q.* Would you believe in the elimination of the private employer? *A.* No; not until the people have decided to become the only employer.

8967. *Q.* You advocate it? *A.* I advise the people to accept my views.

8968. Mr. Barling.] Mr. Thomson will wait.

8969. Witness.] Yes; and in Australia we can give expression to and advocate our opinions freely and openly.

The Board must confess that as the inquiry progressed they became more and more impressed with the genuineness of the belief which Messrs. Thomson and Grant had in the case they put forward on behalf of the Stonemasons' Society; and the Board must acknowledge that, in these gentlemen and Mr. Dumbrell, the Society have had most effective advocates, who, by every legitimate means in their power, endeavoured to sustain their case, and this they have done with marked ability. The Board cannot but recognise also the unselfish attitude which they have taken up. It is shown by the evidence that they are masons of the highest skill, and are men

who

who would have no difficulty, at any time, in obtaining employment. Both the contractors and the representatives of the Department stated that at any time they would be glad to employ them. The adoption of the Rotation System in their case, therefore, can only mean personal loss; and as it would involve the curtailment of the chances of employment, their unselfish conduct, in endeavouring to obtain what they considered would be a benefit to their less skilled brother tradesmen, must be readily admitted.

Quality of Workmanship.

The quality of the workmanship in the stone-cutting was admitted by all parties to be of a first-class character. The representatives of the stonemasons claimed that it was much superior to that usually done under the Contract System; in fact they contended (Mr. Thomson particularly) that it was the extra good quality of the workmanship which really accounted for the excessive cost, and he was at some pains to show how, by spending extra time in the rubbing, &c., the extra cost could be incurred. Mr. Thomson, in his address at the conclusion of the inquiry, said:—

Contention that extra good quality of work accounts for extra cost.

> The cost of the work in another direction will depend also on the man in charge. I hold that if I am asked to make work of a good quality, I am not to blame if it exceeds the Departmental estimate. If the foreman in charge says to me, "I want it like that," my duty is to do it exactly as I am told. When the result come out, that it cost, as our friend from Victoria said, about 1s. 4d. or 1s. 8d. more than it ought to cost, I should not be held responsible. . . . That is what has happened in this case. From my knowledge of stone-cutting, I say that there is no easier thing to do than to put 1s. 4d., 1s. 8d., or 2s. more labour on every foot of that stone, and work expeditiously the whole time . . . . With all due respect to the contractors and their statements as to its quality, I say again that I have seen nothing, taking it all through, done like it; and, further, I have seen nothing in this city of such small cubical contents. . . . The cause for the Departmental estimate is entirely due to that. The stone is small in cubical content, and it is exceptionally well done.

The representatives of the contractors claimed that the work was not better than could be obtained under the competitive system. Mr. Marsden and Mr. Oakden, the expert witnesses, agreed that it was about the same in quality as on the other buildings which they visited in Sydney (*see* q. 14547). Mr. Oakden said, in answer to question 16804, that there is no marked difference as a rule between the stone-work at the Pavilions and that on other buildings visited by him, but that there are some small details in which the work at the Pavilions is superior. Again, in answer to question 16869, he said:—

Opinion of experts that quality of work is about the same as in other buildings.

> The work is good, but not better than the inspector would have a right to demand from a contractor.

No reason why workmanship of same quality should not be obtained under Contract System.

Notwithstanding the contentions of the stonemasons' representatives, the Board see no reason why workmanship of the same quality should not be obtained under the Contract System. If it is specified for, it is the duty of the officers in charge of the work to see that it is supplied.

Ability of Government to compete with contractors.

From an abstract point of view, there is perhaps no reason why a Government Department should not be able to carry out work as well and as economically as contractors. During the course of the inquiry, the representatives of the contractors put forward the reasons why, in their opinion, contractors should be in a better position to do work more economically than the Government. One of the arguments adduced was that Government officers had not the requisite skill or training in this direction that a contractor had; but, in answer to this, it is pointed out that two of the most successful contractors in the city at the present time were formerly employed in the Government service, and there would be no reason to suppose that men of this calibre could not again be obtained. Then, again, it was urged that contractors had an absolutely free hand in the carrying out of a work, so long as they conformed to the conditions of their contract, and that they were in a better position to make satisfactory arrangements for the purchase of material, &c. They also urged that competition amongst contractors prevented any large profits being made, and, therefore, kept down prices.

Argument that Government officers have not requisite skill or training.

Contractors are in a better position to arrange for purchase of materials, &c.

The point is a very important one, and the following quotations from the evidence will illustrate the arguments adduced on both sides.

Mr.

Mr. Pringle states (*see* qs. 11217–8–9) that he had an absolutely free hand in carrying on work, and that owing to competition there were not many chances of getting large profits. He further said (*see* q. 11239) that he never interfered with his workmen in any way, and that he held the foreman responsible for the work.

Ways in which contractor would effect saving.

Mr. Stuart, in Question 11863, states that a contractor would study all the points where a saving could be effected; that in the case of setting small stones, such as templates and that sort of thing, he would not employ a mason and labourer specially; the work would be done by the bricklayer as he was laying the bricks, and the cost would hardly be noticeable.

In question 11838, Mr. Stuart also refers to the reason why, in his opinion, work can be done cheaper by contract. He refers (q. 11941) to the saving which could be effected by the use of machinery.

Mr. Loveridge (q. 14101–2) also shows the saving to be effected by sawing the stone, instead of hand work. He says:—

14101. Mr. Stuart.] *Q.* If you were permitted to do the work as you liked, whether by saw or by hand, would there be 20 per cent. difference in the whole of the stonework at Prince Alfred Hospital, or would it make only 20 per cent. difference on the stone that is sawn? *A.* It would make more than 20 per cent. difference on the stone I could saw; considerably so.

14102. *Q.* Would not the percentage on the whole depend on the stone you could saw? *A.* Certainly.

See also his answers to qs. 15921–5 and 15934–44.

Government officers cannot act in same way as private business men in regard to purchase of materials.

It must be at once admitted that unless Government officers have full scope for making the best arrangements they can, in regard to the purchase of material, they must be handicapped very seriously in competing with contractors. Mr. Stuart gave an instance where, by acting promptly, he was able to make an advantageous bargain for the purchase of a cargo of cedar. From the very nature of things, it is impossible for a Government officer to be able to act in these matters in the same way as a private business man. The safeguarding of the public interest requires that a certain routine shall be gone through, and proper authorisation obtained. In addition to the necessary delay which takes place on this account, there is, it must be admitted, often considerable delay due to the circumlocution of the Departments. The evidence of Mr. Davis, the Under Secretary for Public Works, on this point is very pertinent:—

15483. Mr. Wilson: *Q.* Must not your officers work under somewhat of a disability in carrying on a work of that kind, as compared with an experienced contractor? *A.* Yes; he has to conform to all kinds of regulations—necessarily so—which he would never have to do otherwise, seeing it is a large Department; whereas, with a contractor, he can go with his money in his pocket and make the best bargain he can.

15484. *Q.* Take the Government Architect and his assistants: would you expect them to have the commercial knowledge and keenness of the contractor? *A.* I would expect them to have the keenness, certainly; but as to the former, it would depend very much on their experience. I daresay they have got as much experience as some of the contractors.

15485. *Q.* You expect them to be as keen in buying as a contractor? *A.* I do not think their keeness would operate in that direction; they cannot buy in the open market the same as a contractor. So far as I can see, the personal element is eliminated to a very great extent in the conduct of the work, and I say necessarily so, when compared with the contractor.

Loss caused by delay in getting authority for purchase of sand.

Mr. Davis, also, in Question 15486, refers to a case where delay occurred in getting authority for the purchase of a quantity of sand which had come by a vessel as ballast. Owing to this delay, the opportunity of purchasing this sand slipped away, and the Government thereby lost a chance of saving the sum of £157 10s.

The delay in this case was somewhat extraordinary, and Mr. Vernon prepared a diagram illustrating the circumlocution gone through (*see* Exhibit No. 156). It was shown that from the time he asked for authority to make the purchase to his getting the papers back, eighteen days elapsed, by which time the sand had been disposed of, and, as stated, the Government thereby lost the opportunity of effecting a saving of £157 10s.

Government pay men for certain public holidays.

Another handicap which a Government Department in carrying out Day Labour Works is subjected to, as compared with a contractor, is that under the present regulations the Government pay men for certain public holidays, which a contractor does not do; he only pays for time actually worked. A return was put in, marked Exhibit No. 159 (*see* p. 1662), which shows that the cost of holidays to the stonemasons working at the Prince Alfred Hospital from the commencement of the work until the end of May, was reported as amounting to £88 16s. 7d. This works out at 2d. per cubic foot on the amount of stone out.

Another

Another point of importance is that the contractors have absolute control over the men; they are free to select the best men they can get, and to discharge them as they choose. Contractors have absolute control over men.

Taking all these matters into consideration, there can be little doubt, speaking generally, that a contractor who is a thorough master of his business—and only such can hope to be successful—is in a better position to carry out work economically than a Government Department. In saying this, the Board refer more particularly to the erection of buildings and other work of a complicated nature where skilled labour is concerned.

Necessity for Separating "Relief Works" from Ordinary Works.

The evidence conclusively points to the necessity for separating works undertaken mainly for the object of relieving men out of employment, and known as "relief works," from ordinary public works, which are undertaken in the interests of, and to meet the necessities of, the State. It seems to the Board that a great deal of the trouble which has arisen in this case is owing to the fact that these two matters—which, they think, ought to be kept entirely separate—have, in this case, become confused, and that the work has, to a certain extent, become a relief work. The Board are glad to notice that the Minister is entirely with them in this view of the case, as the following extracts from his evidence show:—

16007. Mr. Barling.] *Q.* Do you think there is a great distinction between relief works proper and such works as the Prince Alfred Hospital? *A.* Yes; I am getting more convinced of that fact every day. You cannot treat the two on the same plane. On relief works you have to act promptly and generously, and it is impossible to apply the ordinary rules to cases of that kind. When a man is brought to me and I am told that he is in great distress, I do not hesitate to put him on relief works; but I am not in the habit of putting men on ordinary works, on which I think, with the 15 per cent. and the Rotation System, they ought to be able to get good men, and within a week's time an overseer should be able to find out if a man is worth keeping on. With the exception of Lauderdale, I do not think you will find I ever put a man back who was discharged.

It seems clear that the humanitarian feeling of the country is entirely in favour of providing work for men who otherwise would be on the verge of starvation; but the Board urge that works of this kind should be so regulated that they will not attract men who are in employment, or keep them one day beyond the time when they might obtain work through the ordinary avenues of labour. The failure to do this has doubtless in many cases been the cause of disturbance in the labour market.

Difficulty in Prosecuting Inquiry.

The Board have had considerable difficulty in prosecuting this inquiry. In the first place, as already pointed out, the Minister for Works made some strictures which appeared in the public Press with regard to the method adopted by the Board in conducting the inquiry. It is clear, however, that Mr. O'Sullivan was not aware at the time that the Board were acting at the express wish of the Premier, the views of the Government having been communicated to them by the Honorable the Attorney-General, and subsequently confirmed by the Premier himself. Mr. O'Sullivan, as will be seen from the address which he gave before the Board, and which will be found in the evidence (*see* pp. 1620, &c.), took exception to the presence of representatives of the contractors at the inquiry. The reasons which led the Board to invite the representatives of the contractors to be present and to assist the Board will be apparent to anyone, and the Board think also to Mr. O'Sullivan himself on his giving further consideration to the matter.

The Board have never, from the first, considered the inquiry in the aspect in which Mr. O'Sullivan has placed it in his address. Mr. O'Sullivan there stated that he considered the representatives of the Stonemasons' Society had a right to be present, because charges had been made against the Society's members. The Board have never looked upon the inquiry in this light; they have not regarded the personal element at all. The inquiry has been rather as to the effect of a system than the conduct of individuals, and the Board think that no charges can be laid

against any individual. It has been clearly shown throughout the inquiry that it was the system which was at fault, and not the men. The Board consider that a very important economic question is involved, viz., as to whether public works can better be carried out by day labour under the Rotation System than by one giving unrestricted power to the Department to select its own men as the officers think best; and further, whether under the Contract System more economical results still could not have been obtained. Unless, therefore, advocates of all sides of the question had been present, the Board feel they would not have been able to get the full facts on which a judgment could be formed. To use the words of a recent writer, the Board believe "that it is out of the clash of arms that freedom, it is out of the conflict of ideas that truth, is born."

The Board, of course, are aware that contractors may be looked upon as prejudiced so far as their side of the question is concerned. The same, however, may be said of the stonemasons. Both parties have special interests to put forward and to guard; but it is out of the conflict of these opinions that the Board have been able to discern where the truth lies, and the Board are not aware of any better method of obtaining this result.

Questions put to the Expert Witness, Mr. Oakden.

The following are the set questions which were put to Mr. Oakden, the expert witness, at his examination, which took place, as already stated, after he had gone through the evidence, and inspected the buildings referred to in the course of the inquiry, together with his answers thereto :—

Questions Proposed by the Board.

16800. *Q.* 1. For purposes of comparison, can the stonework in the Nurses' Home be taken as being practically similar to that in the Prince Alfred Hospital Pavilions? *A.* For the purpose of comparison, the stonework at the Nurses' Home is similar to that of the Prince Alfred Hospital Pavilions; but, on the basis of per foot cube, the Prince Alfred Hospital stonework is slightly more costly—I should say about 20 per cent.

16801. *Q.* 2. As the evidence shows that the contractor's price for stonework at the Nurses' Home was 3s. 9½d., out of which he had neither profit nor loss, what, in your opinion, would be a fair estimate for the stonework at the Prince Alfred Hospital Pavilions under similar conditions? *A.* Before I read my answer to that question, I might say that I am sorry Mr. Stuart is not here, because I would like to have asked him a question. My answer is: I cannot understand the Nurses' Home stonework only costing 3s. 9½d. I think there must be some mistake in the figures. If it be correct, the deduction would be something as follows:—Net cost of stonework at Nurses' Home, 3s. 9½d. per cubic foot; add 10 per cent. contractor's profit, 4½d., which would bring a fair estimate for the Nurses' Home on that basis to 4s. 2d. per foot cube; then add 20 per cent. difference between the relative value of the stonework in the two buildings, say 10d., which would make a fair estimate for the Prince Alfred Hospital Pavilions of 5s. per cubic foot; but, in my opinion, both the 4s. 2d.—that is, the estimate for the Nurses' Home stonework after allowing 10 per cent. for contractor's profit—and the 5s. for the Prince Alfred Hospital Pavilions' stonework are low, because we start on the 3s. 9½d., which I think is low. I think the 3s. 9½d. as the basis to start with is a low one; but if we take that as the basis, that is what I arrive at—4s. 2d. and 5s.

16802. *Q.* 3. In what other buildings that you have visited since your arrival can the stonework be fairly compared with that at the Prince Alfred Hospital Pavilions? *A.* Unless buildings are actually *fac similes* it is difficult to make a comparison, but I should say the nearest would be the Australian Club. Taking into consideration the circle on circle work in the corner, I should say it is just about as costly as the Prince Alfred Hospital Pavilions.

16803. *Q.* 4. Would you be prepared to compare the stonework of these, giving a percentage above or below the estimate at the Prince Alfred Hospital Pavilions, as the case may be. *A.* I have made some comparison, but I would like to state that any such comparison must be taken with a qualification, because it is very difficult to say how much the stone in one building should cost more than another, unless both of them were taken out in detail in quantities as you have had the Prince Alfred Hospital Building; and, moreover, several of the buildings I have looked at that I am asked to compare, are not all new work—they include what is, to a certain extent, an unknown quantity; that is to say, there has been a certain quantity of old work taken down, altered, and reset, and the cost of that is included in the sum total cost of the new work. It is an unknown quantity, and it is impossible to say how far it would affect the comparison. With that qualification I have made these notes :—

The Government Printing Office.—I think the Prince Alfred Hospital Building would be about 15 per cent. more costly than the Government Printing Office; but, then, there is the unknown quantity, of course.

The "Prince of Wales' Hotel."—I should think the Prince Alfred Hospital Building would be about 30 per cent. more costly than the "Prince of Wales' Hotel."

The Public Health Offices.—I should think the Prince Alfred Hospital Building would be about 40 per cent. more costly.

The

The Post Office.—I think the cost of the Post Office was extremely reasonable. I would have expected it to have been more.

The Art Gallery Portico.—This is scarcely comparable with the Prince Alfred Hospital Pavilions, because it is such a different class of work. I should have expected it to have cost more than the stonework at the Pavilions.

Chimneys at Government House.—These are not comparable, because they include difficulties of access, to which it is impossible to put a money value. I should have expected the stonework on them to be more costly than on the Pavilions.

The Court-house—I should think the Prince Alfred Hospital Pavilions would cost from 10 per cent. to 15 per cent. more. There is very little double-faced work in that, but there is some circular work.

16804. *Q.* 5. How does the finish on the stonework of the buildings you have visited compare with that of the stonework at the Pavilions? *A.* There is no marked difference as a rule, but there are some small details in which the work at the Prince Alfred Hospital Pavilions is superior.

16805. *Q.* Will you give your opinion as to whether the plant equipment at the Pavilions is satisfactory? *A.* Could I take questions 6, 7, and 8 together?

16806. *Q.* Yes. I will read the three questions: 6. Will you give your opinion as to whether the plant equipment at the Pavilions is satisfactory? 7. Is it more extensive than would be used by a first-class contractor in executing the same work? 8. Is it unnecessarily so, considering the small cubical contents of the stone? *A.* I think the plant equipment is quite up to requirements. Considering the number of light stones, however, I am inclined to agree with Mr. Stuart's criticism (q. 11891, p. 1180), but I have not seen the working long enough to form a reliable opinion. It is, of course, easier to criticise than to improve, but certainly, in my opinion, the results—haulage 5½d., and setting (including mortar) 9¾d.—are excessively high. It raises a doubt in my mind whether the cost of the crane haulage has been properly apportioned between the stone and the other materials dealt with.

16807. *Q.* 9. You have seen the prices put in by the Government Architect for services other than the cutting and the cost of stone, sharps, haulage, cartage, &c.;—do you consider these fair or excessive values? *A.* (a) Sharps, 3½d.; I understand, from Mr. Vernon's answer to Q. 1154 in the evidence, that is for Purgatory stone.

16808. Mr. Vernon.] *Q.* Yes, that is so; this return was made before the Waverley was being returned.

16809. Witness.] Therefore, I think I would be justified in assuming that Waverley stone should not be debited with so heavy a cost as 3½d. for sharps.

16810. Mr. Vernon.] It has gone down to 2½d.

16811. Witness.] So that there would be 1d. to come off that item, speaking generally of Waverley stone. My note was, "If it is the average over the whole, it is too high"; but Mr. Vernon now has cleared that up. (b) Cartage from shed to works: This, I understand, is necessitated by the circumstances of the case; 2⅜d. is not an excessive item, in my opinion, in itself, but should, I think, have been allowed for in the Department's original estimate. (c) Haulage and setting, 5½d. and 9¾d. respectively, total 1s. 3¼d. These are excessive, in my opinion, as already stated in my previous answer, by at least 6d.

16812. Mr. Barling.] *Q.* 10. Does the cost of cutting individual stones come under consideration when an estimate is being prepared; and, if so, to what extent? *A.* I was going to ask you if you would allow me to answer Questions 10, 11, and 12 in one.

16813. *Q.* I will read them together: 10. Does the cost of cutting individual stones come under consideration when an estimate is being prepared, and, if so, to what extent? 11. Is not the relative value of the different classifications used more as a guide than the ascertained cost of cutting isolated stones? 12. Is it usual to arrive at the probable cost of a work by estimating the value of individual stones? *A.* The proper way of estimating is to separate, as far as possible, material from labour, and then to classify the different descriptions of labour—something like the way it is done in Anderson and Pate's quantities. Only in the case of some exceptional pieces would the stones be priced individually.

16814. *Q.* 13. Is this building unique in regard to the size of the stone? *A.* It is, as compared with solid stone buildings, such as the Harbour Trust Offices; but it is what may be expected in a brick building with hollow walls, where the outer skin varies from 14 inches down to only 4½ inches in thickness.

16815. *Q.* 14. Is the class of stonework in the building generally expensive to cut? *A.* The class of work is not expensive; but the proportion of surface labour, and of beds and joints to the cubical contents of the stone is greater than in a building of a different type.

16816. *Q.* 15. Having examined the exhibits, inspected the buildings referred to in the evidence, viz., Nurse's Home, University Turrets, Harbour Trust Offices, Custom House, Board of Health, Government House, Australian Club, Government Printing Office, Art Gallery, Supreme Court, General Post Office, Prince of Wales' Hotel, New Police Offices, Bull's Building, Market-street, Buildings Kent-street, and Railway Station and gone exhaustively into the returns submitted, can you say what would be a fair average cost of cutting this stone? *A.* I should think 3s. 6d. to 4s. would be ample. That would cover the contractor's profit, or establishment charges, or whatever you like to call them.

16817. *Q.* 16. Have you had any experience of day labour in connection with the erection of buildings? *A.* I have never carried out day labour in which I acted as the manager of the works myself; but there has been frequently a practice adopted in Victoria of employing a first-class and trustworthy contractor to carry out the work, not as a lump-sum contract, but allowing him to charge for day labour and material, giving the proprietor the full benefit of all discount and other purchasing power he possesses, and then paying him a 10 per cent. profit on the ultimate net outlay. I have had a good deal of experience of that system of carrying out work in Victoria—more many years ago than recently—and in my practice it has been practically abandoned because of the numerous instances in which the financial results were disappointing. The ultimate cost came out greater than the tenders prepared in good faith by the contractor before the work commenced. Just two or three days before I left Melbourne there was a small case (£90) submitted, and the contractor put at the bottom that he was a little uncertain about the labour, and that he was afraid it would seem high to me; but he was quite prepared to do the work,

work, and simply charge a profit on it if I would recommend that to my client. My client asked me what I would recommend, and I said, "I do not advise you to do that; if it should come to more, don't blame me." He accepted the price, rather than run the risk of going into an unknown quantity. That has been my experience of day-labour work. I have never done work in which I acted as the manager of the work.

16818. *Q.* 17. Would you consider that a foreman stonemason, who has had a number of years' experience, would be sufficiently qualified to price a bill of quantities for the purpose of estimating the value of a work, such as the Prince Alfred Hospital Pavilions? *A.* It turns on what experience. I think Mr. Ryce said he had not had much experience under the contractors in estimating. He should be quite competent to estimate the cost of the labour on stone.

16819. *Q.* 18. Should there be any special difficulty in estimating the cost of the stonework on this building? *A.* Not with the drawings and quantities before the estimator.

16820. *Q.* 19. Under the system of employment on State labour works, as shown by the evidence, do you think it is possible for the Government to carry out work as cheaply as a contractor would do? *A.* No, I do not. See my answer to *Q.* 16.

16821. *Q.* 20. Do you think the system of discharging all hands on the completion of a work, instead of transferring them to the next job, tends towards economy? *A.* No.

16822. *Q.* 21. Have you carried out any large alterations and additions to buildings by contract? *A.* Yes; I have carried out, at various times, alterations to Scott's hotel, one of the principal hotels in Melbourne, without interruption to the business of the hotel, amounting to £12,000 or £13,000 altogether, with no difficulty. I carried out important additions to the London Bank, taking out two of the side walls that support the banking chamber, and extending it, inserting girders, and so on, without interrupting the business of the Bank. I carried out extensive additions to the Working Men's College, amounting to about £13,000. I am doing alterations of that sort in the city every year.

16823. *Q.* 22. Have you had any difficulty in doing so—that is, could the work have been carried out more satisfactorily, and with less interference to the occupants, had it been done by day labour? *A.* I do not think so.

16824. *Q.* 23. Have you had any difficulty in preparing specifications for such work? *A.* There is no difficulty if all the conditions of the case can be first laid down.

16825. *Q.* 24. Is there any definite ratio governing the cost of cutting stone of different cubical measurement, but of the same design? *A.* No fixed ratio. It should be determined in each case by the relative proportions to the cubical contents of the following items:—Beds and joints, plain face work, sunk face work, moulded work and circular work, and by the number of mitres, returns, stoppings, &c., &c., if any.

16826. *Q.* 25. You have seen the shed in which the stonemasons are working at the Fisher Library;—will you give the Board an opinion as to whether it is a suitable building for dressing stone, and how it compares with other sheds you have seen? *A.* Compared with sheds I have been in the habit of seeing, it is a very good shed—above the average.

QUESTIONS SUBMITTED BY THE GOVERNMENT ARCHITECT.

16828. *Q.* 1. Is not the Bill of Quantities, prepared by Messrs. Anderson and Pate, a recognised and accepted basis upon which the estimated cost of the building can be ascertained? *A.* Such a bill should be a reliable basis for an estimate, but should be interpreted in the light of the drawings.

16829. *Q.* 2. Is the Department right in making use of this Bill of Quantities? *A.* Yes.

16830. *Q.* 3. Was the Department justified in adopting prices based upon previous experience of contractors and contractors' prices? *A.* Yes, but subject to the following:—(*a*) Unless the Department had data from day-labour works already instituted which proved the contrary; and (*b*) unless the Department knew of any special conditions which would involve a modification of contractors' previously quoted rates, such as alteration in rates of wages or material; payments for men when not working on holidays; necessity or intention of working stone in a shed away from the site, involving extra cartage and handling, or any like circumstances.

16831. *Q.* 4. Does not the evidence relating to the cost of the stonework in Government buildings already erected by contract, and the opinion given by independent contractors, prove that the departmental prices affixed to the Bill of Quantities were ample and sufficient? *A.* I think so, except that, of course, the extra cost of "Purgatory" was not at that time anticipated. I do not think, either, that the extra cost of items two and three in the previous answer was allowed for—that is, the extra cost for payment of men not working on holidays and the extra cost of cartage from the shed to the works. The first I assess at 2½ and the second at 2¾ per foot cube.

16832. *Q.* That is already provided for in the answer you have given as to the total amount—5s.? *A.* Yes.

16833. *Q.* 5. Would not the Department have acted improperly in venturing prices likely to be reached in the existing Day-labour System? *A.* Subject to the above modifications, I do not think the Department would have been justified in venturing prices as a whole above those in the schedule, assuming Waverley stone.

16834. *Q.* 6. Taking the cost of stonework of existing buildings and contractors' evidence, what is your opinion as to the actual cost, viz., 9s. 8d. per foot for the Waverley stonework at the Hospital? *A.* I think 9s. 8d. excessive.

16835. *Q.* 7. How, in your opinion, does the work of the new Pavilions compare with the work at the adjoining Nurses' Home? *A.* See my answers to questions one and two of the Board. That is practically the same ground over again.

16836. *Q.* 8. Is the difference, in your opinion, justified between the sworn cost of the latter at 3s. 9½d. per foot with the former at 9s. 6d. per foot? *A.* No, but I think 3s. 9½d. too low. See my answer to question two of the Board.

16837. Mr. Barling: *Q.* 9. Would the cubical contents of the individual stones in the new buildings alleged to be small account for the cost? *A.* The smallness of the cubical contents could be gathered from the quantities and drawings. I have already said that I consider the prices attached to the quantities as a whole practically sufficient for Waverley. There might be a few lines which I think low, and some I might alter the other way. Some of the run freestone, and all labour items, for instance, but they would not make a material difference in the total.

16838. *Q.* 10. The evidence shows that under the Day-labour System 85 per cent. of the masons employed are the nominees of the Stonemasons' Society, and 15 per cent. the selection of the responsible foreman. Does this arrangement, in your opinion, admit of satisfactory monetary results in working the stone.

16840. . . . . *A.* I do not think work carried on under the system indicated can expect to compete in economy of cost with work done by a contractor, unfettered by such a regulation.

16841. *Q.* 11. Does not, under this arrangement, the power of the Society override the authority of the foreman? . . . . *A.* Yes, in the putting of men on, though of course the foreman can discharge. I do not gather from the evidence that the Society claims any locus standi in the case of a workman's discharge, but his right of appeal to a political head places the foreman or manager under a disability as compared with a contractor not so fettered. The rotation system means, I understand, compulsory employment of every man in his turn. If the foreman does not approve of some of the men tendered to him, it seems to me a mockery to put those men on for ten minutes or half an hour, as suggested in Mr. Thomson's evidence (Qs. 8286–8). Better pass them over at once. By implication, the man discharged has incapacity or misconduct imputed to him, which may be doing him a greater wrong than if he is simply refused.

16846. *Q.* 12. In your opinion, has any excess cost been incurred for the following reasons:—

(a) Because the Secretary of the Society admits he nominates good, bad, and indifferent men.

(b) Because the foreman has no option but to employ them.

(c) Because the foreman can terminate this employment only after finding the men unsuitable or incapable.

(d) Because the least qualified and the least industrious men are paid equally with others.

(e) Because the Secretary of the Society has declared that some of the men have contempt for the foreman, and declined to be instructed how to carry out their work.

(f) Because the foreman knows the men have the right of appeal against dismissal before the State Labour Board.

16851. Clauses (a) and (b): See my answer to *Q.* 11. Such a system cannot tend to economy.

(c) The foreman is necessarily hampered in getting a picked selection of men, and the right of appeal would tend to make a foreman shrink from discharging men unless for flagrant unsuitability or incapacity.

(d) This is practically the effect of the minimum wage clause, and would apply also to contractors.

(e) Any man declining to take instructions from the foreman should be at once discharged. Any system which places any difficulty in the way of doing this must be prejudicial to the economy of the work, if not also to its quality.

(f) That seems to be the great difficulty of the position with the foreman.

16852. *Q.* 13. Would not the interference by the Society with the selection of setters and with the hours of labour on the buildings tend to disorganise control and to increase the cost? *A.* As regards selection, I presume it is on the rotation system, which we have just been discussing. As regards hours, unless all trades keep the same hours, there must be some waste. No doubt, work could be made for those attendant on the setters for the other three hours, but it would not tend to economy. I presume contractors meet with the same difficulty. What is the practice in New South Wales with the trades generally?

16853. Mr. Barling: *Q.* Do you wish that answered now? *A.* All in due time.

16854. Mr. Loveridge: The hours vary. One set of men—the bricklayers—will start at one hour, the masons at another, and the masons are invariably sitting down when the other trades are at work.

16855. Witness: So that the contract work is under the same disability as regards the Day-labour System?

16856. Mr. Loveridge: Just the same; we are in the hands of the union.

16857. Mr. Barling: *Q.* 14. What, in your opinion, is the reason for the cost of the stonework amounting to 9s. 8d. per cube foot, as against the office estimate at 6s. 3d. per foot? *A.* My answer to this question involves, to begin with, a slight correction which I think has to be made in the question itself. The office estimate for the work as per the original plans, and the priced-out quantites, came to 6s. 3d. per cubic foot when it was totalled up and tested that way. Something more than half the stone was taken out, and, as was contended by the representatives of the Stonemasons' Society, some of that stone was of the cheaper character, and they contended that the effect of that would be that the more expensive stone was kept in. That is true, and the extent of it is proved by the analysis of it in the second exhibit, which shows the effect of the reduction. The stone that was taken out averaged 6s. 1d. and the balance, therefore, that was left in—I have worked it out carefully—averages 6s. 5⅓d. So that, I think, in all fairness, the comparison must be made, starting with that as the basis. The Department's amended estimate for the work as per the altered drawings and altered quantities pans out at 6s. 5⅓d. I will assume it that way.

16858. Mr. Barling: Yes.

16859. Witness: To this I would add cartage from the shed to the works, 2¾d., which would bring the estimate up to 6s. 8½d.—say 6s. 8d. I am confident that this is an ample estimate, and the work could have been done by contract equally as well for something less than that figure. The difference between 6s. 8d. and 9s. 8d.—3s.—is accounted for as follows:—

	s.	d.
(*a*) Holidays (which is a pure gratuity granted by the State)	0	2⅓
(*b*) I think if 3½d. is the rate for sharps for "Purgatory," Waverley has been unfairly loaded to the extent of at least ... ... (This was before I had the answer from Mr. Vernon as regards the sharps).	0	1
(*c*) Excessive cost of haulage and setting—say	0	6
(*d*) I think the charge made by the Department for establishment, which works out at 1s. 3d. per foot cube, is excessive. It is, of course, only an estimate, and I think is too high by—say	0	5
(I might say, if you take the Department's charge for establishment of 15 per cent. and work it out on the actual cost of the stone, it means that the establishment charges, which would represent contractor's profit and his clerical work, I presume, would come to about £1,270. Well, unless work is taken very much more easily in New South Wales than it is in Victoria, I do not think a contractor would expect to make £1,270 on simply the stonework of those two pavilions, apart from the rest, and I think, by loading it up with 15 per cent., it is a little unfair to the stone. I have put down 5d. as being charged too much on the stone. That, of course, is only an estimate, too.)		
(*e*) Excessive cost of working	1	9¾
Total	3	0

Items (*b*) and (*d*) are corrections which I have taken upon myself to make in the Departmental statement of 9s. 8d. The other items—(*a*) Holidays, (*c*) Excessive cost of haulage and setting, and (*e*) Excessive cost of working—amount in all to 2s. 5d. per cubic foot, and they represent the extra outlay per cubic foot actually incurred by carrying out the work under the present system. As I have already stated, I believe the work, if let by contract, would have been done for less than the Departmental estimate—probably 10 per cent or 15 per cent. less—so that the saving would have been considerably more than 2s. 5d. per foot.

16860. Mr. Barling: *Q.* 15. Is there any evidence to show omission on the part of the responsible officers to carry out their duties as efficiently as possible under the conditions? *A.* No; except, I think, there must have been some error in judgment as to the method of handling and setting of the stones on the work to involve so great a cost for haulage and setting as 1s. 3¼d. per cubic foot.

Questions Submitted by Mr. Mant.

16862. *Q.* 1. Bearing in mind the materials available to Departmental officers at the time they made their estimate, does the witness consider the estimate of 6s. 3d. a proper one? *A.* I think that is covered by my answer to the Government Architect's question.

16864. *Q.* 2. In arriving at an estimate, what, in witness' opinion, is the proper method to test that estimate? *A.* If I understand Mr. Mant's question, that is covered by my answers already.

Questions Proposed by Representatives of the Stonemasons' Society.

16867. *Q.* 1. Is not the partial use of "Purgatory" stone responsible for a portion of the so-called excessive cost of the stonework at the Prince Alfred Hospital pavilions; if so, to what extent? *A.* I have no knowledge of "Purgatory" stone myself. The evidence goes to show that as regards that portion of the work which was done in "Purgatory," the increased cost was about 1s. 1d. per foot cube.

16868. *Q.* 2. Is not the small cubical contents of the stone responsible for a portion of the so-called excessive cost of the stonework at the Prince Alfred Hospital; if so, to what extent? *A.* I think the smallness of the cubical contents is fairly indicated by the drawings and quantities, and that the prices at which the work was estimated by the Department (totalling, for the amended drawings, an amount which works out at 6s. 5½d. per cubic foot on the average), are sufficient prices taken as a whole, if a further 2¾d. be added, for having to work the stone away from the site, to cover the cost of the work if let by contract.

16869. *Q.* 3. Is not the extra good quality of the workmanship responsible for a portion of the so-called excessive cost of the stonework at the Prince Alfred Hospital pavilions; if so, to what extent? *A.* The work is good, but not better than an inspector would have a right to demand from a contractor. Some of the work is superior to that in the Nurses' Home.

16870. *Q.* 4. Is not the payment for holidays responsible for a portion of the so-called excessive cost of the stonework at the Prince Alfred Hospital pavilions, that is, compared with contract work; and, if so, to what extent? *A.* Yes; the amount already quoted, according to evidence, which works out at 2⅓d. per foot.

16871. *Q.* 5. Is not the cutting away of the rock-faced ashlar in the basement also responsible for a portion of the so-called excessive cost of the stonework at the Prince Alfred Hospital pavilions; if so, to what extent? *A.* As I understand the case, the pitch-faced ashlar is deducted in the Quantity Surveyor's estimate. I have already pointed out that the deduction of so much of the less expensive stone raises the average of what is left in, and that the average cost of the stone left in the amended plan, worked out, according to the Department's original prices, would be 6s. 5½d.

16872. *Q.* 6. Is not the cost of carting from the shed to the works also responsible for a further portion of the so-called excessive cost of the stonework at the Prince Alfred Hospital pavilions; if so, to what extent? *A.* Yes, according to the evidence, this cost 2¾d.

16873. *Q.* 7. Is not the bonding of the stonework in short lengths at the Prince Alfred Hospital pavilions responsible for a portion of the so-called excessive cost; and if so, to what extent? *A.* I think the bonding is judicious, and what I would expect to adopt in a brick building.

16874. *Q.* 8. Were not three labourers too many employed at the Fisher Library shed? I do not feel myself competent to answer that question.

16875. *Q.* 9. Is not the ordering of small stones singly from the quarry and cutting them singly responsible for a portion of the so-called excessive cost; if so, to what extent? *A.* If stones were ordered in blocks and cut up by machinery, there would be a considerable saving, but in that case I would expect the work to be done for less than 6s. 5½d. per cubic foot.

QUESTIONS SUBMITTED BY THE CONTRACTORS' REPRESENTATIVES.

16877. *Q.* 1. In your opinion, how does the cost of the stonework done at the Prince Alfred Hospital compare with the cost of stonework done under the contract system, and referred to in this evidence? *A.* Contract work is undoubtedly cheaper.

16878. *Q.* 2. If, in your opinion, the cost of the stonework done at the Prince Alfred Hospital is excessive, does the rotation system of employment account for the whole of the excess;—if it does not, to what other cause is the excess due? *A.* I think the Department, carrying out work under the Day Labour System, cannot compete economically with the Contract System. That is not a direct answer to the question *re* the Rotation System. So far I have simply referred to the general principle. In this case the Day Labour System is further shackled by the regulations as to rotation, non-transference from one job to another, payment for holidays, &c. I could not undertake to discriminate the amount of the different causes; I can simply put them all down.

16879. *Q.* 3. In your opinion, could this work, done under the Day Labour System, have been carried on successfully from an economic point of view if political influence, of the nature disclosed in the evidence, prevailed? *A.* I feel a little difficulty in answering that question with the word "political" in it. I do not want to answer political questions. I think I have practically answered the spirit of that already.

16881. *Q.* 4. If the evidence shows that, under the Contract System, as good work, as good wages, and equal conditions for the workmen (excepting the payment for public holidays) prevail as under the Day Labour System, but that the price paid by the Government for work done under the former system is less than that paid for similar work done under the latter system, which system should be adopted by the State from an economic point of view? *A.* From a purely economic point of view, given the premises laid down in the question, there can be only one answer.

16882. *Q.* Perhaps it might be as well for you to give that answer, Mr. Oakden? *A.* The Contract System.

16883. *Q.* 5. Does the evidence show whether the contractors or the Public Works Department are in the better position to carry out the State's building operations from an economic point of view? *A.* I think the contractors.

16884. Mr. Barling: I have now gone through all the questions which have been submitted by the different gentlemen. We shall be glad to hear, Mr. Oakden, before any of the gentlemen cross-examine you, whether you have any other statement you would like to put before the Board?

16885. Witness: I do not think so; I think that any further information or explanation I might wish to give will come out in cross-examination.

Assistance rendered by the Honorable the Premier.

In concluding their report, the Board have to express their thanks to the Honorable the Premier for the great assistance he has given them in the prosecution of this inquiry. Not only by his action did he prevent any interference, thus leaving the Board with a free hand, but, in addition, he gave active assistance in arranging for the attendance of several important witnesses which the Board were anxious to obtain, and it is to a large extent due to the Premier's help that the Board have been able to carry through the inquiry to its conclusion.

The Board have further to thank Sir John See for giving them full permission to deal with what they think will be a remedy for the state of affairs found to exist, although it may be urged that, in doing so, they trench upon questions of policy. The Board willingly avail themselves of the opportunity thus given to suggest a remedy. It is clear that, in order to come back to proper business arrangements, political influence of all kinds must be eradicated, root and branch. While this exists, no good results can be expected. It will be understood that, in this case, the Board are dealing with systems and not individuals, and, in suggesting a remedy, this important factor cannot be overlooked, *viz.*, the severe pressure of constituents upon members, and in turn, the pressure of members upon Ministers. Under the present system this cannot be eliminated or disguised. The thing to be desiderated is how it can be done away with without minimising the proper responsibilities of Ministers, or trenching upon the prerogatives of Parliament; and the Board submit that it can only be accomplished in the following way:—Firstly, that a Local Government Bill be passed as quickly as possible; this will take away the carrying out of public works from political control. Secondly, that the Works Department be placed under a commission controlled by three responsible persons, the present Under-Secretary to be President, and two other gentlemen to be selected from outside the service, one who should be a gentleman of the highest commercial knowledge, and the other with large engineering or contract experience. Thirdly, that

that all appointments be dealt with strictly under the provisions of the Public Service Act. The duties of the Commission should be confined solely to carrying out works authorised by Parliament, although it might be given power to submit to the Government its views on any proposal; their report to be submitted to Parliament; but that they shall have no direct control of the policy of the Department, this being left entirely to the Political Head, who would then be in the same position to the Commissioners as the Minister for Railways is to the Railway Commissioners. This is merely an extension of the enlightened policy which the Premier has recently introduced in his own Department. The Board refer to the Tender Board, who, by the authority of the Regulations under the Public Service Act, have been given power to determine all matters of contracts in connection with supplies to the Public Service. If this system is faithfully carried out, the Board feel that it will relieve Ministers of unspeakable trouble, and secure to the country a business-like system in the expenditure of the vast sums which are placed at the disposal of the Works Department from year to year.

Anyone who studies the facts of the case must see that the financial position of the State is largely affected by the requirements of the Works Department, and it is therefore of the highest importance that every pound voted by Parliament for Public Works shall be expended under the most stringent economical conditions.

Conclusions.

The Board submit that a careful reading of this Report, and the voluminous evidence on which it is founded, will force the following conclusions on the mind of the reader :—

1. That the cost of the stonework at the Prince Alfred Hospital New Pavilions has been excessive—it has cost for Waverley stone 9s. 8d. per cubic foot, and for Purgatory stone, 10s. 11d. per cubic foot. It should only have cost, at the outside, 6s. 5½d. and 7s. 6½d. per cubic foot, respectively, or a loss on the whole work of about £3,184.
2. That the main cause of this excess has been interference with the responsible officers in the control of the workmen. It is possible that extra good work has been put into the job, which may account for part of the excess in cost. That the work is first class is admitted by all, but opinions differ as to whether it may be classed "extra good"—*see* page 47 of Report. The Board, however, is willing to admit that unusual care has been displayed, which, as above stated, may account for some of the excess, but the main cause is, as shown above. The evidence on this point is too strong to admit of a doubt.
3. That in some cases, provided no interference is permitted in the control of the work, day labour can be successfully adopted, especially where a large amount of unskilled labour is required, such as earth works, etc. But that the determination as to what works shall, or shall not be carried out by day labour, should be left to the wisdom of the Executive Commissioners whose appointment is elsewhere proposed.
4. That in works, such as buildings where a large amount of "wrought" work is required, the Contract System will generally be found the cheaper. This is chiefly due to the fact that Government Officers cannot deal so promptly and effectively in the purchase of materials as private contractors. The Board have fully taken into account the danger of "scamping" in works carried out by contract, but they think that this is capable of entire elimination if a system of right and honest inspection is instituted, which the Department has a right to expect and insist upon. No doubt many instances can be found of bad work; indeed such have come prominently under the Board's notice, but they do not think these are sufficient to condemn wholesale the principle of contract work.
5. That the practice of giving holidays to workmen, which does not obtain under the Contract System, operates appreciably to add to the cost of work under the Day-labour System.

6. That a complete separation should be made between relief and other works.

7. That, provided in the case of the former, pay bear a strict relation to the value of the work performed, the Rotation system may with fairness be adopted.

8. That unless the present system of carrying on public works is entirely changed, political and other influences not in accord with sound economical principles, will always be more or less exercised to the injury of the best public interests. In this statement the Board have fully taken into account the objection which has been forcibly urged that if a free hand in the selection of workmen is given to the officers responsible for the work, a system of favouritism is likely to be engendered; but they point out that this danger will always be kept in check if the responsible officers are strictly held to their responsibility to turn out good and economical work. In their own interests, in such a case, they will take care only to employ good men.

9. That the danger arising out of excessive claims for extras, for which the M'Sharry case has so often been cited as an example, must, in the light of the evidence given by the Under Secretary for Public Works, and the letter of the Crown Solicitor (see *ante*, pp. 27, 28, and 29 of Report), be considered to have been almost wholly eliminated from the contract system.

10. That, on the whole, although it cannot be stated definitely, the total cost of the work will not be excessive, and in this connection the evidence and letter of Professor Anderson Stuart may be cited. In concluding his letter he says:—

> Summarised, therefore, it may be said that for a sum of £66,000 we get 234 beds, as against 211 to be provided according to the estimate of the original scheme, for the same money, together with a great amount of other and necessary accommodation. the cost of which, if it could be analysed, would be found to cover a large part of the total cost of the two pavilions. This fully bears out the contention in my evidence that the new pavilions are, on the estimate of £66,000, remarkably cheap, and that the Hospital and the State are getting good value for the expenditure.

The Board agree with Professor A. Stuart in his contention, modified by the statement of the Government Architect in his memorandum on the subject, dated 6th November, which he concludes as follows:—

" . . . . I concur with this expression of opinion, and do not hesitate to state that the cost of the Hospital compares favourably with that of similar institutions elsewhere. It is necessary that I should clearly state, however, that a considerably better result would have been obtained had not the conditions of the new Day labour System raised insuperable difficulties in the way of economical operations."

Recommendations.

The recommendations of the Board are summarised as under:—

1. That a Local Government Bill be passed as quickly as possible.

2. That the Department of Public Works be placed under a Commission, consisting of three members, viz., two executive members and one business consultative member.

3. That the duties of the Commission be confined to the carrying out of the works authorised by Parliament, and that they have no power to initiate any matter of policy, that being the function of the Minister alone; but that the Commission shall have the right to submit to the Minister a report on any work or project that may have been proposed to be carried out, and that such report shall be laid before Parliament.

4. That the said Commission alone shall have the power to determine whether a work shall be carried out by day labour or contract.

5. That relief works be entirely separated from ordinary works, and that a different method of dealing with them be adopted (see conclusion 6).

6. That the Commission in all appointments shall have the protection afforded by the Public Service Act. The

The Board venture to think that if these recommendations are given effect to the evils which flow from the present system will be entirely removed, and that an untold saving to the State will be effected.

Concluding remarks.

In closing this long inquiry, the Board have to acknowledge with satisfaction the courteous attitude to each other observed by all the parties thereto. They have to acknowledge the ungrudging help which has been given to them by the Department, the representatives of the Stonemasons' Society, the representatives of the Builders and Contractors' Association, and by Mr. Mant, of the Crown Solicitor's Office, who appeared for the Department.

They have also to acknowledge the very valuable assistance afforded by the expert witness, Mr. Oakden; and last, but not least, the unremitting care evinced in collating the evidence by Mr. Holliman, the Secretary to the Board, and by Mr. J. M. Cameron, of the Public Works Department, who acted as secretary to the inquiry. Without the help of these gentlemen it would have been impossible, in view of the many other inquiries and pressing regular business which occupy the attention of the Board, to have completed this Report in anything like reasonable time; and in this connection they must not forget to acknowledge the trouble Professor Anderson Stuart has taken to read the evidence, and put his views before the Board, which contributes a valuable addition to the literature of the subject.

The whole matter has caused the Board the greatest anxiety, considering the weighty interests involved, and they can only hope that they may have been enabled to give some assistance to the Government in coming to a satisfactory solution.

J. BARLING,
C. DELOHERY,
GEO. A. WILSON,
} Members of the Public Service Board.

ENCLOSURES.

(1.) Diagram illustrating delay in obtaining approval to purchase of sand offered to the Government Architect's Department.

(2.) Diagram showing proportionate sizes of stones used (Purgatory), Prince Alfred Hospital Pavilions.

(3.) Diagram showing proportionate sizes of stones used (Waverley), Prince Alfred Hospital Pavilions.

(4.) Diagram showing proportionate sizes of stones used (externally), Nurses' Home.

(5.) Diagram showing comparision of quantities of stones used in Pavilions, with quantities used externally in Nurses Home.

APPENDICES.

(1.) Extract from Evidence taken at meeting held 7th September, 1903. Statement of the Honorable the Minister for Public Works.

(2.) Extract from Evidence taken at meeting held 14th October, 1903. Address of Mr. J. Grant, representing the Operative Stonemasons' Society of New South Wales.

(3.) Extract from Evidence taken at meeting held 14th October, 1903. Address of Mr. A. Thomson, representing the Operative Stonemasons' Society of New South Wales.

(4.) Extract from Evidence taken at meetings held on the 15th, 16th, 19th, and 20th October, 1903. Address of Mr. W. L. Vernon, Government Architect.

(5.) Extract from Evidence taken at meeting held 20th October, 1903. Address of Mr. T. Loveridge, President, Master Builders' Association of New South Wales.

(6.) Extract from Evidence taken at meeting held on 20th October, 1903. Address of Mr. J. M. Pringle, representing the Master Builders' Association of New South Wales.

(7.) Extract from Evidence taken at meeting held 20th October, 1903. Address of Mr. W. H. Mant, Crown Solicitor's Office, representing the Department of Public Works.

(8.) Extract from Evidence taken at meeting 23rd October, 1903. Evidence of Professor Anderson Stuart.

(9.) Letter from Professor Anderson Stuart, Hon. Secretary and Chairman of the Board of Directors, Royal Prince Alfred Hospital, with regard to evidence given by him at the inquiry; and also comments by the Government Architect thereon.

Appendices to the Report of the Public Service Board, dated 25th November, 1903, respecting the Inquiry held into the causes of the Alleged Excessive Cost of the Erection of the New Pavilions at the Prince Alfred Hospital under the Day-labour System.

Appendix I.

Extract from Evidence taken at meeting held 7th September, 1903.—Statement of the Honorable the Minister for Public Works.

The Hon. Edward William O'Sullivan, Minister for Works, was then sworn, and examined, as under:—

15963. MR. BARLING: I think you have been made conversant with all the proceedings that have taken place at this Inquiry, and that you have also been supplied with all the evidence, and I understand you now wish to make a statement.

15964. MR. O'SULLIVAN: Mr. President, I have carefully read the great majority of the 15,000 odd questions that have been taken down here in evidence, and I want to ask this question: Is this an inquiry into the Day-labour Question, or is it an inquiry into the Prince Alfred Hospital Pavilions alone?

15965. MR. BARLING: We are not inquiring into the Day-labour System, but simply into the Prince Alfred Hospital Pavilions.

15966. MR. O'SULLIVAN: Well, I would like to ask you why it is—I say this with all respect to the Board and the gentlemen referred to—that a number of builders and contractors are here putting questions and testifying themselves on a matter which is purely a day-labour work, for which they absolutely refused to tender?

15967. MR. BARLING: I think you a little misunderstand the position. The contractors have been invited to come here to assist us in this inquiry, just in the same way as we have asked Mr. Grant and Mr. Thomson, the representatives of the Stonemasons' Society. The question before us is this: The reason for the alleged excessive cost of the Prince Alfred Hospital stonework. We want to find out what the proper cost should be. The contractors have given us valuable evidence on that point, and unless we can come to a conclusion as to what ought to be the cost of that work—and we can only do that by obtaining evidence from all sources—it is impossible for us to come to a proper decision on the question before us.

15968. MR. O'SULLIVAN: I can understand that, so far as the stonemasons are concerned, because their reputation is in jeopardy; but I cannot understand why it is that a body of builders and contractors should be allowed to sit here day after day, to ask questions and go into all the minutiæ of the matter, to express remarks very hostile to the Day-labour System, and be called as witnesses on the very case on which they have been sitting as barristers.

15969. MR. BARLING: We are asking them to give sworn evidence on the cost of works which they themselves have carried out, and we are trying to find out whether the works which they say have cost a certain sum of money, present any analogy to the works being carried on at the Prince Alfred Hospital.

15970. MR. O'SULLIVAN: Will you, with great respect, accept my protest for the time being?

15971. MR. BARLING: Certainly.

15972. MR. O'SULLIVAN: I would like now to say that I have carefully read the questions and carefully noted the points I think I should testify about. What I say now has been sworn to, and therefore I would prefer you to let me——

15973. MR. STUART: Before Mr. O'Sullivan reads his statement, I would like to be clear as to our position, which I see he has challenged. Are we to be permitted to cross-examine Mr. O'Sullivan on his statement?

15974. MR. BARLING: The position Mr. O'Sullivan occupies here is as a Cabinet Minister, and we have invited him to make a statement on the evidence which has been given before the Board. Mr. O'Sullivan can answer any questions if he chooses; he cannot be put to the same cross-examination as an ordinary witness, because he comes as one who is conversant with the policy of the Cabinet, and he certainly cannot be subjected to the same cross-examination as ordinary witnesses.

15975. MR. STUART: Nor as to any facts contained in his statement?

15976. MR. BARLING: If Mr. O'Sullivan makes a statement which is not in accordance with facts, I am sure he will be the very first to wish it to be corrected—any little inaccuracy in his statement which he may have fallen into by accident.

15977. MR. STUART: How are we to know what they are unless we have the right of cross-examination?

15978. MR. BARLING: I think the better way will be to let Mr. O'Sullivan make his statement first.

15979. MR. STUART: I may say, if we have no right to cross-examine on his statement—not only on his statement, but in regard to other matters in which he has taken a very prominent part,—there is no use in my staying here at all.

15980. MR. BARLING: I think, before you take up that position, it is just as well to hear what Mr. O'Sullivan has to say.

15981. MR. STUART: One witness previously observed that in giving evidence one might speak according to their view of the matter in perfect good faith, and yet be incorrect. We can only arrive at the proper facts of the case, I take it, if we have the right of cross-examination. I do not see any divinity that hedges Mr. O'Sullivan round more than any other man.

15982. MR. BARLING: That is perfectly true, taking him as an ordinary witness; but he comes here as a Cabinet Minister, and therefore it is impossible for anyone to question him on matters of policy. If Mr. O'Sullivan likes to answer any questions, I have no doubt he will do so; and if he makes any statement which is not correct, I am perfectly certain he will be only too pleased to be corrected.

15983. MR. STUART: If we have no right of cross-examination, it is no use our staying here. If he can make the statement without our having a right of cross-examination—it may contain facts from his point of view, but they may not be facts from our point of view.

15984. MR. BARLING: I think we had better hear first what Mr. O'Sullivan has to say, and if there be any ground to question anything which he might say, or calling for a further explanation, I am quite certain that Mr. O'Sullivan will be the very first to reply.

15985. MR. STUART: Well, I will enter my protest at this stage against Mr. O'Sullivan being treated in any other way than an ordinary witness when he occupies his position in the witness-box.

15986. MR. O'SULLIVAN: With due respect to these gentlemen, there is nothing personal in the matter or against their craft. I hold that they have no right to be here at all. It is a day-labour work that is referred to, and they absolutely refused to tender for that work. In holding that view, I must decline to answer any questions put to me by the contractors, but I am quite willing to answer any questions put by the Board. I hold the view that they have no right to be here at all in the positions which they occupy. It may be a mere matter of opinion. I wish them to understand there is nothing offensive in my contention, nothing attempted to show disrespect to them, but simply that I hold this opinion very strongly, that they ought not to have formed part of this inquiry at all.

15987. MR. PRINGLE: We are here, and the Board will correct me if I am wrong, by the invitation of the Board, and not by our own invitation. We positively declined to come in the first instance until we were informed that the Board had consulted the Attorney-General and could subpœna us to come here.

15988. MR. BARLING: We did not consult the Attorney-General as to contractors coming here, but as to our general powers to investigate the matter.

15989. MR. PRINGLE. We come here at the greatest inconvenience. We did not want to come at all. I wish Mr. O'Sullivan to understand that.

15990. MR. BARLING (to the Contractors): I think it is perfectly clear that you came here at our invitation. We have the conduct of the inquiry, and we are carrying it out as we think best.

15991. MR. STUART: With your permission, I will retire, in view of the statement made by Mr. O'Sullivan.

(Mr. Stuart then left the room).

15992. MR. BARLING (to Mr. O'Sullivan): Now, Mr. O'Sullivan!

15993. Mr. O'Sullivan then read the following statement:—

In perusing the notes of the inquiry, it appears to me that, despite the remarks of the Chairman as to its object being merely to ascertain whether the cost of the stonework at Prince Alfred Hospital additions has been too much, a larger question has been introduced. The presence of representatives from the Builders and Contractors' Association, and the active part they have taken, clearly indicates this; in fact, so far as they are concerned, the day-labour policy of the Department is sought to be staked on this case; but I can assure them it is not. By their evidence, too, it is distinctly shown they are biassed witnessess—*vide* Howie (10624–5), Pringle (11313), Stuart (12304). To quote from the evidence of this latter witness, they are here "to do the Day-labour System as much harm as possible." (Under those circumstances I have a right to protest as I did.) Naturally they are, for it is directly opposed to their personal pecuniary interests, and their evidence must be weighed accordingly. While directing attention to this, however, and to the circumstance that they carefully refrained from putting their side to a test when the fair opportunity was offered them, as so pointedly shown in Mr. Davis' evidence, I wish to disabuse the gentlemen's minds of anything of the personal element. At the same time I recognise it will probably be necessary for me to take other action at a later stage, but for the present I content myself with a protest against the presence of the contractors at this inquiry.

From the evidence, it would also appear that the use of the Rotation System is the point on which the important question hangs; and, as a singular thing, this is the direct antithesis of what was at issue—in fact, of what I personally was charged with, in connection with the Dock—the allowing of political influence to interfere with the engagement and dismissal of workmen.

As the sworn statements of Messrs. Davis, W. A. Smith, and Mack, and the evidence of Mr. Hanna, the President, at the informal inquiry show, this particular system owes its introduction to a recommendation made by the State Labour Board, which consists of representative officers from each of the branches—well qualified men and of large experience in dealing with the engagement of labour. This body was brought into existence to regulate the employment of tradesmen, artisans, &c., on State works other than those of a purely relief character, and to give fair play to both Unionists and non-Unionists. Various factors combine to render some such step necessary, the principal being the demands made on my time by Members and others seeking employment for men out of work, and by the unemployed men of the better class interviewing me personally.

These latter I found had strong objections to being lumped with the men who seek urgent relief—distressed cases for the most part—and are dealt with by the Labour Bureau. About this time, when these demands on me had been very severe, Mr. Carruthers gave notice in the Assembly of a Bill he wished to bring in for regulating the employment of men on State works; and from expressions of

opinion

opinion I obtained from various officers, and consultations I had with Mr. Davis regarding its provisions, I conceived the idea of establishing the body referred to. Another reason that had operated in my mind for a considerable period, and convinced me of the desirability of taking such steps, was the complaints I have had made to me at various times that a good deal of private and other influence existed, which made it appear that steady work was given to the men who were favourites of the overseers to the exclusion of other skilful and deserving men out of employment.

These are largely the circumstances which led up to the establishment of the Board; and when their recommendation was placed before me, to the effect that men should, with the exception of the special selection percentage, be taken in turn, I approved of it. I recognised that if the operations of the Board were to be carried on with any degree of method, some such arrangement was necessary; and I further saw that it would, or should, put an end to all the complaints about favouritism, &c., by giving every man a chance of employment in turn. At this point I should like to say that while contractors may state they could not work under such conditions, my experience, and the experience of the members of the Board referred to, goes to show that you cannot apply the rules obtaining on private works in this respect in their entirety on State works. Good foremen, however, with the right of discharging men, I maintain should, and do, assist, and in this my knowledge of what has been accomplished convinces me, very largely in overcoming this disability.

Now, so far as this system applies to the stonemasons, it has been shown they did not initiate it; on the contrary, at the outset a section (those employed on certain State works) were distinctly opposed to it, and at a meeting they held to further their ends in this direction were defeated in the object they had in view. It was known a number of men were carried on State works from job to job, and the other members were anxious that a monopoly should not be established; also, that it should not be necessary to employ influence of any kind to get employment—that is, a trial in turn. It will be seen from the evidence, further, that from practically the beginning, the Society favoured registration through the secretary; it being explained to me, when the matter was brought under my notice, that the men would not in that way lose time or opportunity, that Mr. Grant was in touch with all their movements, and that generally the business would be facilitated for them by such an arrangement. Knowing that the men could do their business through the secretary of their Union more easily and with less loss of time than through any other channel, and as it involved less instead of more work in our own office, this seemed a reasonable request, and I accordingly acceded to it, on the clear understanding, however, that the names submitted should be of men out of employment; also on condition that it should not interfere with non-Unionists, who were to be at liberty to register at the office when they chose. In doing this I did not in any way wish to reflect on the members of the State Labour Board. They reported on various requests, and in the greater number of cases I acted on their reports; but it would not always do for a Minister to follow such reports. He at times has to view the matter from a wider and different standpoint, but, of course, accepts the responsibility of his action, as I do in this case. I have laid it down as a rule, and maintained it throughout, with the exception of Lauderdale's case, of which I will have more to say later, that men should not be allowed to leave private employ to come on to Government works, the works being for men out of employment. This being so, the fact that men (other than the non-Unionists, who are engaged in their proper turn) are put on as occasion arises in the order they appear on the list made up from the names supplied by Mr. Grant from time to time, does not alter what would be the case if they were made to come to the Board offices and register. It is simply a convenience. If the Stonemasons' Society have kept faith with me (and from Grant's answers to questions numbers 4425 and 4571 I have no reason to think they have not), then to attach any other importance to it, or to infer that it gives Grant the power to say who shall be put on any work, is altogether wrong. The sworn statements show that Grant did not in any way interfere with or influence the selection, beyond sending the names of Society men out of employment on to the State Labour Board, and these were engaged in their proper turn with the non-Unionists registered—that is to say, Mr. Grant merely sent in a list of the names, and beyond that he had no more power to put a man on than a child unborn. They went on irrespective of where the work was, excepting, as I conclude from the evidence of Mr. Mack, in the cases of men who have proved unsuitable, when they would not be sent back to the same work, assuming that they were drawn for it. Mr. Vernon's answer, No. 853, and Mr. Mack's reply to question number 15382, substantially prove this. Where, then, does the dictation come in, or where can my granting this arrangement to the Societies affect the employment of labour? There has been no dictation whatever from the Stonemasons' or any other Society.

At this stage I would like to review some of the evidence given in respect of the Rotation System. It seems to me, if taking away men from private employ on to Government day-labour works is not to be countenanced, and foremen have the power of discharge, then, if officers do their duty, there can be no better way of conducting matters, viewing, of course, that conditions obtaining on private work cannot be applied as a whole to State operations. As to letting men leave other employ, despite the fact that officers favour it, and the Unions have repeatedly pressed for it, I have not acceded, as there seem to me many good reasons why it should not be allowed. Private enterprise has its rights to some consideration at the hands of the State; neither is it fair to the man out of employment. With regard to the foremen discharging unsuitables, the evidence in this particular case goes to prove that a fair amount of weeding out took place, and that the Society never interfered with the discharge of a man, while Ryce's evidence, *vide* questions 2617 to 2620, shows that the gang was working hard and honestly. As the Society never interfered, there are no grounds, therefore, for Mr. Cook's assertion (questions 140 to 144) that any superior power would step in if Mr. Ryce used the authority of discharge he held; and if this officer's further remarks in questions 151–3 mean Ryce had any instructions on this score from me, they are utterly incorrect; on the other hand, although Ryce knew that under regulation he might have to take the men, it is shown there was no necessity for him to keep them if unsuitable, as Mr. Cook himself states in answer No. 165. Moreover, the evidence also shows that this excessive cost, if it be finally determined that the work is costing too much, instead of the estimate being too low, is not wholly attributable to the Rotation System under which the labour has been employed. Mr. Vernon, in his evidence (questions 348 to 341), speaks of the Rotation System and the alleged dictation of the secretary as not being the sole causes. If those be not the sole causes, what, then, are the others? Then Mr. Cook states (question 1811) this is the only case he knows of where it has had that effect. It certainly had no detrimental effect in the case of the stonemasons working under Mr. Murray for the Central Railway Station, who

did

did their work cheaper than those working under Mr. Ryce. I do not want to fight the stonemasons' battle. They are well able to do that themselves. What I do wish to make clear is that by the evidence it is quite possible, under existing conditions, to equip our jobs with men, if foremen do their duty, in a manner which will enable the Department to execute day-labour works with satisfactory results—equally as satisfactory as if the works were done by contract.

The 15 per cent. allowance for special selection, which I have always upheld, enables foremen to get good leading hands of whom they have a personal knowledge; and there appears to be no reason why, if they exercise their powers, a proper "survival of the fittest" policy should not obtain, and squads be purged of men who may not be up to requirements. Originally, as has been brought out, a 25 per cent. selection was permitted, but in view of representations made to me as to a monopoly of State work by certain men, and feeling that, with foremen's powers, a 15 per cent. basis should be sufficient to meet reasonable needs, I approved of the selection being reduced to that figure, but no further. I have, therefore, refused the repeated applications of the Society that the provision should be altogether abolished, as I deem it essential that foremen should be able to get leading men they know—it is an adjusting element, coupled with the power of discharge, to meet the necessary adoption of the Rotation Scheme recommended by the Board. The statement of Grant that in this matter the Society would yet obtain the abolition is made without warrant. I am determined that, so long as I am Minister, it shall be maintained. In this connection, with regard to the further extravagant statements by Grant as to various interviews, the obtaining of concessions, &c., they are the outcome, I suppose, of his more than lively imagination. I have weighed their requests when made; those I deemed fair I allowed, the others I refused. The case is pretty accurately summed up in the question asked by Mr. Stuart, and Mr. Grant's answer, namely, question No. 7077, "Has he (the Minister) been very squeezeable, to use a significant word? *A.* I do not think he has; I think he is very slow to give any concessions you want." Regarding the question of the slowing down of the men, I heard no complaints on this score till long after the commencement of the works, fully five and a half months. Surely, if this were the case, it should have been apparent within a few weeks, and if steps had been taken then to make it known, allowing that this was the reason, a good deal of extra outlay would have been saved. If Ryce knew, as he infers he did from question 4167, that the men were slowing down, and admits, as he has done, that he had the power of discharge, why did he not send them about their business? As he did not do this, it seems to me apparent that he failed to do his duty. Under circumstances like that, they would certainly not have been reappointed by me. Mr. Symonds' evidence shows this clearly enough. I have been informed by Mr. Small that the masons at the Central Railway Station, under Mr. Murray, have been doing good work, and I do not see why the same results should not have been obtained by Mr. Ryce. I feel I must disagree with Mr. Vernon in his evidence as to the satisfactory way Ryce carried out its duties; it can hardly be said to be so when, according to his evidence, one would infer that he allowed the men to slow down.

Mr. McLeod and the other contractors would have us believe there is a slowing down generally on private works through the influence of the Government day-labour works; but there has not been any proof forthcoming. On the contrary, however, so far as the Department is concerned, we have many cases in which a profit has been made, notably in connection with the telephone tunnels, where £29,000 was saved by carrying out the work ourselves on the same estimates as they were previously carried out at by a contractor. A number of our railway lines, bridge works, &c., also show that day labour has been a success.

Regarding some of the matters touched on during the course of the inquiry, I have deemed it necessary to add the following particulars, namely:—

Lauderdale's Case.

As to the evidence given by Messrs. Cook, Ryce, Grant, Thomson, Howie, and Stuart, regarding the case of this man, as explained by Thomson in question 9066, the circumstances were exceptional. On the representations of the Society, there appeared to me to be extenuating circumstances, and as an act of grace and consideration, I gave him another show. As to Grant's assertion that effective words, &c., were used (question 6543), this must not be regarded as indicative of pressure, for there was not any. The statements made rather appealed to my sympathy, and convinced me that there were exceptional circumstances; so I sent the man back to work. I believe this is the only case, with regard to stonemasons, where I sent a man back after being discharged. It was Grant himself who came to me about Lauderdale, and made such statements as certainly evoked a little sympathy from me, and I gave the man a further trial.

This cannot be said, as Ryce has stated, to have affected him in the discharge of his duties, for the man was not discharged by him for insubordination or incompetence. There was nothing in the case that should have influenced him in his duty with regard to other men later, or in Mr. Stuart's contention that the Department was thereby humiliated. I have every reason to believe that Grant's statement as to the reason for this man's going to South Africa is correct: the higher wages there are attracting men from here.

Cox's Case.

This matter not having been reported to me, as the evidence shows, I had no cognizance of it. As to shop stewards, I do not believe that any harm can accrue if the overseer does his duty. Whether shop steward or not, a man should be discharged if he is not competent, or improperly interferes with the men. As long as they keep within the bounds of the Society, and only assert what is right and reasonable, I do not think the mere presence of shop stewards can possibly have a detrimental effect on the work. A shop steward may be the means of preventing a good deal of discontent and trouble.

Notes of Deputation.

Respecting Grant's statement (24832), to the effect that the notes of a deputation were incorrect (to use his expression, "faked"), this hardly requires denial. No instructions have ever been given by me for any report of such interviews to be altered, or for the shorthand writers to be in any way influenced in how they present their reports. When these come before me I peruse and sign them, when they become part of the records of the Department. I cannot recall ever having made an alteration in the report of any deputation; and I venture to say, if the records of the Department are searched, I do not think you will find one alteration.

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Newcastle Post and Telegraph Office.

It has been sought to show that the masons working on this job secured an advance of 1s. per diem to their wages when there was no necessity for such increase. The fact is, the rise was given when it became manifest that men could not be obtained at the reduced rate. Rather than lose time in proceeding with the work, or chance a strike, I gave the advanced rate. The men had to leave their homes, and naturally expected some consideration. The contractors also paid it, a circumstance which proves the Department's action was not singular.

Sullivan's Case.

Reference has been made to my having permitted this man to see a report by an officer regarding him. The facts are, that the man complained of having been very unfairly treated by an overseer. He could not get justice, and brought the matter before his Union, who asked that he might be supplied with a copy of the report referred to. In the interests of fair play and justice, and these alone, I let him have a copy. In doing that, I do not honestly believe I did a wrong action. The man could not get fair play from the overseer.

Mr. Loveridge: And District Court proceedings were the result.

Mr. O'Sullivan (continuing): It now having been held by the Court that such documents are privileged, I could not think of letting any other person have a copy of a report sent under similar circumstances. I do not mind admitting now that, so far as that was concerned, it may have been wrong, but I did it in the interests of fair play and justice. He is no relation of mine, and I honestly believe I tried to give him fair play.

Bricklayers, Central Railway Station.

This is the case referred to by Mr. Deane in questions 11615–7, and is traversed by his statement as to men having the right of appeal in 11691. I did intervene in the instance cited, in order to avert a strike, and was successful. Surely men have a right to come to me as a last Court of Appeal, when it is deemed a principle is at stake. It is not the sort of thing I would countenance and encourage in all minor matters, but situations do arise on works at times when I consider my intervention in a mediatory way is necessary. I have had several cases of this kind—one only two or three weeks ago, where the bricklayers, who just now are very flush of work, would very easily have gone out on strike, if a small matter had not been satisfactorily settled. On my seeing the men, with the Engineer, the whole matter was settled in ten minutes. It might have delayed a great building like the Central Railway Station. All this was prevented by a few conciliatory words, in a ten minutes interview.

Mr. Wade's Evidence.

Mr. Wade has brought in the case of some bricklayers on the Marrickville Storm-water Channels. I have a distinct recollection of the circumstances. It was shown to me the men had been unfairly treated by the overseer, and acting again as a last Court of Appeal I ordered that they should have another trial.

So far as his somewhat sensational evidence (modified considerably on revision) about men at the Cataract Dam, and that of Mr. Symonds on the same subject, is concerned, I have had nothing whatever to do with nominating so large a number of local men. They were not nominated with my cognizance, except at the commencement, when a limited number of local residents in distress through the drought were put on clearing the site, and, as Mr. Wade has stated, they were better axemen than those obtained from the metropolis; so no loss should have accrued by their being given work. The fifteen hundred spoken of were probably local men, largely out of work, I suppose, owing to the drought, which had caused great distress in the Campbelltown district—many of them, doubtless, men with horses and carts. As Mr. Wade explained, there was not the remotest chance of all these securing employment. The mere fact of these men writing in to the overseer without reference to me ought not to reflect on the Public Works Department. The only men I gave employment to there were the first batch who applied by petition. Most of them had horses and carts, and I gave them employment for two reasons, first, to assist them in the distress caused by the drought, which, strange as it may appear, had been very severe in that district; and, secondly, many of them had horses and carts, and it was cheaper to use local horses and carts than to get them from Sydney. As to those fifteen hundred men, I knew nothing about it; the first I heard of it was when Mr. Wade's evidence came before me.

Respecting the lists sent by Members direct to me, I very frequently marked them "if vacancy" or "if opportunity—put these men on." There was nothing obligatory; it is not an instruction, as Mr. Symonds, the officer in charge, distinctly proves.

With regard to the behaviour of the men when they have received work, Mr. Symonds, in questions 12978 and 12979 indicates in the plainest terms I have no desire to encourage slowing down—"a fair day's work for a fair day's wage" is my maxim in that respect. That I have adhered to it, Mr. Wade himself admits, when, in reply to question 12948, he states that outside the Rotation System I have supported him right through. So far as the Rotation System is concerned, Mr. Symonds' answer to question 13058, viz., "Directly I find men unsuitable, they are discharged," and his earlier reply to question 12293, "I have never had a man sent back after being dismissed," affords abundant proof that if those in charge exercise their power this system need not present any insuperable barrier to getting good gangs, capable of giving first-class results. If more is needed, a reference to Mr. Stilwell's evidence—question 13390—furnishes it. He further adds, and he is the acting-head of a branch which, perhaps, employs more actual labour than all the others, "that the Government stroke is an exploded idea; it now means real hard work"—testimony I quite agree with. His statement in question 13465 to the effect that a foreman would not be doing his duty if he permitted a single man to slow down, and would be held responsible, sums the position up. If Mr. Ryce, as I have already stated, had dealt with these men in the same way, I certainly would not have put them back.

I honestly believe that much of the trouble over the Prince Alfred Hospital Pavilions arose, making due allowance for modifications, through a mistake being made in the estimates and the use of Purgatory stone, as shown by the following:—

	£	s.	d.	
1st Estimate	22,500	0	0	per pavilion.
2nd Estimate	24,500	0	0	„ „
3rd Estimate	29,152	10	0	„ „
Tender	41,697	0	0	„ „

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Though I have made these comments upon some of the evidence given, I take the full responsibility of a Minister with regard to any mistakes that have been made in the matter. I have always endeavoured to do justice to both officials and men, and it certainly does seem to me that cases may arise in which the workmen can only obtain fair play from the overseer by appealing directly to the Minister. Many overseers in the Public Works Department are apparently antagonistic to Trades Unionism and the Rotation System, and I believe that a good deal of trouble has arisen from this cause. On the contrary, I believe in Trades Unionism, because I think it is a good and wholesome policy for the workers of any civilised country. At the same time I have never attempted to coerce them into joining trades unions, and, in order that non-unionists should have fair play in the matter of obtaining employment, I have established and maintained the State Labour Board, by means of which they are assured of about 50 per cent. of the work done by our Department. [*Statement handed in and marked, Exhibit No.* 158.]

15994. MR. O'SULLIVAN: Those are all the comments I desire to make, and I will be very willing to answer any questions put to me by the Board.

15995. MR. BARLING: *Q.* You have read the evidence of Mr. Deane, I think? *A.* I have read the whole of it.

15996. *Q.* His evidence is pretty strong against the Rotation System? *A.* I have referred slightly to it, I think.

15997. *Q.* Why I mentioned this is because you referred to railway works being carried out successfully? *A.* I may not have referred to his evidence particularly.

15998. MR. BARLING: He was asked—

"Now, coming to building operations in the Metropolitan District, what is your opinion with regard to the conditions;—do they vary from country conditions? *A.* Of course, about Sydney a good deal more influence is brought to bear in one way and another, and I do not think we get the same amount of work out of the men. There is not the same amount of control. I do not think there can be any doubt about that."

"*Q.* What do you mean by influence? *A.* Influence to put men on again after they have been discharged, get them put back again, and influence to put certain men on that perhaps we should not select ourselves."

"*Q.* Of course you are aware that your officers can only select 15 per cent. of the men they employ now;—what effect has that, in your opinion, on the buildings? *A.* Well, it would be very difficult to say. It is reported that the men do not work as well as they would if the officers had complete control over the employment."

"*Q.* Are you in favour of your officers having complete control over the men? *A.* I think they ought to have complete control, and not be dictated to by anybody."

"*Q.* Is it possible to compete with contractors if your officers have to be dependent upon others for their men? *A.* Not thoroughly. I am quite sure that contractors would never submit to any dictation."

"*Q.* I presume, therefore, Mr. Deane, you are in favour of the power and responsibility going hand in hand in the same officer? *A.* Certainly."

"*Q.* It is claimed here that the responsibility in some cases is left to the officer, but the power has gone elsewhere? *A.* I think to a large extent that is so."

15999. MR. O'SULLIVAN: I have read the whole of that, and I have a very great respect for Mr. Deane, and would weigh very well any opinion he expresses, but I would like to remind him that he has carried out railways under the Day Labour System much cheaper than by contract, and some of them were under the Rotation System. Take the Brewarrina railway; it was done in eleven months, and many of the men were taken up from Sydney.

16000. MR. LOVERIDGE: It is all very well to make a statement of that kind in connection with the Brewarrina railway, but no tenders were called for that line.

16001. MR. O'SULLIVAN: I will argue that with you outside. With all due respect, I refuse to recognise you or your colleagues here to-day.

16002. MR. BARLING: Mr. Deane was asked—

"*Q.* Have you been trammelled by political influence in your dealings with your work? *A.* Political influence? Well, I have been interfered with, yes."

16003. MR. O'SULLIVAN: Does he give any instance of it?

16004. MR. BARLING: No, that is just his remark.

16005. MR. BARLING: Mr. Deane stated:—

"I do not altogether agree with Mr. Davidson, the Inspector-General of Public Works in Victoria. I mean to say this, that there is no reason why day labour under Government should have that bad effect on the men; only if their responsibility is taken away from them. Then I would like to say, Mr. Chairman, that when the first day labour I carried out was carried out under Mr. Young, Minister for Works—he was very anxious to introduce day labour, and he asked me to look after it—I said at the time that I did not think there would be any difficulty about it. He asked me to consider it, and I recommended that it should be done, on consideration that I should have a fairly free hand to carry out the work. A pretty large term, of course; it implied the absence of political pressure, and so on, and complete "say" as to how the men are to be employed, and what men are to be put on. And if that had been carried out, and could be carried out, in the metropolis as well as elsewhere, I think the day labour would always be a success. I am quite certain that we do not necessarily get the Government stroke from a man if he is properly looked after. If you have competent men to look after him you can get a good day's work, but if the men are bolstered up in their attempts to reduce the quantity of work done, by political influence or otherwise, you certainly will not get good work, and day labour will not be a success."

16006. Mr. O'Sullivan: That is undoubtedly true, Mr. President, and it depends, in my opinion, upon two forces for its success: the first is, to have overseers who will do their duty; and the second is, that there shall be no political interference. Now, I said that before at the Dock inquiry, and I say it again now. I will venture to say since the Dock inquiry started there has been nothing of that sort, except on relief works. On ordinary works there has been no interference of mine.

16007. Mr. Barling: *Q.* Do you think there is a great distinction been relief works proper and such works as the Prince Alfred Hospital? *A.* Yes, I am getting more convinced of that fact every day. You cannot treat the two on the same plane. On relief works you have to act promptly and generously, and it is impossible to apply the ordinary rules to cases of that kind. When a man is brought to me and I am told that he is in great distress, I do not hesitate now to put him on relief works, but I am not in the habit of putting men on ordinary works, on which I think with the 15 per cent. and the Rotation System they ought to be able to get good men, and within a week's time an overseer should be able to find out if a man is worth keeping on. With the exception of Lauderdale, I do not think you will find I ever put a man back who was discharged.

16008. Mr. Barling: *Q.* Evidence has been given here that men are put on by the Rotation System who cannot be considered to be bad workmen, but still at the same time they are not such good workmen as could be obtained if the foreman had been able to put on the men he thought best. Have you considered that? *A.* Yes. All I can say is this: it is sometimes a very dangerous power in the hands of a foreman to choose men. What is to prevent him having a pet or favorite? I have had to call a foreman up for asking for £1 in connection with the putting on of horses and carts in this very case—the Prince Alfred Hospital.

16009. Mr. Barling: *Q.* I presume that man was promptly dealt with? *A.* He brought witnesses to show that he had not done it, and I gave him the benefit of the doubt. Possibly, if I had done my duty he would not have got off quite so easily. That is a matter on record in our department. It is all very well to put forward a statement of that kind, but how are we to know they are so good. What is to prevent him putting on his friends or relations?

16010. *Q.* You are perfectly clear—of course, I am expressing no opinion whatever as to the result of all the evidence given—that the system as obtaining at the Prince Alfred Hospital should be adhered to? *A.* I think if the overseer does his duty—whether he be stonemason, bricklayer, or carpenter—that you ought to get as good workmen under the Rotation System as under any other system. There is one thing—under the Rotation System there is no one to study but a system; he can do his duty and discharge the incompetents. But supposing these are put on by the engineers, the architects, or someone else, would he not be a little chary about doing his duty? Although I never started the system, there is no proof that overseers will do their duty by any other system that has been devised.

16011. *Q.* Notwithstanding the evidence given by Mr. Vernon and Mr. Wade? *A.* I do not know the exact cases they had in their minds. I have great respect for those officers, but so far as my general experience goes, I contend it is the fairest to all men out of employment. And after all, why should they not have a right to be considered? This idea of choosing men already in work is not only unfair to contractors, but it is also cruel to men out of employment.

16012. Mr. Loveridge: It is done so largely.

16013. Mr. O'Sullivan: The only case brought under my notice was that of Howie's, and I certainly did for a time stop it. I have told Mr. Grant over and over again it will not be allowed. I do not care what Mr. Grant may say. It will not be allowed. I think it is an unfair thing to two classes of men: first, to private employers, and then the men outside.

16014. Mr. Delohery: *Q.* Why should the Rotation System apply to workmen only? *A.* I should say, in the case of engineers, architects, and overseers, you require men who are proved to be experienced, and you cannot very well prove that by taking them in rotation. There is a *reductio ad absurdum* in everything, and I think it would be rather a weak case to put forward to apply the Rotation System to engineers and architects.

16015. *Q.* Would you apply it to clerks, or cases of that kind? *A.* I presume private employers do if they wish to.

16016. *Q.* I am talking of State employment. Why should they not be taken on in rotation? *A.* The reply to that would be that they require special training for special work. But even then they get the Rotation System to a certain extent in promotion.

16017. *Q.* Men in fixed positions? *A.* How often do we hear of men getting promoted by seniority, and that is the Rotation System.

16018. Mr. Barling: *Q.* Of course, as you know, with regard to promotion by seniority, the first thing after all is fitness. The Public Service Act puts that down very clearly, and we should not hesitate to put a man on one side even if he were senior? *A.* Men have been promoted on the grounds of seniority alone. Such cases have come under my notice. I do not say it is a bad thing to do; I think it is a good thing. Seniority should be a test of efficiency—at all events it is evidence of a man being a long time in his position.

16020. Mr. Wilson: *Q.* Supposing the Department takes a good man away from a contractor, would not that make a vacancy for one of the unemployed in the contractor's service? Is it not six of one and half-a-dozen of the other? *A.* I think it would be unfair for the Department to go into private employment and take men away from there, when they have the choice of men from the State Labour Board and Trades Hall. These men might be waiting for months and months. Although I did not start the system, I contend it is a very fair system.

16021. Mr. Barling: *Q.* Do you agree with this: a man is put on a particular work; he remains till it is finished; he turns out an excellent workman. Another job starts, but under the Rotation System he can only take his turn again. Would that not, in your opinion, take away the emulation to do the best under the circumstances? *A.* I think not, Mr. Barling. On the other hand, I think it would be unjust to men out of work to keep a man on without a break. Why not give the other men a show of demonstrating their fitness, the same as he has had? So far as I have gone, I have endeavoured to be fair to them all. I am not going to say that everything was right; perhaps through an excess of sympathy or an appeal to good nature, I may have made errors. But where men have been a long time in work earning good wages, and other men are out of work for weeks and months, I contend it is manifestly unfair to go over the heads of those waiting for work. It would mean this—that you confined the Day Labor System to a few hands only. You would break it down with its own weight.

16022. *Q.* I gather from your remarks that you do not look at it altogether as a business man. You look upon yourself as one of the high officers of State, and you have to take into account the State reasons in the employment of men which contractors and business men would not? *A.* The Minister for Public Works has to study many other aspects besides those which a contractor has to study; but in doing that he can get as near to efficiency and economy as possible, and in the past we have achieved both. With all due respect to the contractors—it is a solemn fact—I could give you a list of day labor works which would open your eyes, I believe; on the other hand I could give you a list of contractors' works which is absolutely appalling, showing the public money wasted for extras, and arbitrations, and other charges.

16023. *Q.* With regard to that latter remark, did you read the statement put in by Mr. Davis in reference to the changed conditions attaching to contracts? It is stated that it is utterly impossible now for contractors to successfully sustain any claim for improper extras. *A.* I did read those comments, and perhaps the change of conditions has had a good deal to do with purifying the atmosphere, if I may say so without offence. We certainly do not hear of these excessive charges, costly claims, and litigation, that we formerly heard of. There may be a good deal in what he contends. The minimum wage struck a deadly blow at the illegitimate contractor, because he could not sweat his labor then. They were all put on the same plane, and had to pay 7s. a day for labourers, and union rates for skilled workmen. For that reason a lot of the illegitimate contractors, who paid 4s. and 5s. a day, disappeared.

16024. MR. GRANT: I would like you to ask Mr. O'Sullivan if he is aware of the fact, as per question 4166, that Mr. Ryce swore that the specially selected men slowed down? Is Mr. O'Sullivan aware of that statement? *A.* I read that, Mr. President, and I really forgot to notice it. I would like to see that proved. Even Mr. Ryce admits that they did improve afterwards.

16025. *Q.* Is Mr. O'Sullivan aware that Mr. Ryce did not put on any of his specially selected pets on the 24 test sills? *A.* I would rather you did not go into those technical matters.

16026. MR. RYCE: I think it is scarcely right that Mr. Grant should use the word "pets"; I have objected to it before.

16027. MR. DELOHERY: I do not think it is a fair thing for Mr. Grant to do.

16028. MR. BARLING (to Mr. Grant): I think you should drop the use of that word.

16029. MR. RYCE: I should like to say if there has been any charge of favoritism against me it should be fairly and squarely tried.

16030. MR. O'SULLIVAN: I cannot say there has been, Mr. Ryce, although I have heard a good deal of grumbling. I have not heard any direct complaint of unfairness on your part.

16031. MR. RYCE: I contend that if there is a charge of favoritism it should have been proven against me.

16032. MR. O'SULLIVAN: I have not heard more than grumbling, but I do not take any notice of that, unless a charge is formulated.

16033. *Q.* With regard to that question of Mr. Ryce not having done his duty, do you not think that some weight is to be attached to this—that although a man brought in under the Rotation System is a competent man, yet if the foreman had his full power of choice he would get a still more competent man. Therefore he cannot produce so good a result; at the same time he is not able, by reason of a man not being incompetent, to discharge him? *A.* It would be all right if human nature was perfect: if we could put it all through a quartz mill and get the dross out of it. It is quite possible that there is as great a disadvantage in the opening for abuse if the foreman puts men on, as there is said to be owing to the use of the Rotation System.

16034. *Q.* Would it not be rather a dangerous thing for the foreman, in view of the results which inevitably accrue, if other than good men were taken on? *A.* Unfortunately, we do not hear of any complaint of that kind when men are put on by the officials.

16035. *Q.* I mean the result of the work. If inferior men are taken on, would it not be shown in the increased cost of the work? Would he not be called to account, and asked "How is it you have allowed this work to cost so much?" *A.* He may have to say he made a mistake.

16036. MR. MANT: *Q.* Would it not be a gross reflection on the officials having authority over Mr. Ryce to allow such a thing to happen?

16037. MR. BARLING: *Q.* If the foreman took on incompetent men, and his superior officers under their very eyes saw that going on, would not that be a reflection on those officers? *A.* It would be if the head officer knew.

16038. MR. WILSON: *Q.* The returns would show it? *A.* I would like to know why it was that five and a half months elapsed before I heard anything of this excessive cost. It is quite possible that if an overseer appointed his own men the thing would happen there.

16039. MR. BARLING: *Q.* Did you read the evidence of Mr. Stuart with regard to the Nurses' Home? *A.* I am not competent to follow the contractors in their technicalities.

16040. *Q.* But where he pointed out that the stonework there cost 3/9½? *A.* I read that statement. On the other hand Mr. Small assured me that at the Central Railway Station he was getting very satisfactory work from the stonemasons under Mr. Murray. If Mr. Murray is getting satisfactory work from the stonemasons, why should not Mr. Ryce do the same?

16041. MR. BARLING: *Q.* You are aware that Mr. Small gave us evidence in connection with the brickwork, and said that probably he could get it done 10 per cent. to 15 per cent. cheaper if he was allowed to select the men? *A.* With regard to brickwork, I can assure you that Mr. Small has no power to say that. As I told you the other day I had the greatest difficulty in the world to prevent a strike over a little matter hardly worth talking about. If he had chosen his own men he could not have got better than he had.

16042. MR. MANT: There is one question I would like to ask—whether Mr. O'Sullivan was aware that his officers were opposed to the reduction from 25 per cent. to 15 per cent.

16043. MR. BARLING: I think he admitted that.

16044. MR. O'SULLIVAN: I have a recollection that some of them were; I think some statement was made to me that it was better to keep the 25 per cent., but I really cannot recall it.

16045. MR. MANT: Might not that account for the fact that this work went on for five and a half months, and the officers therefore did not complain?

16046. MR. BARLING: *Q.* That is to say, the officers having learnt that it was the Ministerial policy—the Rotation System coupled with this 25 per cent.—they gave it a trial, as they felt it was the Minister's policy? *A.* I think a month's trial ought to have been sufficient to convince them one way or the other. Had they made any representations to me I would have taken no personal umbrage—no official can point to any such action of mine. I think a month's trial ought to convince any official as to the success or failure of the Rotatory System.

16047. MR. MANT: Most of the questions are a matter of argument. I think Mr. O'Sullivan admits with regard to Mr. Ryce that he, at any rate, is not aware of any definite charges against him. I should like to ask Mr. O'Sullivan now—and consider it is only due to Mr. Vernon and Mr. Cook—whether he can give us any reason in their capacity or conduct to account for this extra cost of the stonework? *A.* As I said, I honestly believe these officers made a mistake in the estimates. Mr. Leahy's tender was for over £40,000 for one pavilion; their first estimate was £22,000 for one pavilion, then it was raised and raised.

16048. *Q.* I want to learn whether he has formed that opinion from the facts of this tender and the evidence given here, or whether he will assist the Board with any other evidence? *A.* I am only going by the evidence I read and this statement I have read. The alteration of the specification—I think at the time the contractors had some reason for their action, and now I presume this is one of the reasons.

16049. MR. BARLING: *Q.* In regard to that, Mr. O'Sullivan, it was put to them very pointedly why they did not tender; you have read their answers, I presume? *A.* Yes. I may be right or wrong. I am only giving an opinion. I think the contractors at the time knew that those estimates were too low. I may say on that point that I went out of my way to give a fair trial to the Day Labour System as opposed to the contract system. I spoke to Professor Anderson Stuart, and he agreed with me that the competition should take place. Here were two buildings, alike as two peas. We proposed that one should be under Mr. Cook, and the other under another officer—both good men to take charge of the work. I had no interest or motive in doing anything wrong; I did not want to trap the contractors. And to my surprise they declined it.

16050. MR. DELOHERY: *Q.* Did they give their reasons? At the time they gave some reason, but I think the estimates were another reason.

16051. MR. BARLING: *Q.* Is there anything else you would like to say;—are there any facts within your knowledge which would help us in this inquiry? *A.* I am quite satisfied to rest on the statement I have made, unless there is something I have passed over.

16052. MR. GRANT: *Q.* I wish to know from Mr. O'Sullivan if he knows whether these specially selected 15-percenters got more payment than the ordinary rotation men? *A.* I am not aware of that, Mr. President. The reason I put it at 15 per cent. is that I think some respect is due to the engineer, overseer, or architect, in these matters, so that he may have men that he knows—at all events, leading hands—and then he cannot say he did not have a fair selection.

16053. MR. GRANT: *Q.* Do you know if any record is kept of these special men, showing that they are giving better value for their money than the ordinary rotation men? *A.* No, I do not know that.

16054. *Q.* I wish to ask a question with reference to a deputation which took place some time ago. I asked the Minister, "Who directed that the supply of stone should be curtailed," and Mr. O'Sullivan refused to permit me to put that question. I wish to ask Mr. O'Sullivan if he remembers that taking place? *A.* I think there is a full report of that and other matters in the papers—I cannot recall it just now, but I remember you putting some question.

16055. *Q.* Does he remember refusing to permit me to put that question to Mr. Vernon and Mr. Cook? *A.* If the report says so.

16056. MR. BARLING: *Q.* What Mr. Grant refers to is this: The report does not contain that information, and he is now asking you whether you remember his putting such a question? *A.* I have an indistinct remembrance of Mr. Grant putting some such question to me, and possibly it ought to have appeared in the report; I am not certain that it has not. It would not impugn the honesty of the reporter in any way; many little things happen in an interview or deputation, and it is not thought necessary to put them in—that might happen every day.

16057. MR. GRANT: One of the statements made to me was that the supply of stone on the work was insufficient, and when I was questioned as to why the stonework was costing so much, I referred to this matter. I wished to know who directed that the supply should be curtailed, and the Minister refused to permit me to put that question, and that does not appear in the report.

16058. MR. BARLING: Mr. O'Sullivan's reply is this, that he has some slight recollection of such a question.

16059. MR. GRANT: *Q.* Mr. O'Sullivan seems to take exception to some words used in reply to Mr. Stuart, when I informed him, in connection with Lauderdale's case. Mr. Stuart wished to know exactly what took place, and I replied that the words used were "effective"? *A.* That is just what I did take exception to. It looked as if it was dictation.

16060. *Q.* Was any dictatorial language used? *A.* No, not in the least.

16061. MR. GRANT: *Q.* As a matter of fact, is it not true that I pointed out that Lauderdale was a competent stone-cutter, that I had known him for a great number of years as such, and that I regarded his discharge as a distinct drawback to the Day Labor System? *A.* There was something that appealed to my sympathy, I know. I was determined not to take men away from private employers. But you used other reasons. You appealed in a sympathetic way.

16062. *Q.* The language was so effective that the man got back? *A.* Certainly not effective in the light of dictation.

16063. MR. MANT: *Q.* It was insinuated that a strike was threatened? *A.* Oh, no.

16064. *Q.* Nothing like that? *A.* No.

16065. MR. THOMSON: *Q.* I would like to ask if these applications that have been put in here come through the Minister, or the Head of the Branch. I want to know where they are addressed in the first place? *A.* [*Looking through applications referred to.*] These would all come through me. Here is one, "If you have an opening," "If opportunity offers"—as I did in connection with the Dock. All these letters would come through me first. . . . No. A number have gone on without coming to me at all. Here is one, addressed to Mr. Cook—that would not come through me. I think the majority did not come through me. Here is one from Mr. Winchcombe. I do not remember Mr.

Winchcombe

Winchcombe addressing me at all. As a rule, a Member comes to see me, and I take the particulars down, as per this [*indicating one.*] Then I am responsible for that. Those addressed to Mr. Cook have never come through me. The majority of those have not come through me at all.

16066. MR. GRANT: I looked through those, and there is only one there on behalf of a stonemason, and he did not get a start.

16067. MR. THOMSON: *Q.* I would like to ask if it is customary for Members of Parliament to address the Heads of the Department requesting employment for men? *A.* No. As a matter of fact, all these applications should come through me. Here is where the danger arises, where you do not have the Rotation System. A number of those men may have been incompetent. They may be just as incompetent as the men from the State Labor Board. I have discovered the fact, not only here but at the Dock as well, and down at the Central Railway Station, and Mr. Foley's works, that members of Parliament had been sending letters direct to the different officials. The other night I produced nine from Mr. Carruthers himself that did not come through me. No; I must correct that—there were two lists, one that did, and one that did not.

16068. MR. THOMSON: *Q.* I would like to ask if it is Mr. O'Sullivan's opinion that it is a wise thing for Members of Parliament to address officials in charge of day labour or any other jobs in that way? *A.* No; I do not think so, and it is that which hampers efficiency a good deal at times. I honestly have been doing my best to minimise political interference; I have sent out notices to Members of Parliament time after time, and informed them that I would take no more letters, and now it is only in the case of relief works that I will accept any letters at all. I remember the time distinctly when I thought I would be able to establish a Board managed by the officials—as that Board always has been—which would take this load off the Minister's back altogether, and that was the chief object of establishing the Board, as well as to give fair play to the men outside.

16069. MR. BARLING: *Q.* As far as the Rotation System goes, it was a recommendation to you from the State Labour Board? *A.* I think it was approved by Mr. Hanna; I am not quite sure whether Mr. Davis was not in favour of it. The Board itself was my creation. I had a two-fold object in view: to give all men outside a chance of getting work, and to relieve the Minister of a good deal of worry and vexation, and loss of time in opening these letters.

16070. MR. LOVERIDGE: Seeing the position Mr. O'Sullivan has taken up as to the legality of our being present—

16071. MR. BARLING: I do not think that need be referred to now.

16072. MR. LOVERIDGE: We were quite prepared to put a series of questions to Mr. O'Sullivan. The Board said at the opening of Mr. O'Sullivan's evidence that we were not here to discuss the system. I think we have been discussing the system all the time.

16073. MR. PRINGLE: I think it would be just as well to turn up that question that was asked Mr. Stuart, and I think it will be found that Mr. Grant put those words in Mr. Stuart's mouth. We are not against day labour; we use it ourselves. We are against day labour on Government works simply, as the Minister has explained, because of political interference. That is our position in a nutshell.

16074. MR. THOMSON: *Q.* I would like to ask if the Minister issues any instructions to the State architect as to the quality of the work to be done on day labour works? *A.* No; I certainly do not remember any instructions to that effect.

16075. *Q.* I would like to ask if he issues any instructions that it is to be superior in any way to that that he demands from the contractor? *A.* I cannot recall that, but I certainly would expect the men to do the same for the State as they would for a private employer.

16076. MR. BARLING: *Q.* You leave that to the architect or the engineering experts? *A.* I never interfere in any technical details, because I do not profess to know about them. I profess to be guided by skilled men. It would be unfair and improper for me to attempt to interfere in technicalities.

16077. MR. BARLING: Is there anything else?

16078. MR. O'SULLIVAN: I hope the contractors will not take it now as any personal feeling or hostility that prompted my remark. I simply took the stand I did, with all due deference to the Board, because it appeared to me that the contractors ought not to have been here at all; it was a work in which they had no concern whatever, and which they absolutely refused to tender for.

16079. MR. BARLING: The Board must remove any kind of blame from the contractors, because they were asked to come here by the Board. The points submitted to the Board were these:—It is stated that the Prince Alfred Hospital stonework was costing a great deal too much, and our object is to find out whether that is true. The contractors have helped the Board very much in giving specific instances where work of a somewhat similar character has cost so much, or rather they have got so much for it. In the same way Mr. Grant and Mr. Thomson—

16080. MR. O'SULLIVAN: They have a *locus standi.* It seemed to me like a Freetrader appealing to a jury of Protectionists.

16081. MR. BARLING: These gentlemen (Mr. Grant and Mr. Thomson) have not been carrying out the work at all. They represent a great society, and they are doing their best to show that this work did not cost too much. Now, it was necessary for us, in order to weigh their evidence, to have the other side, and it was for us as impartial jurors to judge between the two statements. I am perfectly certain of this, that Ministers will find they have a body of evidence here such as has never been obtained before, and while it is not the business of the Board to advise as to the policy of the Government, it is the business of the Board to give facts, and on those facts I think Ministers will be able to arrive at a fair conclusion on the subject. We could not have got that information in any other way. With regard to the remark that Mr. Grant and Mr. Thomson came here to defend their own members, the Board never looked at it in that light. We have looked at just the pure question as to whether this stone has cost too much, and we have heard the two sides on the question. We shall now have the duty of presenting our report, which will enable the Government or any impartial reader to come to a determination as to where the truth lies.

16082. MR. O'SULLIVAN: You certainly have gone to great pains in the matter. I know I read through 15,300 odd questions.

(Mr. O'Sullivan then retired.)

Appendix II.

Extract from Evidence taken at meeting held 14th October, 1903.—Address of Mr. J. Grant, representing the Operative Stonemasons' Society of New South Wales.

17108. MR. GRANT: Mr. President, the prolonged nature of this inquiry leaves me a very big task to attempt to sum it up, even on our own side, and I do not think, seeing that no time has elapsed since the inquiry has taken place, and seeing that all the facts are fresh in the minds of the Board, I would be justified in going into the matter very exhaustively; still, that is not going to prevent me from dealing with it in a fairly exhaustive way. I think the best method for me to adopt would be to deal first with one aspect of the question, and that would be in connection with the rotation system of the employment of labour.

17109. The whole question in the evidence submitted by the Department, to a large extent rests upon that. The evidence shows that, while we insisted upon all the members of the Union getting a fair chance of securing employment, we have never offered the slightest objection to the foreman discharging any mason, which left him with an absolutely free hand to secure, practically, the selection of the men he wanted. There has always been a fairly large number of men registered at the State Labour Board, only on one occasion did they run down to something like ten or twelve, and if the men employed were not suitable, all the foreman had to do was to call for more men, and if they were unsuitable to weed them out. To that course the Masons' Society never offered the slightest objection, and for very good reasons, or for reasons that appear to us to be quite satisfactory; there was never any objection offered by us to that performance of his duty on the part of the foreman.

17110. Now, it will be at once understood that if we were to permit a charge, the same as that levelled against us by the Department, to go by without protest, we would be doing the Day-labour System, so far as the Government work is concerned, a very grave injury, and it also appears to us that, to permit the charge of general slowing down to go by unchallenged, it would have another serious effect—stonecutters generally would get the name throughout the State of slowing down, and stonework would consequently suffer. On that ground alone we deem it our duty to go into this question; but I may say here that if we believed there had been a general slowing down, or a slowing down to any extent at all of an appreciable character, neither Mr. Thomson nor I would have been here. When Mr. Davis, the Under Secretary for Works, who occupies a very high position here, came and told the Board, in accordance with a statement made by Mr. Cook, that exactly similar work was costing only 4s. 6d. per cubic foot, we were not surprised to see that a statement of that kind had a very disturbing effect on the minds of the Board; but, I think we have shown—I think the evidence has shown—that, so far as the stonework at the North Shore Cottage Hospital, to which that statement referred, is concerned, there is really no comparison whatever between that work and the work of the Prince Alfred Hospital. We showed the Board that the basement of that building was of rock-faced construction—almost the cheapest character of stonework. We also showed them that that stone was purchasable at something near 9d. per foot, and was very easily worked. Now, I think that, so far as any reference to that job on which that statement was founded is concerned, we completely knocked the bottom out of that piece of business—at least, we have not heard any more about it. No one recently has endeavoured to compare that work, as far as the cost is concerned, with the work at the Prince Alfred Hospital.

17111. Mr. Cook, Mr. Vernon, and Mr. Ryce all charge the rotation system with being responsible for a portion of the cost. Mr. Cook charges, practically, the whole of the extra cost to that system, and Mr. Vernon does very nearly the same. Mr. Ryce also comments upon the small cubical contents of the stone, and in reference to Purgatory. They practically charge the stonecutters with being responsible for the whole of the extra cost.

17112. There has been no trouble in connection with the work carried out by the Government on previous jobs under the Day-labour System where the foreman had, presumably, a free hand; but we showed that you on the very first work carried out by the Government under the Day-labour System—the State Secretary's Offices—the men were taken almost, if not quite, in rotation from a list, and it appeared that the men themselves went individually and put down their names on that list. So that from the very start of the Day-labour System the rotation system was more or less in operation.

17113. There has been no evidence supplied here to show that the statement made by Mr. Ryce that the specially selected men slowed down along with the others is correct. There has been no evidence to show that the men did actually slow down; the only statement is that the actual cost of the work is more than the office estimate, and that therefore it is excessive. I might state that I have worked among masons for a very great number of years and the number of masons who are inclined to loaf are very limited indeed. My knowledge of the men who have been employed by the State at the Prince Alfred Hospital is of such a general character that I feel certain the men there have not been loafing. It is most difficult, of course, to find absolute proof of a statement of that kind, but my knowledge of the men, by working along with them, leads me to believe that they are not the kind of men who would loaf; and the records of the work they have done and supplied by the Department, tells me further that they have been only taking a reasonable time to cut these stones. There may be a few exceptions either one way or the other, and there may have been exceptional circumstances surrounding those particular pieces of stonework, of which I have no knowledge.

17114. The fact that the men were selected by rotation has, of course, been strongly opposed by the foreman and by the Department, but everything we have done as a Union, from the very inception of it, has been opposed by somebody. First of all, the very existence of our Union has been opposed as being injurious to ourselves and to the community at large, and then when we wanted to establish the eight hours' system there was trouble again. Later on, when we wanted to reduce the hours, there was more annoyance. We always displease somebody, and, consequently, when we asked the State to establish a minimum

minimum wage for all contractors, that was also objected to. Afterwards, when we advocated the extension of the Government as an employer, the Contractors' Association were very strongly opposed to it, purely, of course, from a citizen's standpoint, and also, perhaps, from their own standpoint. They appear to be also very much annoyed over the establishment of the rotation system. It will be at once apparent that if the Day-labour System is to continue, and to provide that the whole of the men shall get a fair show of employment at some time or other, no system has yet been devised where they can secure that except the rotation system. It has been pointed out in the evidence that, if the whole of these works had been done by contractors instead of by the State, different contractors would probably have got the works, and they would have required to get a fresh selection of men every time they started, and yet they would have still succeeded in carrying out the work in a profitable manner. There has been nothing furnished here to show that, because these men have been selected, or rather because their names have been sent on to the State Labour Board by the Secretary of the Society, the foreman should lose any control over the men on that account. We had the work at the Penitentiary quoted, where the men are employed under exactly similar conditions to those at the Prince Alfred Hospital, and we had evidence that that job was costing about the right figure. We have had no evidence to show that the work at the Fisher Library is costing anything worthy of being regarded as excessive. The evidence supplied by Mr. Small shows that the cost of the Central Railway Station works is not beyond what it ought to be. Men have been employed on all these works, that is the Central Railway Station, the Penitentiary, and the Fisher Library, in exactly the same way as they have been employed by Mr. Ryce at the Prince Alfred Hospital, and it must be evident, therefore, that there must be something else besides the rotation system that will have to account for the alleged excessive cost of the stonework. A statement was made by me to the Minister some time ago that some of the men had contempt for Mr. Ryce, and Mr. Ryce himself confirms that statement; but there is no evidence to show that the particular man referred to did not do a fair day's work. There is nothing to show that he in any way slowed down, and my knowledge of the man tells me that he does a very fair day's work. So that, even if he did have contempt for the foreman, it does not follow—and according to the evidence it did not follow—that he did any less work on that account. The statement made that Mr. Ryce has no control over the men because they have been selected by the rotation system does not appear to me to be borne out by the evidence. We have shown all along that he has the greatest possible control over them by having the right to discharge them. Mr. Howie, in his evidence, showed that the rotation system, provided the foreman had power of discharge, should not affect the cost of the work very much. It was, apparently, a revelation to Mr. Howie to know that the foreman had the power of discharge. It was also a revelation to Mr. Frank McLeod to know that the foreman had the power of discharge. Evidently these gentleman, perhaps along with others, have been under the impression that once a man secured employment as a mason under the Government he was safe, but I think the Board will be quite satisfied that the foreman has all along had the same power of discharging men on a State job as he would have if he were employed by a private contractor.

17115. Now, an effort is being made here to show that, owing to the existence of an Appeal Board, the foreman would not exercise that firmness that would be necessary in order to secure the discharge of men whose places could be better filled by others; but, in reply to that, we have shown that, so far as we know—and I venture to say that I would have known if any mason had known that this Appeal Board existed—that Board may as well have not been in existence, and, furthermore, up to date there has been no appeal whatever made to the Board by any mason who was discharged by Mr. Ryce.

17116. I am not quite sure, even now, who is responsible for the existence of the regulations under which the stonemasons, for instance, have been employed. All I know is that we had no hand whatever in their framing, and we have shown in the evidence that some of those regulations, in our opinion, were extremely injurious to the Day-labour System. For instance, the regulation handed down from a previous Government to the present one, directing the discharge of a man, who left an employer when his turn came to be sent for by the State. We have shown you that that regulation was an extremely injurious one. We have not hesitated to characterise it as a silly and stupid one. As an illustration of its injurious effects upon the Day-labour System, I have only to recall your attention to the case of Robert Lauderdale. That particular mason, as you are aware, was employed by Mr. Howie when his turn came to be sent for. He is a thoroughly competent man; he had never worked for the State, but desired to so, and, defying this Ministerial regulation, he left Mr. Howie and went to work for the State. Now, as I said before, he was a thoroughly competent man, and eligible in every way to be employed by the State, and yet we find that, for some inexplicable reason, the Minister for Works, at the instigation of the officers of this Department, and in accordance with his own regulation, discharged him. Now, I think the Board will agree with me when I say that that regulation, however it might affect the contractors, is injurious so far as the Day-labour System is concerned. We have always objected to any restraint being placed on our liberty. We believe that we have a right to go to Africa or America any time we take a notion like that, and the determination of the Minister for Works to attempt to restrict us in that way will always be objected to by us. I have no doubt our present Minister will ultimately see the wisdom of up-ending that stupid regulation. If he does not it will follow, as it has followed, that men will be afraid to leave private employers, and that the State will lose the value of their services. That is one of the inconveniences to which the Day-labour System has been subjected. I have no recollection of ever hearing of any contractor discharging a man, who was suitable, simply because he left another contractor to come and work for him, and if the Day-labour System is to continue, it is imperative that this insulting regulation should be up-ended.

17117. An effort has been made to show that the influence of the Stonemasons' Society has been gradually encroaching upon the officers of the Department, and that now they are making a demand which will entirely take out of their hands all responsibility. Of course that is not the case. The fact that they have the power of discharging men effectually circumvents all that. It is quite true that for years after the Day-labour System was in operation we made no vigorous demand to have a fair share of the work, and it is quite possible, if it had been gone about in another way, a different position would now obtain; but I do not say it would be a position even then that would remain. When the Minister decided to give the men at Pyrmont a monopoly of the work, it did not take us very long to show him that he was then on very untenable ground, and, like a sensible man, he abandoned it; but for some reason he gave the officers the power to put on 25 per cent. of the men, and under that 25 per cent. so much annoyance was caused to the members of our Society that, as the result of a fresh deputation, it was

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reduced to 15 per cent., and at that it has remained. Now, under that 15 per cent. they have selected, I think, altogether, fifty-two members of our Society. I have no hesitation at all in saying that those fifty-two members have never received higher wages from the contractors. They have no special ability as stonecutters, they give no extra return to the Government, and there is no justification whatever for the continuance of that regulation. Out of a small union of less than 400 members, I think fifty-two have been picked out for a special share of Government day work. Had this work been done under the contract system, of course, this would not have taken place. The existence of that Regulation has a very damaging effect in more ways than one. It also permits the Minister to put a man on. For instance, we we had a case where Mr. Ryce discharged a man named George Lennon at the Pyrmont shed. He had no fault to find with him, and it appears from the evidence that he ought not to have had any reason of complaint against him, yet we find he discharged that man, and we find that the Minister, under this regulation permitting the overseer to put men on, peremptorily ordered his return to State employment, and the foreman meekly submitted. If it is a good thing to protest against the rotation system as a whole, it should also be a very good thing on the part of the foreman to protest against any interference with his duties in this respect; but, so far, no protest has come. We also find that, under this regulation, according to the evidence submitted by Mr. Vernon, the Minister transferred—or, apart from all regulations, put another mason, John Lennon, on at the Prince Alfred Hospital. Now, while Mr. Ryce may be supposed to have a free hand, I venture to say, not only would Mr. Ryce do it, but there are very few foremen in the city who would dare to discharge a man who was placed there by the Minister, or even by Mr. Cook or Mr. Vernon. The existence of the rotation system in a clean, straightforward way would have the effect of preventing even the Minister for Works specially selecting one man and placing him over the heads of all the others. It would absolutely kill political influence. I see by an extract in a recent copy of the Adelaide "*Herald*" that when the Minister was over there he was giving a record of the Day-labour System here, and he laid down the usual three conditions, namely, a fair day's work, a competent foreman, and the absence of political interference; yet we have that same Minister, who has the full power to say to-morrow that political influence shall absolutely cease—but he will not do it. Now, there is great necessity on his part to revise his speech in that respect, and I hope he will do it, or cease speaking in that way. The evidence also shows, according to the papers put in, that the rotation system has practically killed political influence at the Prince Alfred Hospital, with perhaps the one exception I have referred to. I say it is not good enough, and it is not fair to the masons as a body, that a system of this kind should be permitted to exist that has the effect of placing one man or two above all the others. The evidence shows that only one man made application to a Member of Parliament for a letter of recommendation to get employment at the Prince Alfred Hospital. Of course I offer no objection to a man taking every advantage of a regulation of that kind while it exists, still I am glad to see that he failed to secure employment in that way, and he is not amongst those who have been working there. Now, the masons as a body, I have no hesitation in saying, are bitterly opposed to the idea of having to wait upon a Member of Parliament to get a job. They are also opposed to come into Mr. Vernon or any other officer. They prefer to go to the foreman direct rather than go to these people for a job, but I know from painful personal experience that while the foreman is supposed to have a free hand all these other people can exercise a considerable amount of influence in securing employment, and the abolition of the rotation system will mean the opening of the flood-gates of all kinds of political interference. Of course it is a matter of no personal importance to Mr. Thomson or me which system prevails (the Board understand that), but we strongly object to the abolition of the rotation system, because we know that its abolition will mean the perpetration of Ministerial influence. I may state I was unaware of that permission Mr. Vernon got from the Minister under which Mr. Richard Norton was put on at the General Post Office. You will see in one portion of Mr. Ryce's evidence where men leave private contractors to come to work for the Government and where the genuine unemployed are walking about waiting for their turn; but Mr. Ryce makes no protest against the case of Richard Norton when he placed him on at the G.P.O. after he was only idle a few days. Of course I know Richard Norton, and also most of the masons, and I have no hesitation in saying that in placing him there Mr. Vernon did the whole of the members of our Society, who happened to be idle at that time, a serious injustice. I do not know the exact method he adopted to get there, but it was quite effective, and it simply means that, if that is to continue, Mr. Vernon's office, Mr. Cook's office, and every other office will not only be besieged by the masons, but by other tradesmen, because we are not going to allow one or two of these men to get work by political or departmental influence. We know full well that it is impossible for all of us to get in under that system, and we would much prefer a system whereby we would get a show of securing employment there, entirely apart from Mr. Vernon, Mr. Cook, Mr. Ryce, or Mr. O'Sullivan. We do not want favouritism at all. We want to get there by reason of our being tradesmen, and by reason of our being citizens. There is no system except the rotation system, under which we can get there. If you go up to the Minister for Works' room you will see a large notice hanging up outside "You must apply for employment somewhere else," but the existence of this 15 per cent. regulation means that that is disregarded. As I said before, there is no justification for such a regulation. It is an annoyance to everybody, with no advantage to the State.

17118. I have not had the time, otherwise I would have gone carefully through the time-book and supplied you with the actual time taken by the masons to cut the various stones at the Hospital, and I would have specialised the so-called "Specialists" and put them against the rotation system, and I have no doubt the ordinary rotation masons would have shown that they were giving quite as good value to the State as the specially selected ones. I would like to add here that, during all the time I have been employed as a stonemason, during all the time I have been in the building trade, notwithstanding the evidence given here, I have never known a single case where any contractor kept on a mason after the work was done. I made careful inquiries regarding Mr. Hodge, who was kept on by Mr. Deane, and Mr. Hodge told me, as I said in evidence, that he was kept on cutting coping for another job. That portion of Mr. Ryce's evidence referring to that appears to me to be so much padding. It is entirely foreign to me, and there has been no evidence here to show that men have been kept on at a loss when the work was finished.

17119. Mr. MANT: The contractors have sworn to it.

17120. Mr. GRANT: I did not notice that. Another complaint was made that all kinds of men were classed together when they were sent in to be registered. Now, instead of that being so, the evidence I gave showed that those men were carefully singled out into cutters, fixers, wallers, and all the other

other branches of the trade, so that there was not the slightest fear of any of these men being sent to Mr. Ryce when he wanted cutters. The two particular names on which he desired to build a strong case were Widgery and Aslin. Both these men were improvers when they said they were journeymen; but when Mr. Ryce saw them he did not start them, and consequently the job could not have suffered very much on that score. It seems to me that it is absolutely unfair to the men who follow this line of business that some should get a monopoly of the work, and that they should be transferred from job to job. I would almost be prepared to entirely abandon the Day-labour System rather than permit one set of masons and foreman to monopolise the whole of the day-labour works. It seems to me altogether wrong that one little crowd should get all that.

17121. I dare say I have said about enough in connection with this rotation system. I am sure the Board and everyone here now know pretty well nearly all that is to be known of the rotation system. I have only to add this: it is the only system that will kill political influence; it is the only system that will do away with departmental influence; it is the only system under which we can all get a fair show; and, as pointed out by Mr. Symonds, Mr. Howie, and others, it should not affect the cost of the work. So that, under all these circumstances, I say that the Day-labour System and the clean rotation system are inseparable from each other.

17122. I will now deal with the cost of cutting the stone. I understand that the business of this inquiry is to find out why the stone is costing more than the estimate, and our contention has been that it is due to the small cubical contents of the stone together with the large amount of superficial work per foot cube. Now, in support of that contention, I would like to invite the attention of the Board to a statement put in here by the Department regarding the cost of cutting the pediment cornice. Probably the most elaborate stone in the cornice is the springer at the base. It is one of the largest stones in the building, and, apparently, one of the most elaborate.

17123. Mr. BARLING: It would be over 20 feet?

17124. Mr. GRANT: That stone contains 83 cubic feet, and to the casual observer, to the public generally, it would at once appear that a stone of that kind, with elaborate mouldings, returned at the end, should cost very much more per cubic foot to cut than the plain stone in the basement, such as circular coping; but the actual result of that kind of work shows that Longmuir cut the stone for 1s. 8½d. per cubic foot. Longmuir took 100½ hours to do it, and J. Campbell (2) took 104½ hours. I think Longmuir is a selected man, but I am not sure whether Campbell No. 1 is.

17125. Mr. COOK: Yes, both selected.

17126. Mr. GRANT: In any case these two men working together and working practically for the same time, cutting an elaborate stone of that description, cut it for 1s. 8½d. per cubic foot, and I have no hesitation in saying that is a reasonable—a cheap price in fact—at which to cut that stone. Everything must have gone smoothly to enable them to cut it at that price. Now, when you see these two men take on the stone underneath that, that is the springer seat, which is a much smaller stone—it only contains 27¼ cubic feet (that is, 4 ft. 2 in. x 3 ft. 5 in. x 1 ft. 11 in.) we find that, working, I presume, under exactly the same conditions, and working a similar quality of stone, Longmuir's stone cost 4s. 2¾d. per cubic foot. It would be very unfair to say that because this stone cost 4s. 2¾d. Longmuir, therefore, must have been loafing. It would not appear to any casual onlooker that there is that great difference in the cost of those stones, yet I have no hesitation in saying that such is the case. We also find that a similar stone worked by John Campbell No. 1 cost 4s. 4¾d., about 2d. per foot more. In one case, you find one large stone costing 1s. 8¾d., and in the other case it costs from 4s. 2¾d. to 4s. 4¾d., exactly the same kind of stone, you might say the same kind of work, but one stone contains large cubical content, and the other small cubical content with a little more elaborate work on it. I only give these as illustrations to show that the cost of stonework depends almost entirely on its cubical contents. From information supplied to me and gleaned from the time book, I find, as we have contended all along, that the cornice is the cheapest portion of the building. It only averages a little under 2s. 10½d. per foot. Now I say anyone looking at that cornice would at once come to the conclusion that it ought to cost a good deal more than the plain circular coping 9 in. x 6½ in. in the basement, or the little sills in other portions of the building, but yet we find that, owing to the large cubical content behind the facework of this stone, it costs less than 2s. 10½d. per cubic foot on an average; and I might state that, in looking over the names of the men who were working this pediment, I find a portion of them are special men and a portion of them are merely rotation men, and it does not appear from this that the special men have, to any extent, if at all, excelled themselves so far as cutting this stonework is concerned. That cornice is fairly comparable with the cornice at the Harbour Trust Offices, with the exception that that is a little more costly to cut. It is fairly comparable with several cornices that might be mentioned, but the point I wish to make clear is this, that owing to the large cubical content in that class of work it is cheap, and that is the solution of the whole difficulty, that the cubical content of the work at the Prince Alfred Hospital is small in proportion to its face area. The evidence furnished, for instance, by Mr, Dumbrell, who showed you that he worked casually at the Hospital for something like a fortnight. It is to be very much regretted that a few more records of this kind have not been available. I would like to state here that, for some reasons that have never appeared to me to be satisfactory, there exists a general objection amongst masons to keep a record of the time it costs to cut stone. I am not able to account for the existence of that objection, but I know it exists, and I know records of this kind are very scarce; consequently our evidence has not been nearly so strong on that account. Had we been able to furnish this Board with records of the time we took to cut stonework of a somewhat similar character, we would have been in a very much stronger position, but we have here a record of a number of stones cut by Mr. Dumbrell. Now, it was pointed out here that Mr. Dumbrell—if not a specialist, is at least a very desirable man, and one who could be relied upon to do a very fair day's work, and one in whom the Department had every confidence—worked a number of stones, and the average cost of cutting alone came to 6s. 0¾d. per cubic foot. I think they were, as a matter of fact, all different kinds of stones, and we find that is the average for that period—6s. 0¾d. per cubic foot. Now, if that held good right throughout the job, it must be quite evident that the estimate furnished here by the contractors and others would not be the correct estimate, and I have no hesitation in saying, looking over this book here, that the time taken as a rule is a very reasonable one, and the cost of cutting the stonework is, to all intents and purposes, what it should be. You will notice that during the inquiry there was a general objection on the part of everybody to tell the cost of stonework, and I think for very good reasons, because you know that the cost of cutting stonework is a most varying quantity; a base-course out of a certain quarry will cost so much, and immediately it is altered in height, width or in length, the cost per cubic foot varies along with it, and

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while it is quite possible for a contractor to give an estimate that will cover the cost of the whole job, he finds it very difficult indeed—or, at least, they have shown a reluctance—to simply put in detail the actual cost of cutting the stone. More than that, they have had no experience whatever of the cost of small stone. They have had experience in estimating the whole of a job, but they have had no experience in estimating the cost of stone containing only small cubical measurement, consequently we submit that their estimate of this work, to that extent, is faulty.

17127. Now, I wish to invite your attention to the prices as submitted by Mr. Loveridge. I understand the instructions were to price all these at per cubic foot. I do not intend to go through them in detail, but I would invite the attention of the Board to the estimated cost of cutting No. 2—that is the circular basement coping 9 ft. x 7 ft.,—2s. 9d. per cubic foot. That price is absurd. There is no mason to-day in the city who can do it for that price. No mason, in my opinion, has ever done it. The price submitted here, I think, by Mr. Loveridge, for cutting that stone was from 2s. 6d. to 2s. 9d. per foot run, and he must have developed an extraordinary fleeting stroke if he is now prepared to cut that for 2s. 9d. per cubic foot. No mason in the city can do it. Some of the items he has down here I have not very much objection to, but some others I do object to, particularly to the estimate he places on those impost caps. I have cut impost caps, and I have cut similar work, and that estimate of 5s. 5d. is a price which no mason in this city could do it at; they certainly could not do it with Waverley stone, and I question very much whether they could do it with the softest stone in the city. It certainly cannot be done with Waverley stone for 5s. 5d. The estimate for the colonnade blocking, section 1 ft. 2 in. x 7 in., 4s. 4½d., is altogether to small. Item number 18, the colonnade parapet coping, as per sample 18 (5s. 6d.) is just about half what it ought to be. When, in the hands of men like John Campbell No. 1, stone of that moulding costs 11s. per cubic foot, and in the hands of Campbell No. 2 it costs 11s. 9d. or 10s. 6d. or thereabouts, there are certainly no masons in this city who can do it very much cheaper. I have watched these men work, I know what they can do, and they are men who work consistently the whole time without any stoppages at all; and when in their hands it takes 11s. to do it, the price of 5s. 6d. is simply ridiculous, and altogether unreliable. There are no masons in this city who can do it for that price. There are other items to which I might take exception, but I do not know that it is worth my while doing so.

17128. Mr. Loveridge: Now is your time to take exception to prices of that kind. Tear them to pieces if you can.

17129. Mr. Grant: I would like to invite the attention of the Board to a statement made here by Mr. Stuart. Mr. Stuart stated that no builder would come here and give away his opinion—indicating to me that they were not prepared at that time to give a price for the stone-work of this building. We all heard the other statement that he made, and which he subsequently modified, that he came here to do as much harm as he could to the Day-labour System. Of course he subsequently modified that by saying that that was his feeling towards it, and I will, of course, accept his amended opinion; but, at the same time, they have cut these prices down to figures below what they can be done at. There is one item there, for instance, those small sills, which were estimated by Mr. Howie as being worth about 7s. per foot—I mean those 8 x 7—and Mr. Howie is a man for whose opinion anyone in the building trade must have considerable respect. He is a practical man; he knows what he is speaking about, and I believe he has done some small work of this kind, although it did not come out in evidence. I believe that is the little job over which he fell in. We find that; although Mr. Howie wants 7s., Mr. Loveridge and his colleagues are prepared to cut it for 4s. 3d. I had an opportunity some few days ago of taking the time it took to cut exactly similar sills, but they were cut from softer material. An exactly similar sill to that being cut for the Prince Alfred Hospital—7 x 6½, 4 feet long—took a man half a day to cut it; that is 5s. 6d. Another man took about an hour and a half longer—7s. 6d. To put down a price of 4s. 3d. for that material in Waverley stone is ridiculous. It cannot be done by any of the stonecutters of Sydney—at any rate I do not know any of them who could do it.

17130. I might invite the attention of the Board to the fact that prior to this inquiry the Department seemed to have no record of the actual cost of cutting stonework. Mr. Vernon stated on the 12th February he had no data to go upon.

17131. Mr. Vernon: That is day labour works, not contract works,

17132. Mr. Grant: Yes. Since then it has been possible to test these by the fortnightly returns. Now, in connection with the cost of Purgatory, I am prepared to coincide with the views expressed by Mr. Howie, that on large stones where there are only beds and joints to be put on, and where the stone is delivered at 2d. or 3d. per foot less than the other Sydney freestone, the cost of Purgatory and ordinary freestone may nearly approximate each other; but, when it comes to cutting stones, the same as those test sills are, the difference in the cost of the two stones is considerable, and I am not prepared to admit, and I do not for one moment admit, that a difference of 1s. 1d. per foot is the real difference between the cost of cutting Purgatory and the cost of cutting Waverley stone when the comparison is made with small stone the same as that used on the Prince Alfred Hospital pavilions. Unfortunately there are no records available, but if they were available I venture to say they would be eye-openers to everybody as to the cost of those small sills in Purgatory. No records were available of the cost of cutting the basement in Purgatory, and unfortunately nobody seems to know anything at all about how much it cost to cut. Nobody seems to know whether the masons took a day, two days, or two weeks, and I venture to say if that information were available the extra cost of cutting Purgatory as against Waverley would be nearer 5s. than 1s. 1d., which Mr. Vernon tells you is the difference.

17133. I disagree altogether with the statement made by Mr. Ryce and by the others that the work of estimating the cost of the Prince Alfred Hospital work can be done so well without the plans. It is always of the greatest assistance to anyone estimating to have the plans in front of him, and also to have sections of all the work. Both Mr. Howie and others objected to this system of estimating, and I also think that the expert is of the opinion that it is not the correct way of estimating the cost of work of this kind. I think I heard him say that it was an unscientific way of doing it.

17134. I don't think, Mr. President, I need go any further into this matter; it would only be a question of reading over the evidence given on our behalf, and I venture to think the Board are fully conversant with the whole position, more so than I could make them if I spoke for two or three hours, and I do not think it is fair for me to do that. I think I will, therefore, give way to my colleague, who will deal more particularly with the actual cost of the stonework than I can. It has been my lot to deal to a large extent with the rotation system. Mr. Thomson has taken up more particularly the other side of the question. I do not think I can say much more about the rotation system, and I will, therefore, give way to Mr. Thompson to put his views before you.

17135. Mr. Barling: We must compliment you, Mr. Grant, on your terse address.

Appendix III.

Extract from Evidence taken at meeting held 14th October, 1903. Address of Mr. A. Thomson, representing the Operative Stonemasons' Society of New South Wales.

17136. MR. THOMSON: Mr. President, and Members of the Board, I want to repeat what Mr. Grant said, that if we believed there was any slowing down or loafing in connection with this work, neither of us would have been here. Further, while I hold certain opinions with regard to politics and industrial questions, I have tried to view the question at issue from a commercial standpoint. Although I agree that it is desirable to build public works, which are of a monumental and educative character, by day labour, I hold that the cost of those public works have to come within measurable distance of the ordinary competitive commercial cost; further, I believe that under the present competitive system, the article the State should get cannot be obtained, notwithstanding the most rigid supervision that may be applied to the contractor. Those are my personal opinions with regard to day labour. As Mr. Grant said, it matters little to either of us personally whether the State or the contractor executes the work.

17137. We have gone into the question from our side to the very best of our ability. While we have got every assistance we possibly could get from the Department, and the greatest courtesy from every person connected with the Inquiry, we hold that the Bill of Quantities submitted by the Department has not been at all satisfactory. We think that the officers of the Department would have done themselves justice if they had instructed Mr. Pate to compile an entirely new Bill of Quantities for the amended design, which would have prevented me casting any reflection upon Mr. Pate or the firm to which he belongs, and would have conserved our time, and enabled us to know exactly the quantity of stone in the building. I am in the unfortunate position now of not knowing the quantity, notwithstanding all the evidence that has been given during the course of the Inquiry.

17138. Further, I have no illusions about the Rotation System. If the Rotation System is not an economical one it will have to go, but the Rotation System with a capable man in charge of the works would function economically. The loss in trying men would be such that it could not be found with a microscope. But it depends entirely upon the man in charge of the work. If he permits men who are unsuitable for the work or not quite so capable as others to remain there for months, or a year, then the cost must be excessive, and the Day-labour System to that extent handicapped; but if he acts promptly there can be no harm done to any day-labour work through engaging men in rotation; not only that, a man who has for some considerable time been in charge of works in the city gets to know the bulk of the men who follow that occupation; at least he knows a very large number of them, and we do not say, we have not contended, that all stonemasons are of equal capacity. We do not propound a doctrine of that kind. We say if you take fifty men by rotation from the books of the Stonemasons' Union they will cut in a given time the same quantity of stone as any other fifty taken by rotation, and never at any time during my experience as a stone-cutter in this State have I found a building going on where the foreman could select the best fifty. The best fifty were never open for employment; they were never walking the streets looking for work. He could only get a proportion of the very best men, and he had to put up with the average man. There is a great difference between the very best men and the least competent men, but the difference between the average men and the most competent men is not so very great; as a matter of fact, on some kinds of work, the ordinary average stonemason—and that is the man we should always deal with—can hold his own with the very best man day after day. There would be no difference in the output at the end of the week. On certain kinds of work some men, having had more experience than others, may reduce the cost a 6d. or, in some cases, 1s. a foot; but that only happens on special work. If the foreman could, owing to dearth of employment, choose the very best men—the very best 20, 30, or 50—he, of course, could get the work done cheaper; but when trade is flowing in the ordinary channel, when there is only a small proportion of the men unemployed, he has to take the men offering, and they are just average men, and contractors are subject to the same conditions. They can never get at any time exactly the men they want. We have contended all along that any fifty men taken by rotation from the list of the Society or from the list of the State Labour Board would cut as much stone in a week as the next fifty. That is our contention. We have never as a Union, as far as my knowledge goes, interfered or protested when officers of the Department discharged men who were insubordinate or unable to do their work; in fact, I do not hesitate to assert that I do not believe they would do it if a member came along with a case. I even go further, and say that I do not think you would get them to agree to the establishment of an Appeal Board. I believe that an Appeal Board is a very desirable institution where a man has to pass an examination before appointment, but for men who are employed for a limited period, without examination, I say there is no need for an Appeal Board. If a man is unsuitable in the opinion of the foreman—and there is no man more capable of saying whether he is unsuitable or suitable for the work than the foreman—then he should be turned about his business; treat him in the same way as the contractor would treat him. I see no way out of that; if the Day-labour System is to obtain, I, for one, will strongly oppose anything in the shape of an Appeal Board so far as the men who are merely taken on for a limited period are concerned. Apply it to men who have to go through some examination. As far as we are concerned as a Union it has been unknown to us that there was an Appeal Board, and I never heard of it till I came to this Inquiry. Further, I say that if the Day-labour System cannot stand keen searching criticism, it has got to go; it must stand alone. I have no illusions about that, either. I do not call it Socialism. It is not Socialism.

17139. Now, the State is, and has been for many years past, the largest employer of stonemasons, and many competent men, quite able to hold their own, have not even got an opportunity of a day's work. When the Rotation System was introduced—who introduced it I do not know—the men in possession had a very robust desire to become Civil Servants. The desire is very pronounced everywhere. It means permanency to a man; it means years of constant employment; it means to him comforts he would not obtain

obtain if he were only employed intermittently, and numbers of our members, when the Rotation System was introduced, very forcibly put it that some time or other they should have the right to that kind of employment. The work was better than the work they could obtain outside. I mean the character of the work was different, and the jobs lasted longer, and they thought it would lengthen them to have the Rotation System. Now, as I said, the results under the Rotation System will depend entirely upon the man in charge of the stonemasons or other workmen. The cost of the work in another direction will depend also on the man in charge. Now, I hold that if I am asked to make work of a good quality, I am not to blame if it exceeds the departmental estimate. If the foreman in charge says to me, "I want it like that," my duty is to do it exactly as I am told. When the result comes out that it cost—as our friend from Victoria said—about 1s. 4d. or 1s. 8d. more than it ought to cost, I should not be held responsible for that. The man who is responsible for that is the man who instructs me to make work of that quality. Now, that is what has happened in this case. From my knowledge of stone-cutting, I say there is no easier thing to do than to put 1s. 4d., 1s. 8d., or 2s. more labour on every foot of that stone, and work expeditiously the whole time. It is an easy thing to increase the cost in that way. Notwithstanding all the criticism that work has been subjected to, I say there has been nothing done like it, to my knowledge, in this city. If I had been in charge of the work, I would not have asked for such a quality and expect to compete with the contractors. With all due respect to the contractors and their statements as to its quality, I say again that I have seen nothing, taking it all through, done like it; and further, I have seen nothing in this city of such small cubical content, and I have been 21 years in New South Wales. The cost over the departmental estimate is entirely due to that. The stone is small in cubical content, and it is exceptionally well done. It only means this: if you have a wall with only one external face, and you have a stone 2 feet wide on the bed and 4 feet long, and you spend half a day longer on the face of that stone—I mean by spending half a day longer that you make an exceptionally good job of it—you divide that 5s. 6d. by 8 feet, while a stone only 1 foot wide on the bed and 4 feet long on which you spent half a day longer on the external face, you would have to divide the 5s. 6d. by 4 feet. Now, in the pavilions they have no bed area, and they made the face exceptionally good, which, of course, increased the cost. That, I contend, is the reason for the cost exceeding the value placed upon it by men whose opinion we must respect—Mr. Oakden and the contractors. Now, the stonemasons working there are not responsible for that. We are paid to do what we are told, and after all the evidence that has been given here I say that we do what we are told. There has been no insubordination there; in fact, Mr. Ryce said in his evidence he had complete and absolute control. That being so, I do not see how either Mr. Cook or Mr. Vernon can hold that there was an absence of control. Further, I do not see that a man coming through the State Labour Board office, if his name is sent along by the secretary of his Union—and, after all, the union merely consists of men banded together, just as the contractors are banded together, who have interests in common; men combine in nearly every avocation and profession. That being so, I do not see that any exception can be taken to any body of working men uniting to bring pressure to bear to improve their condition, and that is practically what the stonemasons have done. The Minister conceded—I do not want to criticise his actions—some of the requests made, others he did not concede; but I hold this, that it was not our place to have gone to the Minister. I think our place was to have gone to Mr. Cook, or Mr. Vernon, but I understand that when we did approach them they referred us to the Minister; so what could we do, but go to the Ministerial head if we wanted redress.

17140. I do not agree with those who believe that the stones could not have been cut on the building. I believe that every foot could have been cut on the building. If it had been cut there, it could have immediately been put on the building out of the way. In my opinion there is an abundance of room to have worked the stone there, without in any way infringing on that part which is reserved by the hospital authorities. There were four cranes there, and I would go so far as to say that a contractor would have found sufficient room there to cut every foot of stone. Of course, there might be objections which I have no knowledge of. It would have been a saving to have put a foreman there who would have had complete control over the cutting. Not half a one, but a whole one. It is best to give one job to one man. I do not believe it is wise to appoint a man to control two buildings at one time. I think the Department overworked Mr. Ryce. We are all limited in capacity. I think there are other officers overworked from the knowledge I have gained here. If there had been a foreman in complete control of the stonework, without being hampered with any other building, he would have been able to give us an accurate statement as to the quality of stone, without the aid of any outside person—I mean without calling in Mr. Pate. He could have located the whole of the stone and stated exactly how many feet there were in each part. Most foremen—capable men—can do that without any trouble, but I think Mr. Ryce was handicapped to some extent, because he had to order stone for two buildings, and the stone for the two buildings were landed on the same site. I do not know the internal arrangements, but it has come to my knowledge that they used to lend stone from one building to another. It is just possible that some of those stones may have got mixed up.

17141. Now, I am not at all clear in my mind as to whether we could not reduce the cost of this stone, say by 2d. or 3d. per foot. I regret to say that I had not the time to go through the time-sheets. I find, by casually looking over them, that there are on a number of them additions to the Prince Alfred Hospital. Those additions are an entirely different work. They were additions and alterations to the administrative block, and the Department should not load the pavilions with the cost of cutting for that block. The masons have been cutting stone evidently for this administrative block, and their wages are included in the cost of the pavilions. Not only that; I also drew attention to the discrepancy in the number of templates. Mr. Ryce, in his evidence, admitted that he had cut out of old stone some seventy templates. The wages went down for cutting those seventy templates, and, of course, there was no stone, which helped to load the stonework further. I find, by carefully counting them inside the building, that at the very most there is not more than 120 cube feet of templates in one pavilion; in the bill of quantities there are 695 cube feet. To make up the difference in cost a large amount of costly stone is needed, and I say it wants to be carefully looked into, and if carefully gone through, it would reduce perhaps the average cost for cutting 3d. per foot. That is an item we cannot afford to overlook.

17142. I put in during the course of the Inquiry three exhibits which I say bear out my contention, and which is borne out, to some considerable extent, by Mr. Howie in his evidence. My contention was that immediately you get stone 6 inches high, in estimating—if there is a very large quantity of it in the building—you must make allowance for extra cost. Immediately you increase the superficial area of the stone the cost to cut decreases. That was borne out by one of the exhibits I put in. The most costly

stone

stone cut in that exhibit was 4s. 5d. per cubic foot, its cubical contents being about 4 feet. The stone, with a large superficial area, was cut for 5 per cent. less. I have noted, for my own benefit, since this Inquiry began, the difference in cost of cutting other stones, and I find my previous experience borne out. In this building there is a large amount of 6 inch high stone, and the stonemason has the same trouble to take the 6 inch out of twist as he has with a stone 2 feet high; he has to put four edges to make it straight, and my experience is that that means a difference of from 30 per cent. to 50 per cent., according to the hardness of the material, and superficial area of the stone.

17143. With regard to the Nurses' Home, I may say that I hold the same opinion as Mr. Oakden. With all due respect to Mr. Stuart—and Mr. Stuart is a successful contractor, and he is very accurate; I know from experience he is a man who gets as much work out of the men he employs, I suppose, as most men; his supervision is of a very capable character—notwithstanding he says that he cut the stone in this building for 3s. 9½d., I have very grave doubts about it. I think he has made a mistake. I have looked at the building many times since this Inquiry opened, and I have made some careful enquiries from men whom I know were employed there.

17144. I put in an exhibit—fifteen stones I cut—and I drew Mr. Oakden's attention to the building. The average width of the wall was 18½ inches. They were a fair sample of the whole, and I pointed them out to Mr. Oakden. I can locate every one of them in the building. There are seventy-five stones, and I cut fifteen. They were cut out of the softest block of stone you can find in and around Sydney, and at this particular juncture it was exceptionally soft. It was a fair average job, and the average price to cut was 3s. 2½d. per cubic foot. Now, I say, Mr. Stuart could not cut the Nurses' Home stone at that money, 3s. 2½d. per cubic foot, comparing one with the other. The stone I cut was less costly to cut than the stone in the Nurses' Home; it was wider on the bed, and less elaborate. The stone in the Nurses' Home is more elaborate and narrower on the bed than the stone I cut. I think, taking it all round, Mr. Stuart has made some mistake with regard to that. With regard to the number of stones, when I gave evidence I said my estimate was subject to correction; but, taking Mr. Stuart's own sworn statement as to the number of cube feet, it will work out, taking Mr. Jeffries' evidence that the number of stones was 1,120, at 7¼ feet per stone.

17145. Mr. Vernon: He did not take the stones inside the building.

17146. Mr. Thomson: You know, as a practical man, there are not more than twenty. That would not make much difference. If you work out the figures with regard to these two pavilions, taking both Purgatory and Waverley, the average is 5 feet. We have to make due allowance, in comparing these two buildings, for the large amount of stone in the pavilions that is not only faced on four sides, but is faced, in some instances, on the top. The proportion of face area to the cubical content is much greater in the pavilions than in the Nurses' Home.

17147. None of the other buildings can be compared with the pavilions. They are what we called them at the beginning, "unique," and they are unique because of the fact that the stone is narrow on the bed. I say this with all due respect to Messrs. Loveridge, Stuart, and Pringle, who are to be complimented on the very able way they have put their case. Of course their case is in the interest of the State—we are all here in the interest of the State—to rid the State of this obnoxious system of day labour. They never had an opportunity before of putting their case, and I must complement them on the very able way they have put it, but I say again the Day-labour System has to stand that criticism or go. Notwithstanding all they have said, I want to say this to them, and I want to bring it under the attention of the Board, that I do not think they have quite understood the effect of this small stone. I think we are all a good deal wiser—at any rate those of us who take an interest in stonework—than we were when this Inquiry commenced. I have met it once or twice before; I had some practical knowledge of the cost of a building composed entirely of small stone. When the estimate was made it was estimated on the basis of large stone. Now those pavilions have no large stone in them when compared with the ordinary building. Of course, both Mr. Vernon and Mr. Oakden have pointed out that it is very much better to have the stone in low courses, and short lengths, because it is real building construction, but the contractor who cuts it down to bedrock—and he has to cut it down if he wants work, and we all know some of the contractors, as the Insolvency Court has told us, even get below bedrock—finds small stones costlier to cut. I have worked on buildings where one stone made three or four courses, and we put what is called sham joints or false joints across the face. Of course when the stone is up on the wall the average man thinks it is in three courses, whereas as a matter of fact it is all one stone. That is a more economical and expeditious way of doing work. It means a saving of from 30 to 50 per cent. when it is executed in single courses. But the pavilions, being brick and stone, had to be executed in single courses.

17148. Mr. Thomson: I want to direct the Board's attention to a point which I do not think has been prominently brought before your notice. In the course of this Inquiry evidence was furnished by the Department that they had cut for the Prince Alfred Hospital 5,843 feet of Purgatory stone and 3,416 of Waverley stone up to May the 5th. That was the original basis upon which we started. The Purgatory stone cost 6s. 6d. per cubic foot to cut, and the Waverley cost 5s. 5d. to cut, a difference of 1s. 1d. Now, I want to direct the Board's attention to the fact that since that return was put in we have had a fresh return which increases the amount of the Purgatory to 6,063 feet, or approximately 6,000. That is the total amount of Purgatory stone which has been used in the two pavilions. Now, at that date there was 9,259 feet cut. The balance left to cut, according to the latest return—and the latest return is within 200 feet of the total—was 8,075 feet of Waverley stone. According to the evidence furnished here the last day we sat Mr. Oakden pointed out very forcibly that it has remained at 5s. 5d. practically—it has neither gone up nor has it been reduced in price, but has remained practically stationary from the day we started this Inquiry. During the course of the Inquiry the returns put in by the Department have varied considerably. The average cost taken from the last fortnightly return supplied by the Department was 4s. 2d., whereas the previous fortnight exceeded 8s.; so that fortnightly returns furnish a very unreliable basis to work upon. What I want to direct the Board's attention to is that the bulk of he Purgatory stone which was used at the beginning of the job on the lower stories is cheap stone. A very small portion of it is elaborate in any sense of the word. Of course, there is no elaborate work at all on those pavilions, but the bulk of the Purgatory stone has no projection, although it is small in cubical content. Those diagrams prepared by the Department bear out my statement. That being so—and I contend it is so—if the whole building had been executed in Waverley stone the cost would not have

have been much over that estimated by the expert to be its value. If the Purgatory was excised—it has been a disturbing factor all through—the cost would remain somewhere between 4s. and 5s. I am convinced in my own mind that it would have reduced the cost materially if all that stone had been Waverley. The Purgatory stone amounts to practically ⅓ of the total used. There is something less than 18,000 cube feet in the two pavilions and the Purgatory amounts to approximately 6,000 cube feet.

17149. I would now again invite the Board's attention to the Nurses' Home. We had Mr. Oakden to examine the work that has been executed and the stone that is now lying on the sight for the new Police Offices, and I would draw the Board's attention to page 185 of the evidence. I contend that the Nurses' Home is, at least, a more elaborate building, and a more costly building to cut, than the new police offices. You will find on page 185 a schedule for the new police offices. The schedule rate for freestone masonry, axed true and square on beds and joints, rubbed on exposed faces, was 4s. 2d. per foot cube, and I understand this tender was accepted by the Department. He was the second tenderer, and we all know we were unable to find the lowest tenderer. They had no permanent residence; nobody knew anything about them. I understand, according to the evidence here, that the tenderer was to fix the stone for that money.

17150. MR. VERNON: He was to supply it as well.

17151. MR. THOMSON: I understand he was to complete the whole transaction, except cutting it to suit the brickwork. I do not know whether those figures compare with the sum, but he had £725 for the whole of the stonework. He was £125 above the lowest tenderer. Now, I have looked at that stonework; I was there with Mr. Oakden, and I say there is no comparison between it and the Nurses' Home; and there is no comparison between it and the pavilions. I say that the stonework of the Nurses' Home is much costlier to cut than the stonework of the new police offices, and if 4s. 2½d. is the market value for the stonework of the new police offices, then there is something radically wrong with the statement that the stonework of the Nurses' Home was cut, fixed, and completed for 3s. 9½d. per cube foot without any loss to the contractor.

17152. I would also invite the Board's attention to page 89, Exhibit No. 18. Those are the test sills that were cut at the Fisher Library, and I am drawing the Board's attention to those to show that the stone that has been used by the Department from Waverley has been somewhat hard in its nature. The difference between cutting stone from Waverley and cutting best bed Pyrmont is 14½ per cent.; that is, the Waverley stone is 14½ per cent. more costly to cut than the stone from Pyrmont.

17153. MR. BARLING: That is the difference between 5s. and 4s. 8d.?

17154. MR. THOMSON: I am taking the cutting. The cost of cutting the Purgatory stone was 4s. 9½d. per cubic foot; the cost of cutting Waverley stone was 3s. 8d.; the cost of cutting best bed Pyrmont was 3s. 2d.; and it works out that Purgatory was 50⅓ per cent. more costly to cut than best bed Pyrmont, and 30½ per cent. more costly to cut than Waverley, and Waverley cost 14½ per cent. more to cut than Pyrmont. Now, that proves to some extent that that stone which was then being supplied from the Waverley quarry was harder than it generally is.

17155. I want to say, further, that it seems to me exceptionally strange that when this Inquiry commenced, and when the reports were issued by the Department in regard to Waverley and Purgatory stone, they could not define then exactly the cost of Purgatory stone; that is, the difference between the cost of cutting Purgatory and the cost of cutting Waverley, although they had then cut a considerable portion of it. Both Mr. Ryce and Mr. Vernon in their evidence merely state that they allowed what they considered a liberal sum per foot, viz., 2s. 6d. They seem to have had even then no real knowledge of what it cost to cut Purgatory as against Waverley or Pyrmont stone. I understand that the Department's officers had already used Purgatory stone in some of the buildings they had executed, and therefore I cannot understand why it was not possible to have formed an accurate estimate as to its cost. I understand it had been used before by the Department, especially in connection with the Post Office. Mr. Ryce, in his evidence, said that the nearest comparison he could get from the works he had constructed for the Department was the Mint. Now, according to a return put in, the Mint cost something like 7s. 4d. per cubic foot to cut, fix, and all the other items combined. I do not know that it is very wise to compare those two buildings, because I have made some inquiries since with regard to that particular building, and I understand they used up some old material, which of course is a disturbing factor. Mr. Ryce said, in his evidence, that it was the nearest comparison he could get so far as the work he had carried out for the Department was concerned.

17156. Mr. VERNON: Where is that?

17157. Mr. THOMSON: That is in Mr. Ryce's evidence.

17158. Mr. VERNON: That the Mint was the nearest?

17159. Mr. THOMSON: Yes.

17160. Mr. COOK: It is a solid stone building.

17161. Mr. THOMSON: It is on page 26, *Q.* 228. Mr. Barling asked Mr. Ryce, "Which of the buildings you have mentioned would compare most with the Prince Alfred Hospital, so as to obtain a comparison?" and Mr. Ryce replied, "I should think the Mint would. That building had the smallest dimensions." Now, on page 8 it was sworn that the work then done on the Prince Alfred Hospital was of a simple character. That is one of the reasons why I desire to draw the Board's attention, and to fix their attention, to the fact that the whole of that work of a simple character was cut out of Purgatory stone. On page 8 of the evidence the Art Gallery is put in as a comparison, as far as cost is concerned, by Mr. Vernon, and he quotes 3s. 6d. to 4s. 6d. per foot, and 5s. per foot, as being the prices for the different classes of work in that building. Now, I say, if those are the prices for the Art Gallery, I want to know how Mr. Stuart can cut and fix much more costly stonework like that in the Nurses' Home, for 3s. 9½d.

17162. I also wish to direct the Board's attention to a statement that I must take exception to on behalf of myself, and on behalf of the Stonemasons' Union. The statement has been made that the higher class man, if he works in conjunction with the indifferent man, necessarily sheds all his morality. Now, I repudiate that as being a fact. Every day in our lives we are working with men who are not quite so efficient, perhaps, as some of us may be, and in other cases we are working with men who are more efficient than we are, and I have failed to observe a tendency of that character. It is an implication that the man who is capable of doing more than his fellow comes down to the level of the least competent man. As I said before, Mr. President and Members of the Board, I, as a man who has

worked

worked continuously alongside these men, deny emphatically that there is any foundation for that statement. Every day in my life there are men working round me, men of varying capacities, and the mere fact that one man is not able to do so much work, or the mere fact of one man taking advantage of a foreman's back being turned, or his employer's back being turned, has no effect, as a general rule, on the other men. That is my own practical experience. I know, speaking from an individual point of view, it has no effect at all on me as to how much work the man who is next to me does. We never know, as a rule, whether the man next to us is being paid the same wage as we are. That is a thing which we generally keep to ourselves. It is not known, generally, whether there is a man working for less wages or not. The Contractors as a rule, paid us all the same money; it is only when competition is exceptionally keen that they take an advantage and they are not responsible for it. They are, like us all, but the creatures of circumstances. If there is one man who takes advantage of the times and trades on the necessities of the workmen, of course the other men who come into competition have to act just the same; but, as a rule, we find that the employer pays stonemasons the current Union rate, and if a man is not capable he discharges him. We find that that is the rule. But when times are exceptionally bad men offer themselves for less than the current rate, which is to be expected. I have not worked much for the State, but when I did for a few months I did not notice any difference between the output for the State and the output for the contractor. There was no real difference, and there was no attempt then to slow down to the least competent, or the laziest man in the group. I say, that is a charge that I, for one, could not allow to go unchallenged. It is a reflection upon the foreman if such has happened, because a man would not be there a week before the foreman would know exactly his capacity. A foreman gets to know the capacity of a man in a very short space of time, and I do not think there is any ground for such a statement to be made—in fact, it is not borne out in the evidence. Mr. Ryce's evidence is dead against it; he did, in one of his answers, admit that there had been a slowing down; he admitted that in an off-hand kind of way; but I do not believe it; knowing a large number of those men, having worked with them, known them for years, I don't believe that they slowed down to the level of the least competent.

17163. Mr. COOK: What statement are you referring to?

17164. Mr. THOMSON: The opening statement at the bottom of page 8.

17165. Mr. VERNON: "Whether or not there is an inclination to reduce individual effort from the above cause is a question difficult to answer."

17166. Mr. GRANT: But Mr. Ryce answers that on page 410, Q. 4167.

17167. Mr. THOMSON: I want further to direct your attention to page 9, Q. 20. There is an answer there in reply to Mr. Mant——[*Interrupted.*]

17168. Mr. VERNON: That statement about the men slowing down is hardly borne out.

17169. Mr. COOK: Mr. Ryce said some of them slowed down.

17170. Mr. THOMSON: To make a general statement that all the competent men slowed down is not borne out by fact. On page 9, Q. 20, Mr. Mant asked Mr. Vernon, "Can you give any instance where that system has in any way interfered with the work?" and Mr. Vernon replied, "I would rather leave that to my foreman. I would not attempt to take individual cases, but in my opinion the general result is that the control of the men is taken out of the hands of the foreman. As I said in my report, there is no incentive on the one hand to excel, and on the other no fear of dismissal, and I put that down as the cause of what I consider an excess in cost." Now, as a matter of fact, there is no evidence to bear out that statement that there is no fear of dismissal.

17171. Mr. VERNON: No incentive to excel.

17172. Mr. THOMSON: There is no incentive to excel other than this: if you are one of the most competent men on the work you are likely, if the foreman understands his business, to be there to the last. That is all the incentive I have found in my career as a stonemason. You are kept there because you are the cheapest man that can be got; that is to say, your output is a little larger than that of the others. Of course that is qualified by compatibility of temperament. Likes and dislikes enter, but as a rule the man who understands his business, and conducts his business on commercial principles—and those are the principles under which day labour should be conducted—retains the men who can give the best return for their money. Now they had full and ample power to discharge any man they liked. There was no power I know of to prevent the foreman discharging any man. His own evidence bears that out. In answer to questions, when under cross-examination, Mr. Ryce time and again pointed out that he could discharge any man there, and there is only one case where Ministerial influence stepped in and sent a stonemason back; but we are opposed to Ministerial and all forms of influence. We demanded that power should be vested in the man who is responsible to the head of the Department, and then when he fails to exercise his power it is the duty of the head of the Department to deal with him. We resent any interference with his power to discharge men if they are unsuitable or incapable of doing the work that is allotted to them.

17173. I want to say one or two words with regard to plant. I do not think the Department has quite treated us fairly during this Inquiry in loading up the cost of the stone with 5½d. for haulage and the cost of the plant in the manner in which they have. Now, I look on plant in this way: if a man goes into business as a contractor, and Mr. Vernon in this case is the contractor, he sinks so much of his capital, if he has it, in plant. He would not, if he were a shrewd business man, expect the first contract that he took to clear off his initial investment in plant, that is to say, he would only set apart a portion of his profit to meet the cost of plant. The Department may be able to dispose of the whole of those cranes they have at the Prince Alfred Hospital, and the gantries they have at the other buildings, for little less than they cost the Department; in fact, if they meet with a fair market they may be able to get the whole of the initial cost back again, less the cost of erecting them. A crane of that kind, if it was new when erected, may be more valuable at the end of twelve months' use than it was when originally bought, because then it would be in proper working order. Mr. Vernon, on page 11, Q. 28, was asked by Mr. Barling: "In comparing the prices, you mentioned contractors' prices, and those charges, I presume, have been included in them?" And Mr. Vernon replied, "Quite so. Take Mr. Howie's case, for instance, he had to find one, if not more, steam cranes within his price. I don't include those charges within this cost at all." Now, Mr. Howie has never had to find steam cranes within his price at all. Mr. Howie would more than likely have those cranes ready. They are part of his working capital, and all he provides for when he takes a contract is for renewals, part or whole

because

because a part has been consumed in constructing the building, and that, of course, must come out of his profits if he means to keep his business on a sound commercial footing. Therefore, I think the Department has loaded the whole building. What proportion I do not know. I know from my own knowledge of these things, and from a theoretical knowledge and careful understanding of commercial transactions, that is how business men deal with their plant. I do not think it is fair to load us with the cost of plant in the manner in which we have been loaded.

17174. I want to say a word with regard to Lauderdale. Lauderdale's case has figured large during this Inquiry. I do not think it is a wise regulation that prevents the gravitation of the very best men to State employment. If the State is going to compete in open market they should make it easy for the very best men in the State to gravitate to State employment. They should put up no barrier to prevent men who want to reach State employment. Of course, this regulation has been broken, like a great many other regulations—I think a man is justified in breaking an unwise regulation at any time. In my opinion it was a most unwise regulation. If the Department expects to compete with outside prices then they should put no regulations in the way to prevent men leaving other employment. This regulation stood in the way of capable men, perhaps, reaching State employment, who otherwise might have reached it. Of course, Ministerial policy may have kept it there, but notwithstanding that it was detrimental to the Day-labour System. I question whether it was wise for even our Union to interfere in the case of Lauderdale, or any other man who is discharged by the Department, but we looked at it from this point of view, that many other men had got there just as Lauderdale got there, only their employers did not report them, and many more of them had got there through leaving their employment for a day or two and stating to the State Labour Board that they were unemployed. We know that as a fact, and we thought it was very hard that this man should be singled out while all the others escaped. That was the reason for us interfering. I think it was most unwise on the part of the Minister to send a note to the foreman instructing him to reinstate him. I think those orders should go through the head of the Department. That appears to me to be the worst aspect of Ministerial influence, that he should send it direct to the subordinate officer instead of dealing directly through the head of the Department. The same applies in another case. On page 28 a peremptory note was sent by the Minister to Mr. Ryce. It reads: "Give the bearer employment as a stonemason." That is a most peremptory note, and the worst feature of it is that the bearer had been discharged a fortnight before when they were discharging hands. I say that a note of that character should have gone through the head of the Department. That seems to me to be a kind of interference that tends, at least, to reduce the status of the foreman. If there is anything that will reduce his status that will do it. Now, I am glad to say there are no instances of that character, as far as the stonemasons are concerned, on the present building. I believe there has only been one man engaged by Ministerial instruction.

17175. Mr. Vernon, on page 58, Q. 439, was asked by Mr. Grant, "What is the quality of the workmanship on the Prince Alfred Hospital stonework?" and he replied, "First-class." Now, I have no hesitation in saying also that it is first-class, as I said the last day, and if it is first-class, not only the part that catches the eye, but all round, then I say that has to be paid for, and that is the real root of what the Department calls excessive cost. The bottom portion of that, which has been constructed with Purgatory stone, I have no hesitation in saying, if we could get really down to the exact figure, must have cost considerably more than the 1s. 1d. over the Waverley. That portion of the stonework is down right against the eye, and I have looked at it very carefully, and there are no marks whatever. The rubbing of it alone must have cost nearly as much as some of the buildings have done to both cut and rub them. I have made inquiries at Pyrmont shed—where they cut Purgatory stone, which is not rubbed, but only chiselled—as to the cost, and I say to cut that stone in the thorough manner in which it has been done on the lower portion of that building must have cost considerably more than 1s. 1d. per cubic foot over the cost to cut Waverley stone of a like character.

17176. I want to say further, Mr. President, that there has been no evidence given at all during the course of this Inquiry to bear out the statement that the Department had lost control. Mr. Ryce's evidence—and he is most emphatic—is against the statement that he had lost control. In answer to a number of questions, put by Mr. Grant, he emphatically stated that he had absolute and complete control, that he could discharge any man, and, further, there was no evidence furnished that there was any insubordination. Mr. Ryce, on page 279, Q. 2669, was asked by Mr. Grant—"Has any mason refused to carry out your instructions at any time?"—and the answer was emphatic enough, it was "No." So that as far as dismissing men was concerned the foreman had absolute power to dismiss any man. As far as control was concerned, he had absolute control; and as far as the men obeying and carrying out to the letter the instructions given by him, there is no proof whatever that any man refused to do it.

17177. Now, with regard to Cox's case; it has been over and over again put forward as one of insubordination. Now, I happen to know Mr. Cox very well. I say he is, and the departmental officers agree with me, a competent stonemason. He is inclined, at times, to be somewhat aggressive, I admit; but, on the whole, there was no evidence furnished that his example had any effect upon the other men. During his working hours I have found him to attend to his work. He had little or nothing to say, even when working outside for a private contractor, during working hours. He was a conscientious and honest workman. I do not know the reason why he did not get along with Mr. Ryce, but I say his conduct in calling meetings during working hours is not at all a desirable thing, and not one I would try to condone. No man has a right to come on to any building which is being carried out by day labour under the officers of the Department, or on to any private work carried out by a contractor, and hold public meetings, without getting at least the permission of the contractor or the officer in charge. Of course, those meetings were held during the dinner-hour in the men's own time; but, notwitstanding that, no man has a right to go there and hold public meetings in connection with a picnic or any other question without having the sanction of the officer in charge. But, notwithstanding all that has been said, no evidence has been furnished to the Board to prove that it had any detrimental effect on the conduct of the work.

17178. When the informal evidence was furnished at the beginning of this Inquiry, a statement was made by Mr. Vernon that when he visited the shed at the Fisher Library, in conjunction with the Under Secretary for Public Works and Mr. Cook, Mr. Ryce informed him that since the statement had been furnished to the Minister and to the Stonemasons' Society as to the cost of the work the men had been working better. Now, that statement proves that the stone that was cut after that date was of, at least,

least, a more costly character, because, as I have pointed out to the Board, it has neither increased nor fallen in price. It has remained stationary. That bears out my contention that the bulk of the cheap stone, the stone that would have enabled the Department to have kept the cost considerably lower than 5s. 5d., was executed for the most part in Purgatory stone. It is, as I said in the opening remarks I made to-day, the cheapest stone in the building. It has no projection, and a very large amount of it has only one face, and a considerable portion of it is in 10 in., 12 in., and higher courses.

17179. The employment of unsuitable men has had very little to do with the cost. It has been given in evidence that the total amount of money paid to the unsuitable men, who had been discharged, was something like £38 up to the 5th May, which would be less than ½d. per foot on the cost, even if they did no work at all. Viewing it from that point, the cost is not attributable to those men. I say the so-called excessive cost is due to this fact: that the Department has never in the past executed a building that had such a large proportion of small stones, and such a large proportion of stones with two, three, and four faces, and in some cases worked on top. With all due respect to the gentlemen who have given evidence here, they have not, as far as my knowledge goes, tendered for much of that class of work, and, as I said in my own evidence, if you take and cut off the back of any stone 2 in. you make a radical alteration in the cost per cubic foot.

17180. Then, in the estimate which Messrs. Loveridge, Stuart, and Pringle were kind enough to furnish to the Board, I notice that the impost caps, which have four faces, were estimated to be worth more than the three-faced work. Now, that was to my mind proof that they had not carefully gone into the matter, because the impost caps with only three sides moulded are more costly to cut than the ones with four sides moulded, because they have less cubical content, which makes a considerable difference in the cost per cubic foot. Small cubical content alters entirely the cost per cubic foot.

17181. I do not wish, Mr. President, to elabour it much further; but I say, taking the whole of the evidence, there has been no proof adduced to convince me that the men who were capable, the most capable men, slowed down to the level of the least capable men. If they had, then I say, emphatically, that it was the duty of the foreman to have quietly discharged them, and if he believed there was a single man loafing there he ought to have done his duty to his employers—the people of this State.

17182. I want to say, in conclusion, on behalf of both myself and Mr. Grant, and also speaking for Mr. Dumbrell, who was here for a time, that we, as representatives of the Stonemasons' Society—and speaking for them as a body—are strongly opposed to anything in the shape of political interference. We are strongly opposed to any interference whatever from outside sources. We say that the whole power should be vested in the responsible officer; and we only uphold the Rotation System because it enables every member of our Society, if he is capable, to get an opportunity to work for the State, and we hold that that system, if the foreman does his duty, will not materially increase the cost of the building; because, as I put it yesterday, if you take any fifty men out of the ranks of our Society they will do in a day or a week just as much as any other fifty. No contractor deals with exceptional men. I say the average output of any fifty will equal the average output of another fifty. Of course, there is an exception to that which would favour the selection system, and that is if, through some dearth of employment, the whole of the members of the Society were idle, then, if you selected the best fifty, you would get a somewhat better return; but in normal times, I say the Rotation System will not function injuriously to the Day-labour System.

17183. During the course of this inquiry Mr. Ryce admitted that he had no idea when he was making up his estimate of the excessive cost for cartage, hauling, and fixing. He evidently made it up without having any knowledge of the details. As I said yesterday, it would have been more advantageous, and would have facilitated this inquiry, if we had had that list reorganised, if we had had detailed quantities for the existing design, and had it all repriced, and a new average struck.

17184. Now, when Mr. Ryce admits—and he did admit it in his evidence—that the men slowed down—when he admits that, he censures himself. Of course, a man may admit that without thinking, but I say when he makes a statement of that sort he practically censures himself, because he is in control of the men. That is the position. If he were in the employ of a contractor and he admitted such a thing we all know what the consequence would be.

17185. Now, I have had nothing to say about the shed. The question of the shed has come up several times during the course of this Inquiry, and it has been described by Mr. Grant as a coffin. I want to say this with regard to the shed, that if in the future the Government carries out day-labour work, and Mr. Vernon happens to be in charge, I would suggest to him to put a stoop on the shed 8 feet or 10 feet from the ground, so as to permit a free flow of air. There should be a stoop to prevent the rain blowing in, and permit a free flow of air throughout the shed. While it may appear to be all right to the man who is not accustomed to working in a shed, I can assure you it is very much more pleasant and healthy to work outside. The shed they have now at Pyrmont has not been constructed with a view to the health of the stonemasons. It is possible to erect a shed—and it would not be costly—which would be healthful to the men who worked in it, and would tend to prolong their existence, because most of us, after we have been ten, twenty and thirty years cutting stone, even those of us who are resistants, who can withstand the effect of stone-dust—because some of us are resistants and some of us are non-resistants—begin, sooner or later to feel it. I think, on the whole, Mr. Grant was justified in describing it as a coffin. I visited it on a wet day, and if you had seen it as I saw it, jammed full of men, I can assure you it was a coffin right enough. There was not a breath of air, it was all closed in, and the dust resembled clouds of smoke.

17186. Mr. President, and Members of the Board, we say candidly as representatives of the Stonemasons' Society that we have met with the most courteous treatment from you as a Board, and from all the other gentlemen connected with the Inquiry. We are perfectly satisfied with the Inquiry, we have got all we asked, and we are convinced that we will get the fairest treatment at the hands of the Board. To us, personally, it matters but little whether it is day labour or contract, but we want to say here—and I speak on behalf of Mr. Grant as well—that the State to-day, under the Day-labour System—I am not prepared to say it gets an article as cheap as it gets from the contractor, but it gets a superior article, that is, it gets an article that is thorough all round. I do not want to cast any reflection on the contractors, but I want to say again, under the present competitive conditions where the State is compelled, owing to various reasons, political and other, to accept the lowest tender, it never gets from the contractor an article equal to what it is getting now. That is our matured opinions; and we say further, that given an efficient foreman, a capable man who understands his business, and the entire absence of political

interference

interference, there is no reason as far as we can see why the State should not be able to produce an article equally as good and, commercially, on a par with that provided by the contractor. In all large industries to-day the whole of the management rest upon the hired man. Personality has almost, if not entirely, disappeared. The Companies employ managers and superintendents, who are not even shareholders, and those industries are carried on satisfactorily, from a monetary point of view; they are carried on economically and efficiently, and, I say, given an absence of interference by politicians, who for the most part, let me say, are amateurs—amateurs even in politics some of them—there is no reason as far as we can see, why the State should not carry out those works as economically as they can be done by contract. Of course, it is not my province, or the province of my co-delegate, to suggest any condition at all, but we say emphatically that we do not think it is wise to place trained professional officers, architects, of the Department in the position of a contractor. That is our opinion. As I say, it is not our province to suggest those things, but we believe, given the conditions that I have laid down, there is no reason, Mr. President and Members of the Board, why day-labour works should not be carried out as economically, and, from a commercial point of view, as cheaply as they are done by contract.

17187. Mr. Barling: Both you and Mr. Grant have put the case very fairly before us from your point of view, Mr. Thomson; and we thank you for the concise manner in which you have put it.

17188. Mr. Grant: I omitted yesterday to thank the Board and all present for the generous and courteous manner in which we have been treated here, and I now wish to endorse what Mr. Thomson has said in regard to that this afternoon.

17189. Mr. Barling: Thank you.

Extract from Evidence taken at Meeting held 23rd October, 1903.

18439. Mr. Barling: Mr. Thomson had not the opportunity, like the rest of the speakers had of commenting upon the statements which have been made by Mr. W. S. Thompson, and it is only fair to him that he should have an opportunity of addressing the Board on that subject. I gather that Mr. Thomson is entirely at variance with the position taken up by that witness, and he wishes to put the views of the Society before the Board.

18440. Mr. Thomson: Mr. Chairman and Members of the Board, it is an experience I do not wish to meet with again, and on behalf of Mr. Grant, myself, and the Stonemasons' Union, I wish to say that we have never, at any time, taken up the attitude of that witness, and I do not think we ever will take up such an attitude; but it seems to me to be inseparable from what we have heard called here "a free hand," which, boiled down, spells political interference. Mr. Grant and myself believe that State enterprise to be successful—whether it be State enterprise in the carrying out of public works without the intervention of the contractor, or State enterprise of a reproductive character,—the administration must be clean, I mean by clean administration, that there must be an absence of political and any other kind of interference. The officer placed in charge of the particular enterprise should have absolute control. He should be held responsible for the efficient carrying out of the particular work. There can be no efficiency where political and other influences interfere with control; that is our attitude. We say, notwithstanding all that may be said against the Rotation System, taking it all through, it is the best system yet devised to combat political and other influences. Of course, it is not for me to suggest any alteration of the existing system, but to us it appears necessary that steps should be immediately taken to place State enterprise of every kind on a footing whereby it would be economically supervised. Day labour, so far, is a thing which has grown up from small beginnings; it has been carried out in a haphazard way; no principle has been laid down for its control. I am not casting any reflection on Mr. Vernon or his officers, what I mean is there has been no system laid down by the Department as to how it should be carried out, and we think some statutory or other kind of authority should be devised to control State enterprise of this kind.

Appendix IV.

Extract from Evidence taken at Meetings held on the 15th, 16th, 19th, and 20th October, 1903.—Address of Mr. W. L. Vernon, Government Architect.

17190. Mr. Vernon: Mr. Chairman and gentlemen of the Board, I have some difficulty in following the two previous speakers inasmuch as I am not so accustomed as they are, evidently, to state, and not only to state but to analyse, so clearly, the points which they wish to place before you. While the two speakers, Mr. Grant and Mr. Thomson, have confined themselves exclusively almost to the question of the principles of rotation and to the cost of the work, I have to traverse considerably wider grounds. I am an officer of a Department, and I have to defend my officers. I have to show that the Department has taken the utmost precaution in carrying out these works, and while Mr. Grant can, after this inquiry is closed, go about his occupation elsewhere without another thought—though I do not think he will, because I think we have all learnt something—I may be called upon, immediately afterwards, to go through precisely the same experience. Assuming that no alterations are made in the conditions under which the Department carries out the work, I may have the same work to do, and I may even run across Mr. Grant interviewing the Minister. So that my task is a considerable one, and therefore I would ask for the patience of the Board if I have to travel a little wider, in some respects, than the two gentlemen who have spoken.

17191. I am going to confine myself, of course, very closely to the evidence, and I shall be able perhaps, to quote more from the evidence than has been done by either of the two gentlemen who have previously spoken, although, there is no doubt, the previous remarks made are fairly and closely within what has taken place before the Board.

Initiation of Inquiry.

17192. The initiation of this inquiry was a voluntary report by myself to the Minister on the 13th February, pointing out the disappointment which I had experienced in the results of the work at the Prince Alfred Hospital, particularly with regard to the stonework, and, with the knowledge I then had of the work—it was only a partial knowledge, experience has since given me even more information—I suggested certain causes for it. So far as I knew we had observed all the regulations, and all I had to do was to make my report. I claim that we have made no mistakes or omissions of duty, and further that the officers who are working with me have been working wholly in the interests of the Department.

17193. Since the report of the 13th February the circumstances surrounding that job have very much changed. The control of the work has got more and more into the hands of irresponsible officers of societies and unions, and a corresponding decrease in the power of the officers naturally took place. We also had a rise in the wages in connection with the carters, certainly it is not a very large item, but it is one that Mr. Oakden drew attention to, and we also had a reduction in the hours of work on the building. I must confess that we had a tightening of the regulations in the Department; of course, it may not have anything to do with cutting the stone, but I claim I am perfectly right in pointing that out; I will not say it is one of the difficulties, because we do not acknowledge difficulties, but one instance of the circumstances which surrounded us during the progress of this work.

17194. Recently, as the returns show the cost has somewhat receded. Mr. Thomson gave you his reason, and I now give the Board as mine that it is because the Rotation System has really become, by a process of exhaustion, a selection system. I claim that that is the real reason why there has been a slight recession in the cost. As a whole, unfortunately, it has not gone back. It went up to a very high figure after this inquiry commenced, but it has gone back recently, and the average has remained within a few pence of where it was on the 13th February. I am, therefore, going to urge upon the Board that the expression of opinion I made on the 13th February has not, by any subsequent event, been practically altered.

Position of Officers.

17195. This inquiry is being held under the provisions of the 9th section of the Public Service Act, which bears, of course, very special reference to the officers; therefore, we officers are certainly very deeply interested parties to this inquiry, and we are on a very different footing to the members of the Society, because whatever may result from this inquiry must more or less tell upon the officers. On the other hand as regards the society represented here, if your decision is contrary to what has taken place in the past, there is no responsibility attached to them; they can go away as I said before and take up their occupation without any other thought. Then again, as regards the contractors who have been represented here, if it were shown that they have not carried out their works under contract as they should have done, as it was suggested—but I do not think it was really intended—the fault would not lie with the contractors, it would be upon the officers who are supposed to see that they did their work according to specification, and, therefore, of the three parties concerned, the officers are the most deeply interested.

17196. This inquiry has also covered to some small extent an investigation into Departmental methods, and particularly into the initiation of the Rotation System and how the different regulations have been gradually built up in the Department, and how the work has been controlled. I venture to urge that evidence has been given of a character which cannot be disputed, first of all, as to the evil effects of the control of works passing into the hands of irresponsible persons; secondly, the evil effects of political influence; thirdly, the excessive cost of the stonework in question; fourthly, its true commercial value from comparison with that in other similar buildings; and lastly, the difficulties the officers have occasionally to meet with under the regulations in trying to economise time and money in the purchase of their material.

17197. The Stonemasons' Society has, outside the statements of Mr. Grant and Mr. Thomson, practically produced no evidence whatever as to the cost of the stone. It is an omission which I have been somewhat amazed at. Certainly Mr. Dumbrell came and gave evidence, but it was of a very slight character, and the Board has before it absolutely nothing but the assertion of Mr. Thomson particularly. I must say we must all respect what he does say, because he speaks from practical knowledge, but still he is bound to bring before this Board corroborative evidence in support of his statement against what, I venture to urge, has been overwhelmingly brought on the other side.

17198. Now, I do not want to exhaust the Board. I want really to glance through the history of the works themselves, but I will put myself into the hands of the Board as to whether ——

17199. MR. BARLING: Take your own time, Mr. Vernon, the inquiry is very important and nothing should be omitted.

History of the Hospital Works.

17200. MR. VERNON: Thank you. This has been very amply referred to in evidence, and I would like, therefore, to give you my views for what they are worth. In October, 1901, sketch plans were submitted to the Public Works Committee for buildings estimated to cost £45,000. This estimate was necessarily based on scanty details, but at the inquiry before the Public Works Committee that estimate was corroborated by a considerable number of architects in the city, who, although they very freely criticised the details of the design itself, practically and absolutely were unanimous in stating that they thought £45,000, for what was evidently intended at that time was a fair and approximate estimate to place before the Committee. A Bill was then passed through Parliament authorising its erection at £45,000, plus 10 per cent., which would bring it up to £49,500, but it was subject to certain alterations and amendments of the design as were pointed out by the Committee. The plans were then, at the instance of the Hospital authorities, practically redesigned on the lines already approved, but studied in every detail and in the light of the more recent information that had been received from London, especially in connection with the Central London Hospital which is now approaching completion, and which is looked upon as the latest development of hospital construction in the world, and including twenty-four more beds than previously. A specification was then written, and at the instance of the Hospital authorities this included special and elaborate fittings and appliances not contemplated originally. Then came the controversy relative to contract and day-labour, about which the Board have been very fully informed. Tenders for one wing were invited, and there was no response from the contractors excepting the tender of Mr. Leahy. I consider the contractors lost an opportunity very favourable to themselves of carrying out the work more advantageously than the day-labour System, with its kindred Rotation System, would possibly accomplish. My own impression was that Mr. Syme, who conducted negotiations on the part of the contractors, took up an impossible attitude, that the Departmental proposals were fair and only such as would be absolutely necessary in this trial of systems, and that had the matter been in the hands of the gentlemen representing the Association at this inquiry a contest would assuredly have been held,

held, and a result possibly arrived at. Personally, I considered the Hospital authorities acted thoughtlessly, and without any guidance, in recommending a duel that would be so fraught with quarrels and strife within the borders of their own Hospital grounds. I can quite conceive the differences (if this had been carried out by the contractors) between the Association on the one side and the Department on the other, would have been interminable; that a combination of societies and unions on the other hand, in directions which we cannot foresee, would have shown themselves, and that in the eagerness of the contest either party would claim the other was taking some undue advantage, and as regards the officers, I venture, with the utmost respect, to say that they should never be called upon to take up positions thus rendered almost impossible. Therefore, I think, so far as the practical issue of the work is concerned, it was a very fortunate thing that a contest of that character was not carried out within the precincts of the Hospital grounds. I think it would have been fraught with very great trouble, worse than we have got into even now.

Day-labour operations decided upon

17201. The Minister then decided to carry out both wings by day-labour. The bill of quantities had been prepared; that is, the quantity surveyor we gave instructions to prepared the bill of quantities, and this was priced out, as will be seen in the evidence, first by Messrs. Elliott, Coates, and Ryce, then it passed through Mr. Cook's hands, and then, eventually, I scrutinised it myself, and the final amount of that bill of quantities came out at £35,960 per wing. The result was disappointing, and although I bore in mind the difference in detail, &c., wrought to the design subsequent to its passing the Public Works Committee, I took the same course as Mr. Cook did, and made some alterations in the rates of certain items, but, as it happened, none in the stonework. In no case did I alter the prices of the stonework. Then by arrangement an overhaul of the design in conjunction with Professor Anderson Stuart was made to bring the cost down, and the quantity surveyor was again called in, because I would not take any responsibility with regard to the quantities myself. It is not my business to do that; that is a matter for the quantity surveyor, and after the quantity surveyor was called in the revised estimate came out at £29,153 each wing. That is, we reduced it from £35,960 to £29,153. I want the particular attention of the Board drawn to what took place after that, because it has been asserted publicly that the Works Department commenced building operations on an estimate of £49,500 (which is the amount allowable under the Act), and they are now estimating the same work at £58,306, that is, £29,153 for each wing. In other words, although they began building operations on the estimate of £49,500, they now find they are going to cost £58,306, that is, between £9,000 and £10,000 more.

17202. It is quite clear that in the instructions of the Minister the excavation and foundations were pushed on for public reasons before the Minister had given a final decision as to how he would carry out the buildings, but no superstructure was commenced until I received the clearest possible instructions through the Under Secretary to proceed with these works by day-labour. The Under Secretary expressly states—it is already in evidence on page 6—that the sum of £58,306, that is the amount of the revised estimate, can only be considered under the day-labour system as an estimate. This is what the Under Secretary puts before you in his statement:—

> "After this revision of the plans, Mr. Vernon estimated that the work could not be carried out for less than £58,305, but as only £49,500 was available, and it was to a certain extent problematical what the ultimate cost would be, the Minister decided to proceed with the work, and at a later stage consider the question of the extra cost."

So that those instructions to myself entirely clear my Branch from blame for commencing the work at, apparently, £49,000, when we were told to commence on the revised estimate of £58,306, and that that amount, owing to it being decided to carry them out by day-labour, was to be considered an approximate estimate only. I want the Board to have that clearly before them, so that there shall not be any misapprehension as to the office beginning the work without knowing what they were doing.

17203. Mr. LOVERIDGE: Practically, there was an unauthorised expenditure of nearly £9,000?

17204. Mr. VERNON: Yes, quite so; and that has yet to go before the Works Committee. We made a start with the work about August, 1902, and the Board may recollect that I gave Mr. Cook some very explicit instructions when the work commenced. On page 206 of the evidence will be found a copy of my instructions to Mr. Cook as to how the work should be carried out, that he was to abide by the regulations of the Department, to follow all labour conditions, and to use his best energies to get the work done thoroughly, and he had certain officers given him to assist in this work. Contracts for Purgatory and Waverley stone were then entered into. I am not going to take up the time of the Board by entering into the merits and demerits of using Purgatory stone; but I was never more satisfied with the choice I made of Purgatory stone than I am at the present moment. It was, I am certain, the right stone to use, considering the nature of Sydney sandstone, and considering the importance of the building. Of course the Fisher Library is in the same category. I should not be doing justice to a permanent work unless I took the utmost precaution, and, after all, the stonemasons of Sydney know—Mr. Grant knows as well as I do, perhaps better—that the stone in Sydney is of a very soft character compared with the stone used in other parts of the world, and that elsewhere it would not be used under any consideration for foundation work, and the masons are prepared to work stone of a very different quality altogether, and they do so as a matter of course. I think, therefore, that the complaint as to having to use Purgatory stone is a very weak one indeed. There is no restriction as to its excess cost; there must be an excess cost; it was very reasonable and fair that there should be, and there was, which was subsequently ascertained.

17205. Now, I have come down to the time when I placed this statement before the Minister through the Under Secretary, viz., 13th February. I considered it my duty to place before the Minister the monetary result of the stonework up to date, and I gave an expression of opinion from the knowledge then at my disposal.

Initiation of Rotation System.

17206. On 13th January, 1902, the Rotation System was brought in, but it was brought in, as the Board of Inquiry knows, on a recommendation from the State Labour Board. On its first recommendation there was no condition as to percentage at all. Now the reason for that was this, and it has not come clearly before the Board during the whole of this inquiry:—There were a number of masons, known selected masons, prepared to go on with Government works, and their names were on lists in the offices of the different branches of the Department. The intention was that these lists should all be brought together under the State Labour Board, and that the rotation was to be from those; there was no question of percentage,

percentage, there was no question of putting the Rotation System under its subsequent experiences, but simply to use those men who had already been employed by the Government, and who had been tested. That was the first step in the Rotation System. Then, after that, in February of the same year, the attention of the Stonemason's Society became drawn to this particular system. It is quite true, as Mr. Grant told you, that the Society never initiated the Rotation System. That is perfectly true, but their attention was drawn to this Rotation System, and it seems to me they at once said, "Here is an opportunity for exercising powers which we have never experienced before, and now we have the chance we are not going to give it up." That led to the heads of the Departments appealing to the Minister for power to put men, after they were finished on one work, on to another, and the Minister gave them authority to use their discretion. The fact is they were not confined to the 25 per cent. then, but they were afterwards. In May, 1902, the officers were limited to select 25 per cent., and the State Labour Board and the Trades Hall between them 75 per cent. Then in September, owing to pressure which has been referred to here, the officers were reduced in their choice to 15 per cent., and the remaining 85 per cent. were chosen outside. In September, 1902, the Stonemasons' Society took steps, and had the whole of the control of the 85 per cent. of masons taken from the Trades Hall and the State Labour Board, and placed in their own hands. Shortly afterwards, or in fact almost at the same time as this was granted, a demand was made that the whole 100 per cent. of the masons should be put under the society, irrespective of the officers, and practically irrespective of the State Labour Board. Since then, owing to the state of things in force—I do not say it in any insulting way—the works have become practically relief works, because, as has been pointed out here, and over and over again by Mr. Grant, it is insisted upon that all masons, good, bad, and indifferent, should have their turn on Government works.

Official estimate of cost of stonework

17207. Now, I want to draw the Board's attention to the question of the cost of the stonework. I first of all wish to speak on the original estimate, then as to the ultimate cost, and then I want to say a few words as to the reason of the cost, and then I propose to refer to the evidence with regard to the Rotation System, which was one of the causes of that cost—the main cause.

17208. The original office estimate of 6s. 3d. has been generally accepted as an approximate standard, on the distinct understanding that it is the result of the individual pricing of each item according to its merits. It is simply the usual way of getting at a bulk result, and it is based on individual prices, both on the cubical contents of the stone, and on the labour on that stone. The Chairman, on page 647 of the evidence, made this remark, which we have all borne in mind, "Is 6s. 3d. a fair commercial price for that stone?" That is a proposition which, I take it, is a challenge to the Department by the Chairman. We had to prove whether that 6s. 3d. was a fair commercial price, or whether it was not. My contention is that we have proved it, because, in the first instance, we based those prices on our experience of contract works carried out by well-known contractors, and on buildings well-known. We also had the advantage, so far as an expert employed by the Victorian Government is concerned, of Mr. Marsden, who gave evidence that their system in pricing bills of quantities in Victoria is to use previous experience with regard to contracts actually carried out. When we did make those prices, and base them on work such as the Government Printing Office, Prince of Wales' Hotel, Redfern Court-house, Treasury Strong Room, Supreme Court, North Shore Hospital, and Board of Health Offices, I had to take the conditions which would guide any contractor at that time—I had to assume that the prices of stone, provision of plant, and the locality of workshops and labour conditions, were only such as a contractor would meet with; and it has been given in evidence by the Under Secretary for Works, Mr. Davis, that the officers have instructions in regard to day-labour work, to prepare specifications and designs just as though they were to invite tenders (see p. 1569 of the evidence); so it is perfectly clear we were to make our estimate on what we considered to be contractors' prices. There was nothing in the office at a higher rate than 6s. 3d., we had even had no experience of anything so high as 6s. 3d.

17209. Mr. THOMSON: Nothing so unique?

17210. Mr. VERNON: It may be. We had nothing to guide us as to price higher than 6s. 3d., and those were the conditions under which we priced it. Now, we brought before the Board evidence from contractors of the very highest standing in Sydney, who have carried out works for the Government, and carried them out well, whose word must be taken, and what is their opinion about the 6s. 3d.? Mr. Howie states he could do the work for 5s. 6d., and Mr. Howie is one of the most practical judges of stonework there is in Sydney, or in the State. He said, "I could do it for 5s. 6d." He said, "I would pay Union rate wages," and then he repeated himself later on, and said, "I would price the Hospital work at 5s., plus 10 per cent." Now, Mr. Pringle, who is present in this room, said, "I would not think of putting 6s. 3d. in a tender for the Hospital, but I would put less." Then you had Mr. Stuart, who said, "I consider 6s. 3d. too high," and he went on to say, "5s. to 5s. 6d. is all right as an estimate for the Hospital, but I would probably have to quote less in tendering." Then he said he looks at a job as a whole, and prices it for the whole job. Then Mr. Wall, who has carried out extensive works for the Government, and has carried them out extremely well, said, "I have no difficulty in estimating work of that description; I have never been able to get 6s. 3d. for work of a somewhat similar class." Then he goes on further to say that the cost would come out under 6s. 3d. Mr. Loveridge, the President of the Builders' Association, said he would be properly satisfied to take the Prince Alfred Hospital Pavilions at 6s. 3d., and it would pay at least, there being a very fair margin. He goes on to state that no tender at 6s. 3d. would be successful, and he further considers that the 6s. 3d. estimate is a fair covering one. Then, finally, there is Mr. McLeod, who says he is prepared to do the whole of the work at 5s. 6d. per foot, including contractor's profit, and he considers the Departmental estimate of 6s. 3d. a fair covering one. With that consensus of opinion from practical gentlemen I contend with the utmost confidence that the office estimate was perfectly justified, and that the office was taking a proper step in putting 6s. 3d. as a covering estimate upon that work at that time, and under the conditions required by the Under Secretary.

17211. Now, What does Mr. Grant say about that? First of all he denies that Elliott, Coates, and Ryce are fair and reasonable to work out prices. What does Mr. Grant know about Mr. Elliott or Mr. Coates? He has certainly seen Mr. Ryce here, and he is perfectly justified in forming an opinion of Mr. Ryce. He might say Mr. Ryce is quite unreasonable and unfair to work out prices, but what does he know about Elliott and Coates? That evidence cannot be taken at all. We claim that those two experienced men in the Public Service are well fitted to price it. I certainly did not bring them here, because I did not wish to prolong the evidence before the Board, but their experience is unquestionable, and yet Mr. Grant, who does not know them, says they are not fair and reasonable. That cannot

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be taken as evidence. Then Mr. Grant does not know the price of any building, and in that case I do not see how he can possibly express an opinion as to the 6s. 3d. Then he assumed, if you recollect, that all stone jobs carried out by contractors were carried out at a loss, and that is how he accounted for the contractors' prices which had been before this Board of Reference. Mr. Grant then promised to bring some instances of similar buildings costing over 6s. 3d. I recollect upon two or three occasions, if not more, urging that these should be placed before the Board, but they have not arrived yet, and I do not think they will ever arrive. Then Mr. Grant was asked if he would price a bill of quantities himself, and, if you recollect, he declined to do that. Mr. Stuart, who is a man of pretty good acumen, stated that he claimed that as a vital point as regards Mr. Grant's evidence, because, although he appeared to be able to express an opinion, he was not really game to go and price a bill of quantities. Now, Mr. Thomson also objected to price a bill of quantities. You see the two gentlemen who are here to maintain certain propositions were not prepared to take the practical point like everybody else has to do. The contractors have to do that, and the Department have to do it. They have to do their pricing in an ordinary commercial way and arrive at a decision, but neither of these gentlemen will attempt it at all, and Mr. Thomson gives absolutely no opinion one way or the other as to whether the 6s. 3d. was a fair or reasonable price. He would not say whether it was reasonable or not. The only little light or corroborative evidence which Mr. Thomson is good enough to give us is with regard to Mr. Howie. When Mr. Howie gave his opinion as to the 6s. 3d., it was clear and emphatic. Mr. Thomson said he looked upon Mr. Howie as a man of valuable information, who could throw considerable light upon this question; therefore, I think Mr. Thomson has really confirmed Mr. Howie's estimate of 6s. 3d. Then, later on, he says he does not question the 6s. 3d., so that practically the 6s. 3d. must be established as a proper and a fair amount for the Department to fix. The Chairman told us that if Mr. Grant and Mr. Thomson refused to price a bill of quantities we could draw our own deduction; I have drawn those deductions, and I have placed them now before the Board. Mr. Thomson admitted elsewhere in the evidence that the prices were exceptionally good for wide beds, but too low a price otherwise (p. 788). Then came the question of the revision of the bill of quantities, and Mr. Pate, you may recollect, was called in to report as to what effect a reduction of those quantities would have on the average amount of 6s. 3d., and he reported that what was taken out came to about 6s. 1d., and what was left in, to about 6s. 5½d. I must admit that the 6s. 5d. was, to some extent, lost sight of during the many meetings of the Inquiry, and the 6s. 3d. generally taken as the standard. In confirmation of my claim that the 6s. 3d. was a proper and fair price I would refer to the Under Secretary's evidence in which he states he is quite satisfied to accept my estimate. I trust, therefore, I have established that point before the Board.

Comparison with cost of contract works.

17212. Reference has been made to the cost of stone work in some of the important contracts carried out for the Department by contractors. We have been able to put before the Board absolute evidence in the shape of documents as to these prices. Mr Allman, of the Department, produced a certain number in which the schedule rates were clearly set forth as to the work that had been done; then, in other cases, we called upon experienced clerks in the office to work out the average price on the bills of quantities in the same way as the Prince Alfred Hospital had been done, and we came to this result:—

Government House chimneys, 4s. 9d.	Sworn to by	Mr. Pringle.
University turrets 5s. 1d.	do	Mr. Barnett.
Prince of Wales Hotel, 3s. 7d.	do	Mr. Allman.
Redfern Court House, 3s. 7d.	do	Mr. Allman.
Treasury Strong Room, 4s. 2d.	do	Mr. Allman.
Supreme Court, 5s. 9d.	do	Mr. Pringle.
North Shore Hospital, 4s. 6d.	do	Mr. Moir.
Board of Health offices, 2s. 6d.	do	Mr. Allman.
Art Gallery, 3s. 9d.	do	Mr. Allman.

We also brought the printed evidence given before a Select Committee of the House with regard to the Government Printing Office, and there the Select Committee called upon four different experts to price a bill of quantities, which had been prepared at their instigation, and one expert put 3s., another 4s., another 3s. 4d., and the fourth 4s. 4d.—average 3s. 10d. I can also make reference to the recently accepted tender for the Police Offices, which Mr. Thomson has just referred to in which the cost of the stone averages about 4s. 3d.

17213. Mr. Loveridge: Less than that, 3d. 3d.

Mr. Marsdens' comparisons.

17214. Mr. Vernon: The difficulty is this: it contains a considerable amount of trachyte. The lowest tender came to 2s. 10d., and the next tender, which was accepted, came to a little over 3s., but of course that does not include fixing. I again called upon the contractors as witnesses to tell us, in their opinion, the difference in the nature of the designs and in the dimensions and general work of the stonework. Now, Mr. Wall, who carried out one of the large contracts at Kenmore, compared Kenmore Hospital with the Prince Alfred Hospital, and after making all due allowances, the stone (Bundanoon) is of a somewhat softer character, and he had to pay the fares of the masons to go to Kenmore—he said it would come out at considerably under 6s. 3d. Now, Mr. Marsden, who, you recollect, came to advise the Department, said "I see no difference between the work at the Prince Alfred Hospital and general work in brick and stone, therefore no difference, only usual prices." Then he went on to say, "I consider the work at the Prince Alfred Hospital costing 50 per cent. more than the Art Gallery is out of all character." He considers it extraordinary that, after adding 100 per cent. to the cost of the Board of Health Offices, it is still below the Prince Alfred Hospital estimate, and hundreds per cent. below the actual cost. His opinion is that the hospital should probably cost 15 per cent. to 20 per cent. more than the Prince of Wales Hotel. He considers the contractor's quotation of 6s. 3d., less 20 per cent. for the Harbour Trust Offices, a fair one. He considers the turrets at the University, at 5s. 1d., very low compared with the 6s. 3d. at the Prince Alfred Hospital. He considers the work at the G.P.O. extraordinarily cheap, as compared with the Hospital. He states, in his opinion, the cost of the Hospital should not exceed that of the Custom House. He says the practice in Victoria is to compare the cost with that of other buildings; and then he says it is his distinct opinion that the comparison of stonework in a number of buildings gives an average cost, and can be applied to the Prince Alfred Hospital. Then Mr. Howie gave as his opinion that the stone in the Prince Alfred Hospital is 25 per cent. more elaborate than that in the Harbour Trust Offices. He said he would be glad to get 5s. for the

Harbour

Harbour Trust, including the plant. He said that there is nothing elaborate about the Prince Alfred Hospital Pavilion, and no difficulty in estimating its value, and that he can compare it with buildings he has erected. Then he quotes how he makes up his estimate: 4d. for beds, 1s. 5d. for face work, and 5s. for moulding, and he says if you üse that as a key you can price any stonework you like. He would carry out the Prince Alfred Hospital work at 5s., plus 10 per cent. Then, in reply to the Chairman, he said it is not fair to take the cost of any particular stone, but the average right through. Now, Mr. Pringle, in making his comparison between buildings already erected and the Hospital, compares the contract work at the Supreme Court as, roughly, equal to the Prince Alfred Hospital, and he says if there are more stones at the Prince Alfred Hospital there is more moulding at the Court. He further on says that the Court-house is a little more expensive to work, and would not think of putting 6s. 3d. in a tender for the Prince Alfred Hospital, but would put less. Mr. Loveridge then gives a comparison—and it is a very telling one—with the New Bank of Australasia, which is built of trachyte, a stone altogether out of the category of Sydney sandstone. He says that he is not getting for his stonework at the Bank of Australasia as much as it is costing this department for the stonework at the Prince Alfred Hospital, and, in comparing buildings, he fails to see any reason why the Hospital stones, although small, should have cost so much, making allowance for the quality of the work.

17215. Mr. Thomson: He means he was not getting 9s. 8d.

17216. Mr. Vernon: Yes.

17217. Mr. Loveridge: I would like to say something in regard to that. There were some office charges, establishment and so on, which brought the price up to 10s. 11d., and I altered it when revising my evidence.

Comparisons with previous Day-labour works.

17218. Mr. Vernon: I have made comparisons with contract works carried out, and I am now going to make a comparison with day labour works carried out by what I will call the clean day labour system, not by what Mr. Grant says the rotation system. I must draw the Board's attention to the fact that a special audit has been made, not by my branch of the Department only, but by a representative of the accountant's branch, Mr. Dalton, a man who has the confidence of all, and I think who acted extremely carefully in getting these results. The results were as follows:—

	s.	d.
Chief Secretary's Office	6	5·9
Government Printing Office	6	5·6
Royal Mint	7	4·72
Custom House	6	4·42
General Post Office	4	8·81
Art Gallery Portico	6	11·76

With regard to the Mint, I may say that the Office was very dissatisfied with the result, great exception at the time being taken as to its cost. It was a comparatively small work, and was carried out under difficult circumstances. I do not know any other reasons, but it certainly cost too much. In some of those cases, in fact nearly all of them, those results include the cost of taking down, re-cutting in some cases, and re-setting heavy stonework; so that the comparison between the cost of the Prince Alfred Hospital and those buildings is, I am afraid, very damaging to the former.

The Nurses' Home.

17219. The final, and I suppose the most telling comparison of all, and one I have no doubt you will take into very serious consideration, is with the Nurses' Home Building. As it happens, it was built by Mr. Stuart, who tells you that it cost him 3s. 9½d. Great care has been taken to place this matter clearly before the Board, dimensions have been taken of the stone, and comparative diagrams have been made which singularly show how the sizes of the stone in that building run comparatively on the same lines as those in the pavilions. They are almost identical in character as to size. Mr. Loveridge, in speaking of the Nurses' Home, considers the difference between 3s. 9½d. and 6s. 3d. more than covers the difference in size of the stone. He has a decided opinion that the work at the Prince Alfred Hospital is more in accordance with the Nurses' Home than the Art Gallery. Mr. Marsden was taken to see the Nurses' Home, and he said "The comparison with the Nurses' Home generally appears to be equal—external work on both buildings about on a par." The cost of stone on the Nurses' Home I consider a fair one—quite safe for the Hospital. Now, Mr. Thomson and Mr. Grant are very, very discreet about the matter, they have said very little about it at all. Of course it is a fact which came unexpectedly into this inquiry, and it is one which they have had very great difficulty—

17220. Mr. Thomson: We are perfectly helpless.

17221. Mr. Vernon: There is the evidence, and you cannot get round it.

17222. Mr. Thomson: The only man who can prove that is the man who pays the men.

17223. Mr. Vernon: Mr. Grant is good enough to say that he does not deny the accuracy of the comparative cost of other buildings, and he admits in another case 4s. is not out of the way for Bull's Buildings. Bull's Buildings have been brought before the Board. Mr. Oakden went to see them, and he saw the ground floor, which is built up with pretty heavy stuff; there are indications that the work above that is brick and stone, the stone evidently of a very light character, but I do not propose to bring that building into the case at all. Mr. Thomson compared the price of the Prince Alfred Hospital with the price of certain stone which he himself worked at the Crystal Hotel. It was not quite clear to me what the deduction should be from that, but I came to the conclusion, whether I was right or wrong, that Mr. Thomson had been carrying out that work for a contractor, and he had done it at an extremely moderate price, and I want to point out to the Board that the conditions under which he did that work were altogether different to those under which the Hospital were built. He was working for a contractor who respected him, who valued his services, and the conditions were altogether different; and, if Mr. Thomson worked that stone at 1s. 11½d., surely that is a very telling comparison against the cost of the stone which we had to pay at the Hospital. I claim, therefore, I have established before the Board that the comparison of this Hospital with other buildings, first those put up by Contract, and, secondly, those put up by Day Labour, under different conditions to those existing now, shows that the present cost is entirely out of place.

17224. Mr. Barling: We will now adjourn till 2·15 to-morrow, when Mr. Vernon will continue his address.

(The investigation was then adjourned till 2·15 p.m. on Friday, 16th instant).

17597. MR. VERNON: Now, the next step in the matter is really the actual cost of the work. On the 13th of February, I had to report that under all heads that cost amounted, including a percentage put on, to 9s. 8d. per foot cube, reckoning as Waverley stone. For the present purpose, I will leave out Purgatory, because comparisons have been made all the way through with the Waverley, and I will keep myself to Waverley. The return came out at 9s. 8d., and it is no doubt very instructive to see the gradations of costs under the different headings. You have before you the cost of the work under Contract, the cost of work under Day-labour without these conditions, and then the cost of work at the Prince Alfred Hospital under the existing conditions. I have taken the average of the nine sworn costs of contract work of the Department, and it comes out at 4s. 2d. per foot cube. I have taken the six sworn calculations on the Day-labour works for the Department, and they come out at 6s. 3d.; and I now take the Prince Alfred Hospital, which comes to 9s. 8d., showing an increase, which I must tell you included, of course, the taking down and resetting, of 50 per cent. on the Day-labour under former conditions. The subsequent returns, and taking these up to the latest date, namely, the 12th of October, which is the latest date we have, are practically the same as they were then, excepting that these reduced to about 8s., plus about 15 per cent., instead of about 8s. 3d., plus 15 per cent. Now, Mr. Oakden gave you, in his own opinion, in his answers to how that amount was made up, details as follows,—the stone at 1s. 4d., the cuttings at 6s. 6d., the sharps at 3½d., the cartage at 2¾d., and the crane haulage at 5½d., and the setting at 9¾d., and he was disposed, in his own opinion, to fix the excess cutting cost at 1s. 8d. When I had an opportunity of asking him to reduce some of his answers, he modified these to a certain extent. For instance, he put the sharps down to 2½d., and, therefore, put another penny on to the 1s. 8d. With reference to the cartage, which was 2¾d., I omitted to point out to him this was caused through a rise in wages since the commencement and since the estimate. Therefore, I must claim, although Mr. Oakden did not know it, a certain sum is accountable in that amount, and also in the crane haulage, you have had just before. Of course, I must not inquire what the opinions of the Board are with regard to Walter Thompson,—it has seen the trouble and expense which a foreman has in dealing with some men on the scaffold, and, therefore, I do not think that Mr. Oakden could possibly question the cost which we found necessary to put down. We had to calculate the cost of the setting, so far as we were able. The Board must bear in mind that the cost of the cranes, the working of the cranes, at that period was confined exclusively almost to brickwork, stonework, and the steel girders, and so, it would be necessary to put a very fair proportion of the cost of the cranage on to the stone, because it really belonged to it. Then, Mr. Oaken rather questioned the 15 per cent. I understood him to base his calculations on the percentage which he put upon the whole £60,000 on the buildings, and claimed that we should only take a relative portion of that for the cost of the 15 per cent. upon the stone. But I did not follow him in that respect, and I wish to point out to the Board, and I daresay Mr. Loveridge will bear me out, that the cost of the plant, viz., the four gantries, the steel cranes, and the scaffold plant, and the sheds with the travellers, necessarily falls to a greater extent upon the stonework, the brickwork, and the girders, than upon any other trades at all, and, therefore, the percentage cost of these works must be charged to a greater extent upon those trades than upon any others. I could show that more clearly by putting it this way: Supposing the Department had let by contract the erection of that building without the finishing trades, that is, the joinery work, the plastering work, and the painting, the contractor would still have to put up the gantries, he would still have to find the shed, so that it is fair and proper to charge the higher relative proportion and the cost of this against the stone. Actual cost of the stone-work.

17598. MR. THOMSON: You mean the gantries?

17599. MR. LOVERIDGE: In that case, they would have to bear the whole of the cost.

17600. MR. BARLING: I suppose the gantry would still be of use for raising purposes, such as the joists and girders?

17601. MR. LOVERIDGE: To a small extent.

17602. MR. THOMSON: You have made due allowance for that timber, the old material?

17603. MR. VERNON: Yes. Mr. Thomson, in his address, pointed out that a plant of this description is very much better the second year than the first. Well, might I carry that argument on for, say ten years, and say that it is better in ten years. That is a fallacy. It may be in better working order the second year, but what about the third or fourth year?

17604. MR. THOMSON: I admit that you must allow for depreciation.

17605. MR. VERNON: We must allow for rapid depreciation, because at the end of that time, when the building is finished with, with reference to the engines, the boilers will require retubing, and the timber will have deteriorated. Therefore, I still claim, notwithstanding Mr. Oakden's opinion, that 15 per cent. in the stonework is a very moderate amount, and very fair to allow, which makes up the total of 9s. 8d.

17606. MR. BARLING: I suppose the timber will not last very long?

17607. MR. VERNON: No. I had to point out there was a small sum spent in altering some stone. The explanation is given that that stone is liable to be altered. That sum was very small, and I showed in the evidence that it was not included in the cost. It only amounted to £39. Then there came the question raised by Mr. Thomson as to the correctness of this amount, 9s. 8d., and how we arrived at it, and I think Mr. Thomson made a very curious mistake. It happened that during the progress of the inquiry we set ourselves to see what the stonemasons really worked the different kinds of stone at. We gave twenty-four sills at the Fisher Library to eight men, three different kinds of stone, and curiously enough the cost at which this stone worked out coincided very closely indeed with the actual cost that we worked out here in February; but, inasmuch as these stones were not worked until May, and I gave the results at Hospital in February, I think Mr. Thomson will see he is clearly mistaken in thinking we got our price for those sills. We [*interrupted*]—— Experimental working on Sills.

17608. MR. THOMSON: I repeat again I never saw such a coincidence.

17609. MR. VERNON: Yes; but the difference in the dates will explain that. Well, then, Mr. Thomson claims, and I must admire his pluck in doing so, that the 9s. 8d. is not excessive.

17610. MR. THOMSON: I beg your pardon; I mean the 5s. 5d. I do not know anything about the others.

17611. MR. VERNON: Your claim was that the cost was not excessive. Although you made a rather important admission, but you did not support it by any evidence. You only made the statement, but I do not think the Board can possibly take that as convincing, especially in the light of evidence given

given in other directions. Well, then, I think, Mr. Thomson, that you have acknowledged the accuracy of the returns, from this fact, that when you asked for the pay-sheets, we put 2,000 of them on this table, and you must have accepted those as correct.

17612. MR. BARLING: You must address the Board, Mr. Vernon.

17613. MR. VERNON: Well, we put on this table 2,000 sheets—that is, the whole of the sheets, and Mr. Thomson is allowed any examination of those. The Board, if pressed by Mr. Thomson, should be asked to have them audited, but I think I might say that the accuracy of those returns are not questioned.

17614. MR. THOMSON: I would like to say that I do not question them, but I would have gone through them if I could have got the time, for my own satisfaction.

17615–22. MR. VERNON: With regard to that actual cost, I do not think it is possible to get away from the fact that here are these accounts—there is no object in making them more or less; we do not desire to hide the naked truth, and therefore, the Board must take it that this is actually correct. Mr. McLeod says there must be something wrong if the cost works out at that amount—9s. 6d. he quoted. Mr. Loveridge gave us a comparison with his building at the Bank of Australasia, which I referred to at the last meeting. Mr. Stuart said that the allowance of the 15 per cent. was a proper allowance to make for the gantries. Mr. Thomson, in his address the other day, suggested that the cost of working the stone had, for alterations to the Administrative Block, by some error, or by some means, got into these returns, and were charged against the cost of the stone at the shed, but we have already heard in the evidence that such was not the case. This was kept on one side and had nothing to do with the shed work, and did not go through Mr. Ryce at all. In fact, it had been kept entirely distinct, and therefore, the price had not been included in the cost of that stone-work. Then, finally, Mr. Loveridge, in giving his evidence, states that the actual cost of the stone is certainly not its market value: that is really all I wish to bring before the Board as to the actual cost.

(The Investigation was then adjourned till Monday, 19th October, 1903, at 2·15 p.m.)

Mr. Vernon's Address—(continued).

Mr. Oakden's analysis of actual cost.

17623. MR. VERNON: In dealing further with the actual cost which was arrived at early in February, and which has not been materially altered since, the Board may recollect that Mr. Oakden, in answer to questions put to him in regard to the actual excessive cost, brought it down to 1s. 8d. per cubic foot on cutting. Now, the average cost of cutting has been 5s. 6d.—at least I am speaking of the price on 12th February, which has not been altered since, and if you take Mr. Oakden's 1s. 8d. from the 5s. 6d., you get, what he considers a proper cost, viz., 3s. 10d. It is very curious that my statement that the cost of the stonework under the Rotation System was 50 per cent. in excess of day work without the Rotation System, and Mr. Oakden's statement that the excessive cost is 1s. 8d., that is 45 per cent. on the 3s. 10d., practically coincides. I do not know whether the Board follows me in that argument. I got from Mr. Oakden two or three concessions on his excess cost, and there is no doubt if he were asked the question directly—which I did not do—he would admit that instead of it being 1s. 8d., the excess cost is about 2s.; and if that be the case then the excess over the proper cost would have been fully 50 per cent., carrying out to the letter the excess of the day labour with rotation over the day labour without rotation—that i 9s. 8d. over the 6s. 9d.

17624. I did not go very closely into the comparison with the Nurses' Home, but I am fully seized with the importance of the comparison with that building. It is part of the same institution, and it is built of brick and stone. The dimensions of the stones, after close examination, are proved to be very similar indeed to the dimensions of the stone in the Hospital, and, of course beyond that, you have the standard of price which that stone cost. There is no doubt the result of the cost of the stone on the Nurses' Home must have a very great influence on the minds of the Board in fixing what should be the cost of the stonework on the Prince Alfred Hospital Pavilions. I prepared a diagram giving the proportion of cube stones in the two buildings [*Exhibit No.* 169]. Those for the Hospital are coloured blue, and those for the Nurses' Home red. The variations between the two colours run in singular lines of unity, and appear to point to a very close comparison between the two. I have now gone beyond that diagram, and made a statement based on it, which gives the actual proportion of the stone in each building under its individual foot cube as against the whole of the stone.

17625. MR. BARLING: That is the return I asked for.

17626. MR. VERNON: I did not know you had asked for it.

17627. MR. BARLING: Yes; I asked Mr. Cook for it.

17628. MR. VERNON: At any rate, I had this one prepared, and it is given in fractions. [*Exhibit No.* 175.] Now, this shows in fractional parts a different mode of comparison, and it appears to me to point even more clearly to the actual similarity between the stones of these two buildings. As regards those under 1 foot cube there is a variation in favour of the pavilions, because the fraction is $\frac{1}{70}$; while, for the Nurses' Home, it is as much as $\frac{1}{12}$ of the whole. When you come to the 5 feet cube, it will be found that the fraction is $\frac{1}{9}$ as regards the pavilions, and $\frac{1}{10}$ as regards the Nurses' Home. Then 6 feet cube, the pavilions are $\frac{1}{16}$, and the Nurses' Home $\frac{1}{8}$, so that the whole cube of those two buildings hovers between 5 feet and 6 feet cube; one is nearer the 5 feet cube and the other the 6 feet cube, showing a very great similarity. Then, if the Board look further on, they will find in the 7 feet cube they are very much alike, the pavilions being $\frac{1}{23}$ and the Nurses' Home $\frac{1}{25}$. When you come to 8 feet cube they are $\frac{1}{37}$ and $\frac{1}{36}$ respectively, and when you come to 9 feet cube they are positively alike, being $\frac{1}{53}$ each. I do not see how the Board can get away from the comparison with the Nurses' Home on that particular point.

17629. MR. BARLING: This is a very useful return.

17630. MR. VERNON: Yes. Now, I will pass away from the actual cost and its assumed excess, or, I think, proved excess, and come to the causes which led up to it.

17631. MR. BARLING: I should like to call Mr. Loveridge's attention to one point. Mr. Oakden drew attention to the fact that he thought Mr. Stuart's statement that the stonework on the Nurses' Home cost him 3s. 9½d. was incorrect. I am drawing your attention to that so that you might be able to deal with it in your address. I think it would be advisable to call Mr. Stuart again with regard to that point.

17632. MR. LOVERIDGE: Yes.

17633. MR. VERNON: Even assuming that 3s. 9½d. is incorrect, there is a very large margin; there is 100 per cent. at least before you come to the office estimate.

17634. MR. BARLING: It is desirable to have it cleared up.

17635. MR. VERNON: Yes. Now, I will pass on to the causes which led to this actual cost. The opinions of the Department have been partially expressed in the letter to the Minister on the 12th February. They have not been modified, but they have been added to since that date, and on behalf of the Branch which I represent, I advance the following reasons for this actual cost:— Causes assigned by Department for actual excessive cost.

(1) The Rotation System as controlled by the Stonemasons; (2) Inability to bring good men from one work to another—transfer them; (3) The limitation of the choice of the foreman to 15 per cent. out of the 100 per cent.; (4) The fear of the foreman that even that 15 per cent. was to be taken away from him and cancelled; (5) The defiant attitude of certain of the men sent by the Society; (6) The failure of the State Labour Board to examine the men as to their qualifications; (7) The impotence of the State Labour Board to refuse the nominees of the Society; (8) The admission of the officers of the Society that it sends good, bad, and indifferent men; [*Interrupted*]——

17636. MR. THOMSON: You mean the admission of Mr. Grant?

17637. MR. VERNON: I will come to that. Then (9) The loss occasioned through engagement of men before knowing if they are capable or otherwise; (10) Retention of men for fear that others less suitable may be sent in their place; (11) Then, according to the evidence, general "slowing down" and "working in the usual manner"; (12) Hesitation to dismiss, being morally certain that political influence would be brought to bear to reinstate and to cause further loss of control; (13) Actual reinstatement after dismissal; (14) Right of appeal given to all dismissed; (15) Anticipation that concession given to Labourers' Protective Society to retain shop foremen throughout the whole job would at any time be applied to masons; (16) Interference of the Society and the shortening of the hours worked on the building by the setters, and consequently by the crane-drivers and dog-men; (17) Loss of one-twelfth of the working time of the cranes as a result; (18) Increase of the wages to carters.

Mr. Cook reminds me that the cause which I put down to the shortening of the hours worked on the building by the setters was brought on when there were only two setters on the building. The whole of these crane and dog-men were upset because of two men on the job. There was a request then from the carters for more pay, which was a very reasonable request to make, and which was properly granted to them. The next was (19) Impossibility of putting on well-known good men when they came to apply to the foreman for work; (20) Want of inducement to good men to stay on the job because they knew they could not be engaged by the Government on the next one; and (21) Having to deal with men like W. S. Thompson. I think the evidence which came before the Board last Friday must show that the foreman has to work under the greatest possible difficulties.

17638. Now, the Branch claims that for certain reasons the work ought to have been done at a much cheaper rate. For instance, there was only half the foreman's time charged on that stone. That would apply in favour of economy. Then the Department found the material, professional assistance, &c.—everything that a great Department could do was done. Then there was a first-class shed, and appliances in that shed to move and to cart the stone away; then on the buildings there were cranes placed with engines of the latest possible description; and then finally the plain character of the stonework itself. Those circumstances should have had an effect on the cost of the work in favour of keeping within the 6s. 3d. estimate.

17639. The Society representatives, on the other hand, deny that the work has cost more than it should properly do. In the first place, it is called a unique job, that is, there is nothing else to be compared with it in Sydney. The word "unique" is intended to mean that it is unique in regard to the costliness of the work. Then the comparison and examples of the small size of stone cube; then they say we have retained pets to the detriment of the work; we have used unsteady bankers; we have erected a shed which the men cannot work under; then they say the cost of cartage through not cutting the stone on the site is an unnecessary expenditure; and finally, that the actual cost is the commercial value. Causes assigned by stonemasons.

17640. Now, the Master Builders' Association has been represented here by Mr. Loveridge and two other gentlemen, and in the course of their evidence they gave these reasons as to the cost:—(1) The work is only comparable with the work of the Nurses' Home adjoining; (2) Day-labour and the Rotation System are causes of the excessive cost; (3) Political influence is another cause of the excessive cost; (4) Departmental mode of procedure; (5) Want of special training in the officers such as contractors obtain in working for themselves; (6) The "Government stroke" which has crept into the work; and (7) Deterioration in workmen generally. Then Mr. Stuart says that the extra cost nearly all lies in the cutting of the stone in the shed, and he admits that three items of excess—cutting, crane-haulage, and setting—have intimately to do with the Rotation System. Causes assigned by Master Builders.

17641. Those, gentlemen, are as far as I can gather from the evidence the causes of the actual cost. Condition of plant.

17642. Now, as the plant is involved in that, it is as well to bring before the Board the evidence given as to the state of the plant which was used. Mr. Grant said that there was a short supply of stone, and then he afterwards qualified that by saying that that would have very little to do with the excessive cost; so that, practically, he did not press his point that there was any shortage of stone. It is quite true that a suggestion was made to the Board that there had been a great shortage at one time, and that instructions had been really given to Mr. Saunders, the contractor, to stop sending in stone. I felt sure that that could not be correct. I made inquiries, and I found that this happened with the railway station. It never happened at the Prince Alfred Hospital. The bankers were complained of, and Mr. Grant promised to bring evidence to show that those bankers were not as they should be. He did not bring any evidence, and it was stated by contractors before the Board that it was the business of the stone-cutters themselves to see that their bankers were steady. A banker may be easily shifted in putting a block on to it; it may want blocking or wedging up, and it is the business of the cutter himself to see that the banker is steady. There was no evidence to prove that the bankers were unsteady or that there was any loss through that. Then Mr. Ryce was charged with being afraid to ask for material to put these bankers right. That was a most unheard-of thing, seeing that he had a large department at his back to find him anything he wanted. The evidence about the bankers proved after all to be second-hand. It afterwards turned out to have come through Cox. Mr. Grant and Mr. Thomson knew nothing about the bankers, but they were told something about it by Cox, who never turned up at the inquiry. Then when Mr. Grant complained about the shed and called it a coffin, it turned out in evidence afterwards that he had

actually asked the Minister, in one of his numerous interviews with him, to increase the dimensions so as to put more men under. If the shed was such an unhealthy place to work in, surely it would be wrong to increase its capacity so that more men would work under it. Well, now, we never had any complaint from the men at all. I think the masons are about as outspoken a set of artisans as any. Not even the men who are supposed to be our pets complained, and the Board have had an opportunity of seeing that shed. I have evidence further on from contractors who have built sheds and have used sheds, which may strengthen the opinion the Board may have formed when it paid that visit. Then Mr. Grant suggested that the plant at the hospital itself should have been used, and the stone should have been cut on the site. He did suggest some scheme—I do not think it was a practical one—by which the existing cranes on the building could pick up the stone out of the stoneyard. He suggested a sliding roof. The whole thing was impracticable, and, therefore, I do not think it is worth while taking up the Board's time in going into a matter of that kind. It was urged that the cartage from the shed was an unnecessary expense, but the evidence before the Board is all in the direction that it was not possible or practicable to cut the stone at the building, and, therefore, the shed was put where it was to answer a double purpose, and was fully equipped. Then Mr. Grant says the shed is fit for carpenters, and blacksmiths, but not for stonemasons. He says it is thoroughly scandalous to ask men to work in it. He said that quite recently in this inquiry, and as an alternative, he was asked whether shed accommodation existed in the quarries where the stone is sometimes worked, and he had to admit there was no shelter there. Then Mr. Thomson was very cautious in his evidence upon this point. He admitted not having seen the masons working until after the inquiry began; he said he had not had occasion to go near the shed before that, and his evidence, so far as it goes, is simply of what he saw after the inquiry. He gives no evidence whatever about the complaint. I think if the complaint had been so bad Mr. Thomson would certainly have pointed it out, and I think he would have driven home any faults or defects which were in it. He does not say one single word about the plant, and I think his silence in that case is an admission that the plant is everything it should be.

17643. MR. THOMSON: Yes, it is complete; I have no fault to find with it.

17644. MR. VERNON: Then Mr. Ryce has only one mould and one gauge. We have given in evidence elsewhere that a gauge would cost at the most 1s. We are told that very few stones require gauges. I think the Board should use its own common sense, and say whether a man in the position of Mr. Ryce would starve the work for the sake of a shilling straight-edge. I think they provide their own gauges. Mr. Loveridge might tell us.

17645. MR. LOVERIDGE: They don't, as a rule.

17646. MR. VERNON: There is no evidence to show that the gauge or the mould was wanting.

17647. MR. BARLING: The gauge is in reference to the size, and the mould the shape.

17648. MR. VERNON: The gauge is also for the height.

17649. MR. BARLING: Quite so.

17650. MR. VERNON: Now I come to the evidence which was given by the contractors; and before I go into their evidence, not only on this point but on other subjects, I would like to mention to the Board, what of course is perfectly apparent, that Mr. Loveridge, Mr. Pringle, and Mr. Stuart are here at the request of the Board. The Department has in no way asked these gentlemen to come and support anything they might have to urge; they are here at the invitation of the Board itself, and their opinions, I take it, are those which are given direct to the Board. There are other contractors whom I have found it necessary to bring here, because they have worked for the Department, to prove what their experience has been in carrying out works, and whose opinions I think I am at liberty to place before the Board, but as far as Mr. Loveridge, Mr. Pringle, and Mr. Stuart are concerned, their opinions are absolutely independent of either myself or my branch.

17651. MR. BARLING: They were undoubtedly invited by the Board to be present because they were the official representatives of the Builders' Association.

17652. MR. VERNON: Quite so. Mr. Howie considered the shed the best he ever saw, and he would blame the masons if their bankers were not steady. He would not blame the foreman. He admits that the stone could not be worked at the Hospital, as it would interfere with the Hospital patients. He also said he would adopt the Government method of one foreman over two jobs, even if he had to cart the stone. Mr. M'Leod said the facilities at the shed are all that is to be desired. He said it was too comfortable. Mr. Wall said the shed was very good.

17653. MR. BARLING: I think Mr. M'Leod told us it was a palace.

17654. MR. VERNON: Yes, he did. Mr. Loveridge considered the shed well found in every way, and not too substantial for six or seven years' use. He considers the plant very complete, and he considers it advantageous to have stonework for both jobs done conjointly. He refers to the difficulty of satisfying complaints of all men with regard to the shed. Although we have not had any complaints, except the complaint laid here by Mr. Grant, still, if the men had complained, it is perfectly apparent we cannot satisfy all, and that is what Mr. Loveridge drew attention to. Then we had the evidence of a man who actually worked in the shed, that is Mr. Dumbrell. He worked there until he went to another occupation, and he admits he has never had to complain about the bankers or the shed being in a dirty condition. He further admits that very few stones require gauges. Mr. Stuart does not think they could cut the stone elsewhere than at the Fisher Library, and Mr. Oakden, I think, gave you the same opinion as to the impracticability of cutting the stone at the Hospital, and he approved of the principle adopted of cutting the stone at the Fisher Library.

17655. Now, after having dealt with the plant, I may say, practically speaking, there is nothing in the complaint made against it, and I think it would be wasting the time of the Board to go into it further. If we had put up boilers which were not safe, if we had had accidents on the gantries, and so on, then there would be serious cause to look into the question; but when the complaint is brought down to a shilling gauge out of thousands and thousands of pounds spent on the plant, it is almost ridiculous.

Position of officers in this Inquiry.

17656. Now I come to, what is to me, a much more personal point in the inquiry, and that is the position of the officers with regard to this work. Whether they have done all that reasonable men could do; whether they have exercised not only professional experience, but practical experience, of buildings so far as it is possible for them to do, or whether they have evaded their responsibility, the evidence goes to show there are practically no complaints whatever. As I pointed out at the commencement of my summing up, I considered it my duty to make a voluntary statement to the Minister, and it was on that

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voluntary statement these proceedings have taken place. I have, therefore, placed myself in a far better position than I should have done had the inquiry been forced upon me by any outside circumstances. There are no specific complaints against the officers, there are no suggestions of derelictions of duty, and there are no previous inquiries and censures as far as carrying out the work is concerned. I reported that I was satisfied with my officers, and I claim that the monetary result of the cost of the stone is in no way attributable to them. When we come to the evidence, Mr. Grant spoke of irresponsible officers. That is altogether a misnomer. The sense in which he stated that seemed to imply that the officers, no matter what they did, would not get into trouble. That is not the real sense of "irresponsible" in this case; the fact is that Mr. Grant and Mr. Thomson are the irresponsible men. As soon as they have finished their work they are perfectly free to go elsewhere and forget all about it, but the responsibility of the officers by no means ceases; their responsibilities are just beginning, and they have to justify to the Government why this building is costing so much for the stonework. Mr. Grant, at the commencement of his evidence, undertook to prove that mistakes were made by the Government Architect, Mr. Cook, and Mr. Ryce. He promised to do that, but he has not done so. He has brought nothing whatever in support of that statement, so the Board must take that for what it is worth. There was no attempt whatever to prove any alleged mistakes. Supposing the Board exonerates the officers from mistakes, or from any dereliction of duty, these charges have been brought in a very loose sort of way, with no responsibility about them, and Mr. Grant and his men can come next week and make similar charges against us. The officers of the Department are necessarily placed in a position to be shot at. They have no means of retaliation except through the proper course. They can only mind their own business; but they may be placed in this position through any ill-conditioned mind, as we saw in the box on Friday. Government Architect.

17657. MR. THOMSON: I hope you do not associate us with him.

17658. MR. BARLING: You can ease your mind, Mr. Thomson, we do not associate you with him in any way; in fact, it can be used as a strong argument in favour of the rotation system. I understand you bitterly oppose political influence and you urge the rotation system as a remedy for it, therefore it is an argument in favour of rather than against your case.

17659. MR. VERNON: This was a case showing that an ill-conditioned mind can formulate charges which cause the officers no end of anxiety and trouble to rebutt, knowing perfectly well that they are absolutely innocent in the matter, and it is so all through the piece. These men, who think they are aggrieved, can make these charges, and the difficulty is to get clear of them.

17660. MR. THOMSON: That does not apply to you only. I may state to the Board, so that it may go down in the notes, that numbers of persons have asked me since Mr. Dumbrell has not been here if he had got a job from the Government to close his mouth. It not only applies to you, but it applies also to Mr. Dumbrell, who has got a situation from a private firm in Maitland.

17661. MR. VERNON: I am sure I have had nothing to do with that.

17662. MR. THOMSON: He got it because he had some kind of capacity for it.

17663. MR. BARLING: Mr. Vernon is quite justified in drawing attention to that because it is an argument in his favour. It is also an argument in your favour. You are taking up a position against the rotation system and political influence together. This is a sample of political influence.

17664. MR. VERNON: Then there was another matter which cropped up in the evidence showing the advantage which men like Mr. Grant have over the officers of the Department. Mr. Grant proceeded to read from the *Daily Telegraph* a letter of his own stating his case, but the Board very properly stopped him, because no man can state his case in the newspaper and bring it in as evidence; but there is this about it, he is perfectly free to go to the public press and give an expression of opinion; I am not. We have had in connection with this matter all sorts of representations made in the public press, and we have to stand quietly by as we have no power to stop it. The officers of the Department are therefore placed in a very difficult position indeed. We have only done our duty so far as I know, but because we have done our duty we are not entitled to any thanks; on the other hand we do claim that the Board should in its deliberations entirely exonerate the officers concerned from anything which may cast a slur upon their professional characters. Mr. Grant said that the Government Architect blundered in using small stone in Purgatory. That I need not go into; it was a passing statement and was really made at the moment to answer some question. He charges the Officers with disagreeing with regulations *re* private employment and not advising the Minister. I was never asked to advise the Minister *re* private employment, and Mr. Grant certainly does not know what my opinions are about it, so that that falls to the ground. He states my mistakes were principally those of calculations, but he does not follow it up by stating in what direction those calculations were wrong. If it was the calculation of 6s. 3d., then Mr. Thomson said he agreed with it. There is really nothing in such a statement; it is merely an answer to a question with no particular point to it. Then he told the Board that the Government Architect desires to make the Rotation System a scapegoat to carry his own incapacity. That I must leave to the Board also. He asked if Mr. Howie, who gave evidence which probably he did not altogether appreciate, was a feed witness of mine. I do not fee witnesses to come to this Court. It is perfectly apparent that was a suggestion without any ground whatever. He then charges the Department with having Purgatory stone forced on it by Mr. Saunders. The Board must understand I am picking out everything I can find in the evidence which is in any shape or form a charge against the Officers. I am picking out things which may be said not to be worth attention, but it is my duty to bring them out in order that they can be taken at their value, and then I know there is nothing left in the evidence on which the Board can form any opinion. He then claims that the Government Architect is in favor of employing men already at work. I have not expressed my opinion to Mr. Grant in regard to that, therefore, he is absolutely at sea. Then he says, in admitting the loss is damaging to the Day-labour and Rotation System, it might show incompetency on the part of Officers. Well, that is not a direct charge at all. That is only a statement given which is not followed out by any further statement or further evidence. It was also complained that I sent men to Mr. Ryce and broke the regulations. Personally I sent no man to Mr. Ryce, so that that suggestion of Mr. Grant's is also without any foundation. Of course I might explain to the Board here that almost daily I am receiving letters from Members of Parliament, and I pass those on to my Officers. Last week I had three or four. Sometimes I sent them round the whole of the Office, and then write a letter in reply stating that we cannot find work for the man in question, and that he should apply to the State Labour Board in the general way. We have to be courteous to Members of Parliament, and it is done in that way. If I had

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sent any man to Mr. Ryce, it would be under such circumstances as those, but, as a matter of fact, I did not send him any one. I might say this in favor of the Stonemasons' Society, that the Stonemasons, I think, have less communication with Members of Parliament than any other body, that is as individual men.

17665. MR. THOMSON: Yes, they have a strong objection to that.

17666. MR. VERNON: Plumbers and masons have less communication with Members of Parliament than any other body, that is, as individual men, but I think the evidence goes to show that the stonemasons collectively, bring great pressure to bear. Individually they do very little, and I think that is the reason I have never sent any man to Ryce, because they have not come to me. I can find no more about myself, and I now come to Mr. Cook.

Mr. Cook. 17667. They question Mr. Cook's fairness in regard to his choice of men, but there are no details. Mr. Cook does not choose the men. He has simply been doing his duty. He dare not put on a stranger, as he might cost the Department many pounds if a careless man. I might give the Board an instance of the hap-hazard way in which we have sometimes had men sent us. At the Art Gallery, soon after the State Labour Board came into operation, it was necessary to have a plasterer to do some special work. Hitherto we had always sent for one or two men who had been through the job, and who could be thoroughly trusted with our work. This time we could not, and Mr. Cook sent to the State Labour Board. A man came down, and the first thing he did was to come to Mr. Cook to borrow 5s. to get some tools. Now, that is the class of workman we had to put on at the Art Gallery.

17668. MR. THOMSON: He was not a stonemason?

17669. MR. VERNON: No, a plasterer. I have no doubt Mr. Cook broke the regulations in that case and got his man back. If he did not do so then I blame him. Mr. Grant admits that Mr. Cook was right in following the instructions, and he admitted when that statement was put in, showing that only five men were put on under the 25 per cent. regulation, and 12 under the 15 per cent., out of 124, that Mr. Cook was right. He had no other charges or complaints against Mr. Cook. He further on stated that Mr. Cook required an absolutely free hand to carry out the work, and then he admitted that if the work is more expensive than it should be, the officers are not responsible. That is on page 442. Although Mr. Grant was quarrelsome with the officers now and again, he was honest enough to say at the end that the officers were not responsible if the work turned out to be more expensive than it should be. Throughout the whole of the Inquiry there is not one suggestion against Mr. Cook besides those I have just drawn the attention of the Board to. Therefore there is a great deal more said about myself than about Mr. Cook.

Mr. Ryce. 17670. Then they had some complaints to make in regard to Mr. Ryce. When the Rotation System first began and the change took place with regard to the men there was some sort of complaint made against Mr. Ryce that he had told the men they should get married in order to secure a banker. No doubt Mr. Ryce said it, but he would say it merely as a joke. It was the intention I think at the time that married men should have preference over single men, and of course he went round and made a joke about it. There is no charge in that. It was merely a joke, and I do not suppose many single men went and got married on the strength of it. Then Mr. Grant says he has nothing to say against Mr. Ryce. He afterwards admitted that the evidence about Ryce working up an agitation in opposition to the rotation system was simply hearsay evidence. That is to say it was merely the idle talk of the men in the shed during their meal hours. He further stated that the foreman's free hand was a bogus hand. I do not know what he means by that excepting that when Mr. Ryce had the choice of fifteen per cent., Mr. Cook would take it instead of Mr. Ryce. There is no evidence to show how these men were chosen. I believe myself Mr. Ryce had the men he wanted. Of course, the word "bogus" is a Trades Union term, and we all know its meaning. Mr. Grant believed that Ryce allowed the bankers to be out of order and was afraid to ask for material. He admits if Ryce had pets he has pets also, and he would do the same as Mr. Ryce. In the first place we do not admit that Mr. Ryce had any pets. Mr. Ryce had the choice of fifteen per cent. of his men, and Mr. Grant said if he were in the same position as Mr. Ryce he would also have pets.

17671. MR. BARLING: There is no harm in having pets if they are chosen according to their relative capacity for doing work.

17672. MR. VERNON: Yes; then, here is a curious thing, on page 648 Mr. Grant says he has nothing to say against Mr. Ryce, and then on page 657, only a few pages further on, he insists upon the charge of favouritism against Mr. Ryce. So that there is a contradiction on the part of Mr. Grant. Again, on page 635, he states that the pets have slowed down as a reward for being put on, and then he goes on further to tell the Board that some of the men have the greatest contempt for Mr. Ryce and do not fail to show it. Then, on the other hand, he states that some have the greatest respect for him. Mr. Grant's whole evidence is really contradictory in that respect, and when it is investigated it will be found that there is absolutely no charge against Mr. Ryce. Mr. Thomson declines to express an opinion as to Mr. Ryce not showing grit in dismissing or discharging Cox. It was suggested that Mr. Ryce did not show sufficient grit and backbone in dealing with these men, particularly with Cox. Mr. Thomson declined to express any opinion about it.

17673. MR. THOMSON: That was his own business; it had nothing to do with me.

17674. MR. VERNON: A good deal has been said about the foreman not showing grit and backbone. Now, to look at the matter reasonably, why should Mr. Ryce put his bread and cheese in jeopardy for an abstract principle? If he were responsible for laying down the regulations, and then the result of carrying them out fell back upon himself, he ought to suffer; but when he is placed there to carry out the work under certain conditions, and he knows perfectly well morally if he discharged all those men influence would be brought to bear the very next day to get those men reinstated and to make his position an impossible one, he is powerless.

17675. MR. LOVERIDGE: Influence is brought to bear the same night.

17676. MR. VERNON: Yes, the same night after six o'clock. Take the case of Cox who was the Steward of the Masons' Society. The Minister granted exceptional conditions with regard to the Steward of another Society stating that he was to be the last man discharged on the job. Certainly Cox did not know this, but if Cox had been discharged for insubordination and had gone to the Minister or to the Department, then he (Ryce) next morning would have been in a very difficult position. I have no right to discuss the Minister's policy, but I must observe things, and I must do the best I can under the circumstances. If Mr. Ryce did not show sufficient backbone by discharging all these men, knowing the trouble

trouble that would be brought upon him, it might be said that I have not sufficient backbone, because the work is costing too much, to resign my position. I do not think an officer is called upon to do that, but he is called upon to do the best under the circumstances he is placed in. Mr. Ryce is a man who has been many years with us.

17677. MR. THOMSON: So has Cox.

17678. MR. VERNON: It is quite true that Cox was a man under the first conditions amenable to discipline; but under the second conditions he was not, and that is where the difference comes in. Now, we have a statement by Mr. Grant that Mr. Harris had faked the report of an interview with the Minister. Mr. Harris was called into the box and he, of course, said he had no interest whatever except to honestly put down from his shorthand notes the gist of what had taken place. He said he did not put it down verbatim, because there is always a good deal of surplusage which is of no use to anybody, but the gist of the whole interview was put in the report. Mr. Harris.

17679. Then the foreman is charged with putting particular favourites in the 15 per cent., and Mr. Grant denies that Messrs. Elliott, Coates, and Ryce are fair and reasonable men to work out prices. I have already referred to that. He then states that Ryce had an absolutely free hand to dismiss, but he did not make use of it. It has been shown in evidence that there was a power hovering over Mr. Ryce which prevented him having this power of dismissal. He really did not have it; if he did it was an empty shell, the hollowness of which might be demonstrated in another few hours. There was another officer who came upon the scene and then went off again; his name was Shepherd. When the Rotation System began he kept a list of the masons of tried capacity and who were known favourably to the Department, and when the works were continued at the Colonial Secretary's Offices and elsewhere this list was made use of. We heard some story about a bogus list, but I do not think anybody clearly understood what Mr. Grant meant by it. The list was produced and it was by no means a bogus list, it was an absolutely true list. The men were taken on as they came by priority of registration. To that extent the rotation system can be worked. It was working very well, and it was only when other causes came in that it took, what I think, a wrong turn altogether and became what it is now. Now, Mr. Loveridge states that Mr. Ryce was a competent tradesman when working for his father. He has not had any experience of him since then. He further considers that Mr. Ryce's work shows that he has some practical knowledge. Mr. Loveridge cannot say that the fault lies with the officers of the Department, and he does not think it possible for officers to obtain a satisfactory result as they are tied down in every possible way. He does not think it possible for officers to have a free hand; he does not think they can get it. He gives his foreman free and unfettered control to engage and dismiss. Mr. Cook considers Mr. Ryce a competent man and he has had no fault to find with him or any of his leading men. Mr. Ryce himself explains that he is doing the best he can. Mr. Marsden, from Victoria, stated that the foreman does not care to dismiss because there might be an appeal. He does not think the foreman feels in a position to exercise his power of dismissal. Mr. Stuart stated he gave his foreman unrestricted control, and he thought that eight years' experience was a considerable factor in appointing Ryce to his position.

17680. Then we come to one of the features of the proceedings, a small thing, but it was not a nice thing of Mr. Grant. Repeated appeals were made to the President that witnesses brought by the Society should be fully protected. I thought it was not necessary to give that assurance, but the Chairman stated that every man who came here would be absolutely free to give his opinion, and it would have no bearing on his engagement by the officers in the slightest degree. That is all very well and very proper, and what should be; but while that is going on what does Mr. Grant himself do? Mr. Grant goes to the Minister after he had the assurance of the Chairman, and asks the Minister to discharge Harding, a young fellow who came here to give evidence as to the time he had kept for working the stones in the shed. I call that a very unfair thing to do, and I was very much surprised at Mr. Grant, because I must confess I had learnt to appreciate a good deal of Mr. Grant's character, but, I think, that is a thing he would be absolutely ashamed of if he were to think it over. Mr. Harding.

17681. Then speaking of the officers generally and their pets, Mr. Grant admits the tendency of the officers' pets was to slacken down and work in the usual manner; that is an admission of course intended as a slur upon the pets; but we do not deny that the pets, if there are such men, did work like all of them; we do not deny that, and if these men had put themselves on one side and worked differently to the others they would have been marked men.

17682. Mr. THOMSON: In what respect do you mean "marked men"?

17683. Mr. VERNON: They would be all Longmuirs.

17684. Mr. THOMSON: Do you mean when they left the Government?

17685. Mr. VERNON: Yes.

17686. Mr. THOMSON: That is all nonsense.

17687. Mr. VERNON: I can only assume it. I have no evidence to show it, but I think it is a fair deduction. Then Mr. Thomson said he did not come here to question the officers. I think Mr. Thomson has fought his case as very few men would fight a case; he has taken every point and made the best of it. I do not think if he thought it his duty to put his finger on any misdeed of the officers he would hesitate to do it, but he comes here and tells you he does not question the officers. Then finally the Under Secretary, who came here and gave evidence, told the Board on page 1565 that he was satisfied with the officers in charge of these works. He further stated that he could not select as one cause of the excess cost the incompetency of the officers. I do not think I need say any more about the officers. Here is the Under Secretary, he is satisfied with them. The charges which are mere complaints, childish complaints almost, are not backed up by witnesses, and they are made more in sport than anything else, but of course I must not lose sight of the fact that when an officer is shot at in this way he has no power to defend himself except through the channels of the Board, and therefore he must take that opportunity of clearing himself.

17688. Now I come to the main pivot on which the whole of this inquiry hinges, and that is the adoption of the Rotation System under its present conditions as distinct from Day-labour without the Rotation System. I want to most clearly and particularly urge before the Board that it would be wrong and improper for me as an Officer of the Works Department to in any way question or traverse the policy of the Department and the Government. My duty is a simple one in that respect; it is simply to obey instructions and to do the best I can. Therefore, if I make any remarks about the Rotation System I hope the Board will understand that I am in no way referring to the Day-labour System itself; I am only referring to the barnacles which have got on to it, and which I think I have clearly and properly The Rotation System.

properly pointed out might be removed. That is the position I take up, and I have nothing whatever to do with the contractors in that respect, who are here to watch the case from their point of view. Now, what is the Rotation System as the Board understands it? It is a very simple thing. It is the selection of the great bulk of men to carry out Government works by a body which is not connected in any shape or form with the Government. It is also, as I said the other day, to all intents and purposes an absolute case of relief system of skilled men, a conclusion which I am sure they will resent, because stonemasons of all others are the most independent of the skilled men in this State. Mr. Thomson and Mr. Grant, in their summing up, gave the Board an ideal rotation system, but it was full of so many "ifs"—if political influence was not brought to bear, if the officers had control of the work, then the Rotation System would be an ideal system, and so on. It is an absolute impossibility under those conditions. Those "ifs" must always remain. We should be in a Utopia if we could have a rotation system under the picture Mr. Thomson gives. It is not possible in a place like Sydney at the present day. The system was initiated, as has been told to the Board in evidence, by the Minister in the appointment of a State Labour Board to meet the increasing difficulty of finding employment for applicants. Now this difficulty— and it has not come clearly before the Board yet—was created not by any particular stress of distress in the city or by any want of general employment in the city, but because such inducements were being held out to men throughout the country districts to crowd into Sydney and obtain employment under the Government that the country was denuded of men and the city overfilled.

Initiation of State Labour Board.

17689. MR. THOMSON: There are no stonemasons in the country.

17690. MR. VERNON: I am speaking of trades generally. My own experience of this, which I claim is as good as that of most people's, because I deal with skilled labour, and the other branches deal mostly with unskilled labour, is that in letting contracts in country districts the tenders have gone up exceedingly, and the cause is that there are no men to be found to carry out the work.

17691. MR. THOMSON: The drought, too.

17692. MR. VERNON: This was before the drought. The men had crowded to Sydney, and contractor after contractor told me that in carrying out any particular work for us he would have to take men from Sydney, pay their fares, and then take the chance of them stopping with him. I had one particular work at Moree where, I believe, three different gangs of carpenters were sent up by the contractor, all at his expense, and Moree is no short distance from Sydney. He was carrying out this work at very great trouble and expense to himself, and in a very unsatisfactory way to the Department, and he could not possibly help himself. These men were crowding in upon the Minister, and it was then that the Minister started the State Labour Board in order to take over this constant annoyance. The Rotation System, as I pointed out the other day, did not start in the way it afterwards went on. The Board's intention was to adopt lists like that one of Shepherd's. There was to be no restriction, no rules to prevent a man from being brought from one job to another, and the Rotation System at that time was nothing more than an organisation, the same as we were using before. Then came the opportunity of this society. First of all, the Trades Hall people saw they had a chance to relieve themselves of their own men; they began to bring influence to bear and they got a footing. Mr. Brennan has carried out his work fairly and extremely well. I do not blame the Trades Hall for one moment. Then began that constant pressure in which the Stonemasons' Society took a very prominent part in gradually reducing the choice of our officers; in preventing men from being taken from one work to another; and, eventually, in the stonemasons obtaining for themselves the choice of all their men, with the exception of 15 per cent. At one time the heads of the branches saw the Minister and urged that they should retain the power to take tried men from one job to another, and the Minister granted it to them seeing it was a very reasonable thing to do. We have been repeatedly told at this Inquiry that no matter what the societies have claimed and obtained, the great safeguard of the Government is the fact that the foreman has the absolute right of dismissal—that although he has not power to put on, he has the power of dismissal—and that has been urged from time to time until one would almost think it is a fact. At a superficial glance, no doubt it appears to be a fact; but when you come to see what is underneath you find it is by no means a fact. I want now to refer particularly to that right of appeal. A circular was issued by the Under Secretary on the 23rd December, 1902, as follows:—

Departmental Instructions.

> "In accordance with the Minister's directions, I have to instruct you that you must insist upon the men engaged upon day-labour works under your supervision earning the day's pay to which they are entitled. If any of the men do not do this after a fair trial, they are to be discharged. You will be held responsible for any laxity in this respect so far as the men under you are concerned; and all appeals by the men against such dismissal will have to be made to the Departmental Board, which the Minister recently appointed to deal with the question of employment of men. Please notify overseers and gangers under you to the above effect."

Copies of that were sent to Messrs. Wilson, Goulding, Sayers, Thornton, Roberts, and Thomas. Now, if one carefully looks at that circular—and I say it with all due respect, because the Under Secretary is my senior officer and the permanent head of the Department—it is absolutely contradictory in itself. A foreman is told that he is expected to do his duty; he has to see that the men earn their money; he has to be held responsible for any laxity in that respect; and in the same line there is a right of appeal given to the men against the foreman. The position is an absolutely impossible one. How can a foreman take these steps, see there is no laxity in the work, see that the men earn their day's pay to which they are entitled, when in the same line the men have got the loophole of getting behind the foreman? That is a circular which came to Mr. Cook, and there is one curious exception in the names at the foot of it. The names of Wilson, Goulding, Sayers, Thornton, Roberts and Thomas are there, but not Ryce. That, of course, is an accidental omission. But Mr. Cook did, I think, a very proper thing. He purposely locked it up in his drawer; he felt as I would feel, that the sending of this notice on to the works would bring absolute chaos at once, and he did not send it on. He did not even let Mr. Ryce know. Mr. Cook has just corrected me; he says he had it posted up on the works, but the words "and all appeals by the men against such dismissal will have to be made to the Departmental Board which the Minister recently appointed to deal with the question of employment of men" were omitted. The foreman knew it, but the men did not.

17693. MR. BARLING: Mr. Grant has drawn special attention to that.

17694. MR. VERNON: These are circumstances which Mr. Grant knew nothing about. Here was an absolute right of appeal against Mr. Ryce, which Mr. Grant did not know of, and I think he would have been very happy if he could have got hold of it.

17695. MR. BARLING: Mr. Grant drew attention to that again and again. He said the men knew nothing about an Appeal Board.

17696. MR. VERNON: We must take the responsibility of keeping that knowledge from the men, and I must say we were perfectly justified in doing it. Now, I wish to point out that Mr. Ryce had this in his mind, and this circular, although there was an omission as far as he was concerned, had been sent out generally to the departmental gangers, and therefore it was the easiest thing in the world for the stonemasons employed by Mr. Ryce to gain this information from other sources. Mr. Ryce did not know but that they had this information, so that when it is said that Mr. Ryce had the power of dismissal, Mr. Ryce knew from this circular that there was a power of appeal behind him, showing the position was clearly an untenable one.

17697. We now came to another part of the rotation aspect. Mr. Grant made use of the word "unique" several times when speaking of the building. I am going to apply that term to the Rotation System, and I think I am much more correct in all my detail in calling this system, which is adopted in the Works Department of New South Wales, an absolutely unique one. If the Board recollect, I took Mr. Grant to the Harbour Trust—no rotation; I took him to the Railway Commissioners—such a thing unheard of; I took him to the Water and Sewerage Board—they would not have it any price. Rotation System exclusively adopted by Public Works Department.

17698. MR. THOMSON: What do you mean by the Railway Commissioners? I understand there is rotation there.

17699. MR. VERNON: There is rotation on the list which the Commissioners have themselves, under certain conditions, but you do not send masons to the Railway Commissioners. I then took Mr. Grant to the Department of Public Instruction—they have no rotation.

17700. MR. BARLING: My colleagues point out to me, Mr. Vernon, that we have a Rotation System here. The Rotation System we have here is this: after we have selected the men we put them on a list, and we take them on by rotation.

17701. MR. VERNON: That is the Rotation System which we had in the first instance.

17702. MR. WILSON: They have the same thing in the Printing Office.

17703. MR. VERNON: I then took Mr. Grant to Newcastle—no Rotation System there; I went to Broken Hill—none there; so that in only a certain portion of Government work this form of engagement is carried on. I think I can safely call it unique.

17704. MR. THOMSON: It is a very expressive term.

17705. MR. VERNON: Yes, it is Mr. Grant's. I want the Board to bear with me while I read a short extract from the *Sydney Morning Herald* of the 13th instant, dealing with the report of the Committee of the City Council upon the employment of men through the aldermen:—

> "Appointments should be made by the head of the department concerned, subject to the approval of the Town Clerk, and suspensions and dismissals should be dealt with exclusively by the Town Clerk upon the report of the officers, and then reported without loss of time to the Council. Of course, the success or failure of such a system as this depends upon the ability of the Town Clerk; but a Town Clerk who could not be depended on here has no right to be in his position. Large employers of labour—mining companies, for instance—do not themselves attend to details. The shareholders delegate their authority to directors, and the directors in turn to certain officers. They do not generally interfere with these officers on matters of detail; if they did, why not abolish the officers and do all the work themselves? Once the system of delegation of authority is established, there can be no regular tampering with it without such a result as we see in the City Cleansing Department. The position, then, is summed up in the burden of the Town Clerk's criticism, endorsed by the draft report before us, that aldermanic interference—direct or indirect, but chiefly the latter—with official administration has practically demoralised the service."

Then, leaving New South Wales and going to Queensland, the *Sydney Morning Herald* of the same day states:—

> "Brisbane, Monday.—As the result of the proposal to reduce the composing staff of the Government Printing Office, three delegates from the men waited on Mr. Kidston and the Government Printer to-day. Mr. Kidston, in reply, said he received the deputation chiefly for the purpose of getting the men in the office to understand that he wanted all this kind of thing to end. He had no intention of going into the merits of the changes, because, even if he entirely agreed with their views, he would not interfere with Mr. Vaughan. A Government institution of this sort was often made ineffective and unprofitable because the head was continually interfered with, sometimes for political or personal reasons outside the business. When he entered office he decided, so far as he could effect the matter, that there should be no political or personal influence exercised by a Minister or anyone else, either in the Printing Office or any other Department under the Treasurer. This was best for the men in the end, and certainly best for the country. He wanted to hold Mr. Vaughan responsible for the efficient and economical carrying out of the work of the office, and if he interfered with him he would not be able to hold him responsible. If a manager was to be held responsible, he must be the 'boss' There was not to be a Court of Appeal in matters of detail to the Minister, but only when he had reason to believe there was gross partiality would he feel called upon to interfere."

That was only last week. You heard what Mr. Marsden had to say. In the other States, Mr. Grant admitted there was nothing of the kind. There is nothing of the kind with the London County Council; there is nothing of the kind in the United States, Glasgow, Germany, or South Africa. As a matter of fact, the only place in the whole world where such a system is in vogue is Sydney, and then only partially; so that the word "unique" should be really attached to the Rotation System.

17706. What about the Stonemasons' Society itself? They have not received this state of things unanimously. The society itself is by no means unanimous about this state of affairs. Mr. Grant admitted that the rotation system was agreed to by the society to the annoyance of the men who called the meeting, showing there is a "rift in the lute" somewhere. He certainly denies that the excessive cost was traceable to the Rotation System, but it is by no means clear that the society as a whole is unanimous in its adoption. If they were unanimous, what then? What is their strength? They have 309 financial members on the roll. Well, are 309 men to govern the whole of the expenditure of the Government Works Differences of opinion in Stonemasons' Society.

Works Department of New South Wales? When it is recollected that two-thirds or, at any rate, half of these men are working in private employ, should the remainder dictate to the Government? Yet they are put in a position which enables them to do this. Then we have some little side-lights thrown on to the matter on my suggestion, and I think that Mr. Grant would not disagree with it, that it was a good chance of putting the screw on them to make them financial members. "If I get you work at the Prince Alfred Hospital you must be a financial member before you go there."

17707. MR. THOMSON: Nothing like that.

17708. MR. VERNON: What a splendid chance. If the stonemasons are the clear-headed people I take them to be, you may depend upon it there are few men working at the Hospital whose subscriptions are in arrear. Then Mr. Grant admits there are many members with different views to himself, and when I suggested that some of the members objected to his representation of the society here, he said it was only "cussedness" on the part of those men, showing that there is a good deal in the society differences. If we could get their opinion, individually, it would be shown that these opinions are very varied.

17709. MR. THOMSON: There is a variety of opinion.

17710. MR. VERNON: I know several stonemasons personally, and their views do not at all coincide with those of the gentlemen here. I suggested, as the Board may recollect, that Mr. Dumbrell came here partly to watch the proceedings and partly to watch these two gentlemen. I want the Board to consider that there is a grain of probability in that. Then, again, Mr. Grant sums up his own fellow members of the Society by stating that any member opposed to rotation is "cussed." That is very wild speaking. There, again, there is a little rift in the lute, showing there is no unanimity amongst the men themselves, and he is obliged to say that those who are opposed to rotation are "cussed." I am inclined to think that if a very great alteration is made, the members of the Stonemasons' Society will accept it just as readily as it is issued. I do not think they believe in the system one little bit. I do not think they do. Mr. Grant considers that the members, if untrammelled, will support dictation to the Minister. That is such a nice thing to do—to come down full force on to the Minister and use his argument in the way Mr. Grant states he does occasionally. There is no meaning in that expression of his at all. It is simply a little empty bravado. He omitted to answer the question I put to him as to obtaining subscriptions from the men before they got employment. I suggested that the screw could be put on them readily, but Mr. Grant would not answer that question; and as he was so free in answering questions generally I think I may fairly conclude it would not be convenient for him to answer that question.

17711. MR. THOMSON: We are very lenient as far as the members are concerned.

17712. MR. VERNON: Then in cross-examination I suggested to Mr. Grant that there was nothing before the Board as to how he chose the men, whether it was because they were financial, whether it was because they were competent, or whether it was because they were unemployed, or pets of his own. Mr. Grant promised this Board that he would bring evidence to show that he had adopted the innocent Rotation System, and that he had simply put men on as they came to him. I beg leave to doubt that statement. Mr. Grant was going to give evidence that that was the way in which he sent the men on. He has neglected to do it, and I judge from that that he did make a selection of his own, and that Mr. Grant's pets are the men we have had on our jobs. There is nothing whatever to disprove what I say. Although Mr. Grant promised he would do it, he has not.

Mr. Thomson's opinions on Rotation System.

17713. I now come to Mr. Thomson. I told you just now that Mr. Thomson had not seen the masons working before the inquiry began; but he agrees with the Rotation System, in a cautious sort of way in one part of his evidence, whether they come good, bad, or indifferent. He then declines to state whether the men should be all paid alike. He was asked whether a man working like himself and men who are not so competent, that is men with different results, should all receive the same payment, but he declined to say; in other words, he does not believe in paying all men alike for different results.

17714. MR. THOMSON: Our union had a provision of this character in its rules—that if a man is incapacitated by age or accident, he can make his own arrangements with his employer.

17715. MR. BARLING: I think Mr. Vernon is referring to the general class of workmen and the varying capacities of them.

17716. MR. VERNON: Quite so. Mr. Thomson declined to say whether he believed in payment by result. He is a very outspoken man, and I think if he thought his views did not help his colleagues he would say to himself, "I do not think I will say anything."

17717. MR. THOMSON: It would open such a wide question that it would take me about three days to explain it.

17718. MR. VERNON: Then Mr. Thomson admitted that men had been put back after dismissal by the foreman. He did not refer to the Prince Alfred Hospital; he referred to works generally. Then again, Mr. Thomson declines to express an opinion as to whether something is wrong with day labour. If Mr. Thomson's faith were so deep and pinned to the present system of rotation, he would not hesitate to say there was absolutely nothing wrong; but he declines to say there is nothing wrong, and that attitude which he takes up shows at once that he thinks there is something wrong, and he knows there is something wrong. He further states he is not here to defend the Rotation System. If there is no one here to defend it, it ought to go. This is a moment when every advocate of that system should defend it, but it appears its own champions are not going to defend it. Then Mr. Thomson promises to give us in evidence that unrestricted influence comes in where there is no rotation. I do not quite know what Mr. Thomson's meaning was when he said that. It was evidently intended to suggest that unrestricted influence does not come in with the Rotation System; but I think all the evidence goes to show that influence has come in to the banishment of individual action on the part of the officers. I must admit that, even under the best circumstances, day labour is not an ideal system. I must admit that influence is brought to bear upon the officers which it is very difficult for the officers to resist, even before this Rotation System came on. For instance, as I said before, I have about half a dozen letters a week from people urging the employment of men. That is not confined to these times of rotation only, but it has always been the case. Now Mr. Thomson holds different views to Mr. Grant as to the nationalisation of industries. Of course, that is not a matter this Board would care to go into; but I want to show that Mr. Thomson and Mr. Grant are by no means in accord, not only in questions of this kind, but with a good many questions that have come before the Board, particularly having reference to the Rotation System and the general employment of men. Then

Mr.

Mr. Thomson is fair enough to say that he could not state whether the men worked properly, because he had only visited the shed since the Inquiry. He states, in his opinion, the Rotation System is a Government institution, and it goes through the institution in the usual "Government stroke" way.

17719. Mr. THOMSON: That is a statement. I did not give it in evidence.

17720. Mr. VERNON: You made that statement when Mr. Howie was giving evidence, on page 951. I think the best advocates the Department has had at this Inquiry have been Mr. Grant and Mr. Thomson. Mr. Thomson is certainly candid, and it is perfectly clear that he has no sympathy whatever with the present state of affairs.

17721. Mr. THOMSON: I have the utmost abhorrence of the system of political influence, and that is the reason I favour the Rotation System.

17722. Mr. VERNON: Mr. Thomson has also made a statement for which I am obliged to him. He said, if you want to do your duty you must break through the regulations. Several instances have come before the Board in this inquiry where officers have had to break the regulations; but it brings on the reflection, "Why should regulations be made that must be broken?" Surely, if it is necessary to break through a regulation in order to do a business-like action, it is time that regulation was overhauled; and when Mr. Thomson gives us credit for trying to do our duty by breaking through certain regulations, I think he has hit a very good keynote which I hope will be considered by the Board when they come to their decision upon this inquiry.

Master Builders' opinions.

17723. I now come to the opinions expressed by other witnesses upon this system. I intend to take the contractors and practical men first, and then the officers afterwards. Mr. Loveridge said he would not have the Rotation System in his business. He considers there is a degree of disability when rotation is in the hands of the society instead of the Department, and the responsible officer would still have less control. In his opinion, it is likely that discharged men on Government jobs would come up again in some other form. He puts down the reason for the excessive cost, after hearing the evidence, to the Rotation System, to political influence in some measure, and to less work being got out of the men than would be got by a contractor. He knows absolutely that men do not work so well for the Government in some branches as for private employers. He does not know that a fixed standard price for labour is beneficial; he thinks a labourer is worthy of his hire. He is inclined to think that on the majority of Government works the men do not work with the same degree of zeal as on contracts. He has frequently kept leading men on after the completion of one job to have them handy for the next. The Rotation System, to his mind, is a disturbing element regarding the cost as compared with the market value. In his opinion, 9s. 8d. is altogether outside the market value. Now, I venture to suggest to the Board that the opinions of Mr. Loveridge here are of the greatest possible weight in an inquiry of this kind. I am not speaking because Mr. Loveridge is present, but he is one of the leading authorities on the application of stone to building. He is known as a fair and talented employer. He is known as a practical man who makes his own moulds for his stone, and a man who has gone through every detail of a contractor's work in connection with stonework, from owning a quarry to the minutest detail of construction, and when Mr. Loveridge, with no uncertain sound, makes statements like those I have quoted, I would suggest they must be listened to with the utmost respect. Mr. Wall, who has done a lot of building for the Government, says he would not like to work under the Rotation System, as the foreman ought to be in a position to put on good men. He considers the right of appeal would interfere with the discipline of a stonemason's shop. Mr. Pringle says he would not undertake work under Government conditions. He further says: "I always leave putting on of men in the hands of my foreman mason"; and then he goes on to give his reasons for the cost of day labour. Mr. McLeod finds the masons have lost the good qualities they formerly possessed, and that the work now costs from 10 per cent. to 25 per cent. more. Mr. Howie went through a long examination and cross-examination, and a great deal of information was elicited from him of which I have only been able to put a few items before the Board, otherwise it would be tedious. He considers working under the Government regulations responsible for that increased cost. Mr. Howie said he would not be satisfied if the Secretary of the Stonemasons' Society provided 85 per cent. of his men. He does not put on men whom he knows would not suit him. He could not expect to build the Hospital at 5s. 6d. if under present labour conditions. He would not try the experiment, and he would not blame his foreman. He could not carry on his business if it were under the same conditions as the Government officials are under. He said he got fully 20 per cent. more out of the men at the Art Gallery than he does now. He admits that the power of dismissal does not really exist if the right of appeal exists. Every man who works faithfully for him would probably go on to another job for him. This arrangement would be advantageous to his output. He said it would not do at all for a workman to tell you that he knew as much about carrying out the work as you did, and to mind your own business. All the men he has ever dealt with in America, Scotland, and here have been glad to receive hints as to how the work should be done. He considers that the possession of knowledge by the men that everybody can interview the Government is likely to lead to passive insubordination and to affect the output. He knows for a fact that men slow down; it is no slander. Mr. Thomson looks upon Mr. Howie as a man with valuable information, who can throw considerable light upon this question.

17724. I now come to Mr. Stuart's evidence on that point. He states he gives his foreman unrestricted control, and that the longer the men work for an employer the better for the employer, and the oftener you draft men from one job to another the more chance of success. He said men had been working with him for sixteen years. He believes this defect in the Rotation System seriously affects Government work. He then gives his opinion on the Rotation System. Mr. Barling, on page 1178, q. 11874, asked Mr. Stuart this question:—

> "*Q.* Supposing I put it this way: Would there be any great difference between a picked man and a man that must be obtained by the Rotation System?"

and Mr. Stuart replied:—

> "I will have to give you a good long answer to that. I mentioned to you before that the biggest hold an employer has over the average man—and, mind you, I am always speaking of average men; I take no notice of these fast men; I am now dealing with average men—the biggest hold that an employer can have over such men is the sort of job that he can give them, and as to how much it is worth to them to stay there. Now, they have at the same time this knowledge that they are subject to immediate dismissal if they do not give satisfaction. Remove that feeling, which I think

think is done by the Rotation System, and you change the conditions altogether. You change them in a way that I hardly feel capable of explaining. You not only give the men the idea that they are there, and can stay there until they are proved to be incapable, which is sometimes a hard matter to do, but they feel that the employer is not their master, and that makes a very great difference in the feeling that the men have while going about their work. They feel they are quite as good as the foreman, and, perhaps, just as good as their employer, and they get that independent spirit that some people take particular pride in, but which is not at all times for the good of the possessor. I know this, speaking now from my own point of view, that sooner than have the Rotation System pressed upon me, I would give up business at once; and, furthermore, although I cannot accurately explain the difference, I know this well, that if I had to employ the men just as they came, and they knew that I had to do so, I could not possibly make my work pay."

Then he goes on further to say that he would rather go and sweep the streets than give way in the manner in which the Department does. Then, another reason why the work cost 9s. 8d. as against 5s. 6d. was because the men took longer over it. He is of the opinion that the Government stroke exists to an enormous extent. His expressed opinion is that the Rotation System is blamed to a large extent because it means political influence. He considers the unions now exceed their legitimate functions. He contends that any meetings held on his premises are within his control. He says he has stopped men from talking. Then he defines "thoroughly disciplined," page 1319, q. 13176.

"Mr. Grant: *Q.* Would you describe to the Board exactly what you mean by the men being 'thoroughly disciplined?' *A.* Yes; I will try to. The first condition existing between employer and workman is this: that the payment shall be so much, and the output such as the workman can do for that money, consistent with his not exhausting himself too much; that is, there is considered to be a certain standard that constitutes a day's labour. That is the first condition. Next, the workman must know that his employer has absolute power of dismissal, without any appeal whatsoever; that, in my opinion, is essential, and a very important matter of discipline, because I have found that the workmen, taking them as a whole, have not those high reasoning powers that will enable them to see that dismissal, or any action against them, is justified, from the employer's point of view. Therefore, it is just as useless for an employer to place himself in a position to explain his reasons to a workman. If the workman, then, has a knowledge that his position depends on the amount of work he does, and the way he does it, and he is part of an organisation which is governed by the employer, he becomes a part of the whole of the machine, as I might term it, and takes his place, and there is no trouble, no friction, no block in the working of the machine."

Prior to this Inquiry, Mr. Stuart held the opinion that while the foreman nominally held the power to discharge, he actually did not hold it, and, of course, since he has been at this Inquiry he has found his opinion very forcibly emphasised. He is emphatically opposed to the Day-labour System, as at present carried out. He looks upon the Rotation System as absurd, and having the most damaging effect upon the community. He says the masons have no more right to State employment than any clerk or farmer. These are the opinions which were expressed by Mr. Stuart, a man who has worked his way by his acumen and his industry to the position he now holds, and his opinions, the same as Mr. Loveridge's, must be given great weight to.

17725. I propose at the next sitting to deal with the evidence from professional officers on the same subject.

17726. Mr. Barling: We will now adjourn till to-morrow at 10 a.m.

[Investigation adjourned till Tuesday, 20th instant, at 10 a.m.]

Mr. Vernon's Address (continued).

Mr. Deane's opinions.

17727. Mr. Vernon: I now come to the opinions given before this Inquiry by professional officers who have had to practically carry out the Rotation System as it now exists. Mr. Deane was the first gentleman called. He, as an engineer, is thoroughly in favour of the Day-labour System as applied to the construction of railways, especially where unskilled labour is employed, and exclusively away from the influence of the societies. I think Mr. Deane took up that position, and he is able to speak not only favourably but almost enthusiastically of the Day-labour System when it is under conditions such as he has found in the country districts with unskilled labour; but in his evidence, when he came to skilled work in the city, he had a very different story to tell. He first of all told the Board that he was in favour of complete control by the officers, without dictation from anybody. He then told the Board it was not possible to thoroughly compete with contractors who would never themselves submit to dictation. The competition was unequal, and he was in favour of the power and the responsibility going together. He referred to a report from Mr. Small in connection with the Sydney Railway Station, in which he (Mr. Small) stated that he had not got the same results out of rotation as he had out of selection. I think the Board has already had before it some particulars from Mr. Small and Mr. Murray bearing on that point. It certainly does not come into this Inquiry, and if the Board do not think it can be taken as evidence, of course I could not ask them to do so; but I referred to it here because Mr. Deane himself mentioned it when he was in the box. He was asked if he had drawn attention to this matter, seeing the difficulties he had been placed in—and he referred particularly to the tram shed at Fort Macquarie—and, in reply, he informed the Board that he had written a number of minutes relative to the matter. Mr. Deane, like myself, had therefore taken steps by drawing attention to the disabilities we were suffering under. He then gave an instance where a man was discharged and brought back, showing that the authority was taken out of the hands of the foreman. He expressed the opinion that men knew they were protected by outside influence, and, therefore, would not acknowledge complete control by their officers. He admitted that some men slowed down. Then he was asked the general question, and he stated he was opposed to the principle of the Rotation System. He also said that if the circular of the 23rd September, to which I referred yesterday, giving the right of appeal, was put into full force, it would very much modify the power of discharge nominally in the hands of the foreman. He is not at all satisfied with the present position of the work done under day labour in the city, and he states it has been interfered with by political influence. Then Mr. Deane referred particularly to the report of Mr. Davidson, the Superintendent of Works,

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Victoria. He did not fully endorse all Mr. Davidson said in that report, but he endorsed those portions upon which this Board is really holding this Inquiry. The opinion of Mr. Deane must present itself with considerable weight to the Board, considering the large amount of interests which are passing through his hands, and the careful and fair way in which he gave his evidence. He had no wish to paint a picture which was not supported by facts. He made no exaggerations, and, being in favour of the Day-labour System, his evidence is all the stronger.

17728. The next officer in the Works Department whom I would like to have called was Mr. Keele, but I did not call him to give evidence because I thought it would be fairer to that gentleman to let him stand on one side. He had been very prominently brought forward in an Inquiry held not long ago into the Fitzroy Dock—the Fitzroy Dock Royal Commission—and I thought it was only fair to Mr. Keele not to ask him to come and give evidence before you, therefore I sacrificed the case of the Department, to a certain extent, by not calling him. If the Board wishes to find out Mr. Keele's opinion and his experience in this matter, I have no doubt the pages of the Fitzroy Dock Royal Commission Report will furnish them with very full and clear ideas as to them. **Mr. Keele's opinions.**

17729. Mr. Wade was the next witness called. Mr. Wade has come very prominently before the Department, being the head of a very important branch in which it may be said a great many of the hopes of the future progress of this State are centred; that is, in the conservation of water and in the proper sanitation of the centres of population. As it happens, he has just been placed in charge of a very large work, viz., the Cataract dam, a work which I may state comes within the influence of the city and the societies in the city. This has enabled Mr. Wade to be able to speak with no uncertain sound. He tells the Board that he has had upwards of two thousand nominations by Ministers to deal with. **Mr. Wade's opinions.**

17730. MR. THOMSON: He qualified that by pointing out they were from Mr. Kidd and Mr. Nicholson.

17731. MR. BARLING: As Mr. Kidd's name has been mentioned, I think it is only right that it should be noted that it was referred to as that of a Member, and joined with Mr. Nicholson's.

17732. MR. VERNON: He was Member for the district, no doubt. I should like to avoid any misrepresentation, but there is the fact that from a political source no less than 2,000 names were sent on for that job, hampering Mr. Wade from the very first. Then, when Mr. Wade went on to give his experience with men who were put on, he gave particulars as to a nominee of this character refusing to go when discharged, he being found to be utterly incompetent. He said the man refused to go because he was under this nomination. He then stated that the inability of his foreman to select makes a difference in the day-labour jobs. That is a general statement which he had to apply to the Cataract, because he gave us evidence, and so did his Resident Engineer, that a large number of experienced men who follow the jobs of this branch round the country, who know the ways of the Department, and who can be depended upon to earn their day's pay, naturally followed to this job, and had to be put on one side. He said this state of things makes a difference of at least 10 per cent. or 15 per cent. on the cost. He is also of the opinion that the selection of men by the Stonemasons' Society is inferior to the selection by the State Labour Board. When I say the society I mean the unions. He is of opinion that if there is a difference in the selection, it is in favour of the State Labour Board as against the unions, because the unions send a man along for the reason that he is a financial member, while the State Labour Board presumably sends a man along because he has been examined as to his qualification.

17733. Mr. THOMSON: I think I will register up there, and see how they will examine me.

17734. Mr. VERNON: I do not think you will be examined at all. I think that is a farce. When Mr. Wade had placed before him the condition of things at the Prince Alfred Hospital, he expressed the opinion that it was reasonable to charge the excess cost of this stonework to the Rotation System, and he considered it would be still worse if the Stonemasons' Society had charge of the full 100 per cent. as against the 85 per cent. at present. He stated it was a difficult matter to deal with the Labourers' Protective Society's steward, who was allowed to remain upon the job until its completion. He said it was a very difficult matter to deal with a man of that kind. He then went on to say that there was no encouragement for good men to excel in their work; and if he were allowed unfettered selection he could have a far better class of men, which would make a difference in the cost of his work. He had further experience that the man who can only get a job through a Minister or a Member is the most difficult to deal with. He said the foreman has no opportunity of inquiring into the qualifications of those men. He is unreservedly sure that he could not carry on work in a satisfactory manner under the Stonemasons' Society's control. He is of opinion that, unless a free hand is given, day labour has not come to stay. He is of opinion that a free hand cannot be given unless under an independent board. He defines a free hand as a foreman putting on the labour and discharging it, with appeal to go no further than the Resident Engineer. He stated that he has pointed out to the Minister from time to time the great drawbacks of the present system. I think I am entitled to say that Mr. Wade, as a practical man, has covered the whole of the ground in dispute. I do not think there is a question, or any side of a question, that has not been answered in a very unhesitating and direct manner by Mr. Wade, and I urge that his opinions must be given very great weight in the consideration of the Board.

17735. We now come to Mr. Stilwell, who is the acting head of the Roads and Bridges Branch. Mr. Stilwell's case is not similar to that of Mr. Deane or Mr. Wade, because he has had, as it happens, mostly to do with purely relief works. Now those relief works do not come under the consideration of this Board, although I claim that the present system is really a relief system, but not in the strict sense in which Mr. Stilwell has been carrying out his work in the country. The Board had a slight insight into the results of relief works, and then Mr. Stilwell's examination was taken in another direction. Coming to the city, Mr. Stilwell made the admission that almost the only skilled work he has carried out was that of the new Glebe Island bridge, and he admitted that for that work he chose the men himself and paid no attention to the State Labour Board or the society. He simply ignored them all, and he said he was satisfied with the results. If I could do that, I should expect to get better results also; but why Mr. Stilwell can avoid regulations and I cannot is a matter I am unable to fathom at all. He admits he has done it, and he says his results were satisfactory; and I think the Board can draw conclusions from that that when a man is not hampered when he breaks a regulation, he is really doing the best for the State. He says that political influence is more or less prevalent, and he has to put on men he would not otherwise put on through it, and those men are kept on longer in consequence of such influence. He is afraid that **Mr. Stilwell's opinions.**

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he will never get a free hand. He would not have had the same results at Glebe Island if under the stonemasons' conditions. He says the right of appeal makes a very great difference in the cost of the work; the discharge of men and taking on fresh men is detrimental. He does not think the foreman makes certain favourites—that is not his experience, but he does think the foreman would keep on men who "slowed down" to save the trouble that might arise from their dismissal. He is therefore of opinion that the foreman would keep on men who had "slowed down" rather than face the trouble which he would certainly have to meet afterwards. He says the influence of "slowing down" by several men is felt adversely by others. He does not think it possible for any officer to get an absolutely free hand so long as he is subject to political influence. He would not be so successful in the country works if the secretary of the union frequently interviewed the Minister with reference to union claims. As I mentioned before, Mr. Stilwell only gave the Board a slight insight into his country works, but I believe it would be a very interesting subject to follow out, and I believe the Board would get some very extraordinary evidence if it went into the cost of some of the country works; but, of course, I have nothing to do with that, and I must leave it.

Mr. Symonds' opinions.

17736. Mr. Symonds was then called. He is the Resident Engineer at the Cataract, and I think the attitude which this junior officer took before the Board is one which will inspire considerable confidence. I have seen him since, and I judge myself that he is well able to handle men. I saw his work on Saturday last, and I came to the conclusion that he is extremely well fitted to handle men, to get the best side of the men, and to get the best work out of them. I, therefore, think what Mr. Symonds told the Board is really well worth consideration. He says that the adoption of the present system monopolises his time to a very large extent; in fact, to an improper extent, leaving him less time to attend to the arrangements of his work, and to visiting those works which extend over 7 miles of country, and require the utmost good management and attention. He says his time is taken up wrongly, but he has to do it. Then he has the risk of the men turning out right or wrong, and, of course, the consequent loss which will arise on account of strangers being sent to him. He supports Mr. Wade by saying he can always put his hand on tip-top good men. He said he has had occasion to send men off who have been discontented and have affected the discipline. He also said that he has had a lot of men sent to him through influence who seem to think they can ride rough-shod.

17737. MR. THOMSON: I think he qualified that by saying they were doing piecework.

17738. MR. VERNON: Probably he did. He said his trouble has always been with what he calls "political men," and if he had an absolutely free hand to pick men he could do his work for 10 per cent. less. Now, 10 per cent. on the Cataract dam expenditure, which is mostly a labour expenditure, with the exception of an engine plant and the supply of materials for tramway and the necessary scaffolding and cement, would come to a very large sum, when it is considered that that work is going to cost something like a quarter of a million of money. Mr. Symonds, who is in the thick of the work, says that if he had an absolutely free hand to pick his men he could save 10 per cent. on that work.

Government Architect's opinions.

17739. I now leave the professional officers from the other branches and come to the officers of the Government Architect's branch, and I would like to place before the Board shortly what they themselves have to say in the matter. I stated myself that I arrived at the reason why the Rotation System had, in my opinion, caused this extra cost, after making every investigation both into the service of the officers, the supply of the material, and the capacity of the plant, and I was forced to the conclusion which I placed before the Minister on the 12th February. As a business man, I consider the system unsatisfactory. I said there was no incentive on the one hand for the men to excel in their work, and on the other practically no fear of dismissal. My duty was to carry out the policy of the Department and the instructions which I received through the Under Secretary to the best of my ability, and to report the results, which I have done. I experienced no difficulty with the employment of highly-skilled men when we had the works at the Government Printing Office, the Art Gallery, the General Post Office, the Custom House, and other works, and I expressed the opinion that if I had the power to select the men I should get better results than I got at the Hospital. I traced Mr. Grant's statement that the men had contempt for the foreman through the extraordinary position in which that foreman was placed—a powerless position under this Rotation System. Then I pointed out that great care, so far as Mr. Ryce is concerned, has been exercised, because I showed to the Board that while about eighty men were employed, Mr. Ryce had turned away thirty-four for reasons which were all shown, so that he had really exercised, so far as he could, his authority up to the extent of about 40 per cent. This shows that a very large percentage sent by the society, after very little investigation, were found to be unsuitable. Mr. Ryce really did his duty very well indeed in weeding them out to that extent. I then urged the retention of the names of those men as confidential. A good deal was said as to treating matters of that kind. The State Labour Board began wrongly in damaging the character of the men by using a certificate, and very properly that was withdrawn as soon as it was found out what it meant. I then objected to Mr. Grant obtaining the names of these other men. The Board supported me in that, and Mr. Grant appears to have seen the fairness of my objection, because he never pressed it. I then gave an instance of loss through a setter being sent to us through the State Labour Board. I refer to the new Police Buildings, where it cost us £3 to put right what he had done. That occurred entirely through the system which we are now following.

17740. MR. THOMSON: There is no evidence about that.

17741. MR. VERNON: I only made a statement about it, but it is a statement which I must ask the Board to accept, because I went and inspected what had actually to be done.

17742. MR. THOMSON: I had a look at it, too.

17743. MR. VERNON: I then pointed out to the Board that in my original estimate I in no way provided for any expenditure under the Rotation System. I am entitled, I think, to put this very clearly before the Board, and whatever estimate I originally made, or my officers made before me, was made purely and entirely on business and commercial lines as if the work would be tendered for; therefore, although my estimate and the ultimate cost show a very great difference, I claim that my estimate is based on a true basis, and the excessive cost has come from the Rotation System.

Mr. Cook's opinions.

17744. In the opinion of Mr. Cook, who has had a good deal to do with this work, the cost of the stonework is excessive. He does not consider the mode of employment of men a sound one. He said if a foreman cannot select his workmen he has not the same control as one who can. He reported the excessive cost to the Government Architect as soon as he found it out. He said that Mr. Ryce made many

many verbal complaints, because good masons were applying to him for work on the job, and he was not able to put them on. Then Mr. Cook himself complained that if inferior workmen were sent to him from the State Labour Board he had no option but to send them on to Mr. Ryce to put on. He admits that he did not exercise any refusal; he would not refuse because of the superior authority over him. He said it was not his right to refuse them, he had to send them on to Mr. Ryce to find out what they were. He said Mr. Ryce had to take his men under the Rotation System, and that that was not the custom of a contractor, with whom it is a matter of selection. He is of the opinion that this had the effect of lowering the general standard. Mr. Cook then gave an instance in which a confidential report *re* a crane driver had been handed over to the man interested. He pointed out the difficulty with officers giving confidential reports, if they were not in some way or other protected against their being made use of. He then explained the difference between unsuitability and incompetency, and stated that it would be unfair to tell a man having the former qualification that he was incompetent. There is a great distinction between the two, and yet in both cases these men had to be put on the work. Mr. Cook gave his opinion as to the possibility of carrying out work cheaply if the Rotation System was abolished.

Mr. Ryce's opinions.

17745. Mr. Ryce said if he had a perfectly free hand he would expect to get better results. Under the present system he has to take men as they are sent from the State Labour Board and put them on for a trial. If no trial was given he would then have considerable trouble with the Department and the Union. Then, to show the absurdity of the thing, he has had to give a trial to men whom he knew to be incompetent. He would not make such a statement as that unless he had some experience of it. He has a man working for him now whom he knows is antagonistic; he cannot say he is incompetent; he would prefer to be without him, but he cannot. This man has always taken the opportunity of picking at him, and he said the other men must be blind if they cannot see this man's attitude. He says this affects the discipline of the whole body. He has asked the Department without success to transfer this man. He has had to take on men who, in former times, he has discharged for incompetency. He reported to Mr. Cook on the 14th February his reasons for the extra cost of the stone, as set forth on pages 31 and 32 of the evidence, showing clearly the position he was placed in, and the difficulties he had to encounter.

Mr. Marsden's opinions.

17746. That closes the evidence from the officers in the Department who practically have had to bear the brunt of this present system. The Department brought from Melbourne an experienced officer, Mr. Marsden, who gave this evidence. He said he had from thirty-six to thirty-seven years' experience; he considered the excessive cost at the Hospital must be sought in some other direction than in the actual dimensions of the stone. He said day labour was not adopted in the Public Works Department in Victoria except in small jobbing works, and the control and engagement of the men was in the hands of the Chief Architect and his Officers. He considered the state of affairs in this respect in New South Wales undesirable. He further expressed his opinion that if officers cannot do as they consider desirable, they cannot be held responsible, under the circumstances, for good results. He said that a Government Officer, even if not doing his very best, is not so liable to be dismissed as under a private contractor. That was an expression of opinion which he gave in reply to Mr. Pringle on page 1445. He said, "a workman under a private contractor knows that unless he does his very best he is liable to go and make way for another man. In the Government Service a man, even if he is not doing his very best, is not so liable to go." He further said that is one of the weak points of the system. He is of opinion that in regard to the 85 per cent., if the reason for dismissal be given, it would be argued out and fought, meaning it would be a very undesirable thing. He considered the claim of the Society for 100 per cent. unreasonable. He is of the opinion that the tendency of uniformity in wages prevents a good man from doing his best when alongside another who does not. He said the foreman, if obliged to put on men without knowing them, and afterwards dismissing them, was another factor in the excessive cost. He expressed the opinion that none of the men could be dismissed in view of the right of appeal, and there was a difficulty in proving reason for dismissal in cases of that kind. He said the foreman would have to make the best of the condition of things, and he gathered from the evidence that the foreman does not care to dismiss, because there might be an appeal against him at once. He insists that the responsible officer should be the person to engage, and it should be done through the head officers. Then he says, "it appears to me that the so-called power of dismissal dare not be exercised." Then he went on to say that the day labour in Victoria was not popular, their opinion being it was not economical. The Rotation System may provide inferior workmen, and it keeps good men out of the work for a time. In Victoria the Minister makes no alterations varying the existing order except through his professional officers. He knows of no instance contrary to accepting the advice of his professional officer, and he thinks to do otherwise would disorganise the Department and the officers would lose heart.

Mr. Dumbrell's opinions.

17747. Mr. Dumbrell, who may be considered as a witness hostile to the attitude taken up by the Department, admitted that men should not have the right of appeal after dismissal. That is his own opinion. Then Mr. Dumbrell curiously enough fell into the same attitude, which I am afraid the whole of the men fell into, and that was this: He objected to supply Harding with information about the stone. He and all the others took up a hostile attitude against Harding collating that information. He said he would not supply it himself, and that made it a very difficult matter for the timekeeper to collate the information which was intended for this Board. Mr. Dumbrell fell into that hostile attitude by force of example, by force of the surroundings.

17748. Mr. THOMSON: He fell a victim to his environments.

17749. Mr. VERNON: You are quite right. You express it so much better than I do. He takes up a more defiant attitude. He claims that the masons should please themselves about it, so that he has not only fallen into that attitude, but he is defiant. He admits he gave no assistance to Harding.

The Under Secretary's evidence.

17750. Now, gentlemen, I come to what I call the official evidence which was given as to this system, as distinct to a certain extent from the evidence of those who have to practically carry out the work. Naturally, I first of all refer to the evidence given by the Under Secretary, the head of the Department, whose regulations, of course, we do not question—we must not question—but we carry them out loyally to the very best of our ability. The evidence of the Under Secretary was given in the form of a statement, and that statement, although it gave the Board a certain amount of information, was absolutely beside the main question. The Board was informed as to the circumstances under which the contractors did not tender—it was very good information, and I think the Chairman was glad to obtain those particulars, but there was not one word as to the subject before the Board for

inquiry

inquiry. There was not one word about the merits of the Rotation System or about the State Labour Board. It was a statement as to the circumstances under which the contractors did not tender. I do not wish to speak disrespectfully in any shape or form, but it does look as if this was a red-herring drawn across the path of the inquiry; and, more than that, the contractors actually followed it in full cry, and the Board was left with really no information from the Under Secretary as to his advice to the Minister, or as to his reasons for the adoption of this particular system. The Board was left entirely without that, and the contractors were in full-cry after this red-herring which was drawn cleverly across their path. The real evidence of the Under Secretary came out in cross-examination, and wherever the Under Secretary's position as Under Secretary is in consideration, or wherever any opinion is expressed by him as Under Secretary, we abide loyally by it, but wherever he expresses a professional opinion then I feel I am doing no injustice by claiming that the professional officers, Mr. Deane, Mr. Marsden, and myself, should be heard even before Mr. Davis, as professional officers. Personally, the greater part of my professional career has not been in the Government service; it has been in private practice, in London and in Sydney, and I must, in my time, have picked up—or I ought to—a considerable amount of judgment, which the exclusive training of a Government service does not possibly give one the chance to acquire; therefore, I would ask the Board that whatever opinion the Under Secretary has expressed, from a professional point of view, must rank with the evidence given by other professional men, and no more. Mr. Davis, the Under Secretary, told the Board it was very difficult to say if the Day-labour System was satisfactory from a financial point of view. He is not certain whether it is satisfactory or whether it is not. He does not understand the Government stroke. Now, we professional officers unfortunately do understand it, but the Under Secretary does not, so he says. "He has had very little to do with the Rotation System." Unfortunately, we have had a great deal to do with it; therefore the Board, in coming to their decision, must take the opinions of these officers who have had a great deal to do with it. He "does not think it entirely responsible for the excessive cost of the stonework at the Prince Alfred Hospital"; he "thinks there are other causes," and then he "thinks it would be very difficult to find out any particular cause." So, you have not much information from the Under Secretary as to the cause of the excessive cost at the Prince Alfred Hospital. In his position, occupied as he is in the general control of a large department, it is impossible for him to be able to put his hand upon the difficulties, the same as his officers who are mixed intimately with, and deal with, these matters, and therefore he tells you, although he does not think the excessive cost is entirely due to the Rotation System, he "thinks there are other causes," and he says it would be very difficult to find out what those other causes were. He is disposed to think it lies in a number of causes, but he does not specify them. Then he tells the Board he was not consulted by the Minister *re* the 25 per cent., and he has no idea what led the Minister to fix it. So that the Under Secretary had no opportunity of advising the Minister as to what he should do in that particular case, and, further, he has not formed any opinion as to what percentage of selection should be allowed to his officers. I must confess that I am a little disappointed, because I was hoping the Under Secretary would say that the selection of the whole of the men should be in the hands of the officers, and to my mind it is disappointing that we cannot have a direct opinion before the Board to that effect; but Mr. Davis has not formed any opinion as to what percentage should be given to us. He is of the opinion that the stonework is too high when costing more than similar work under the contract system. Mr. Davis is clearly of the opinion that if work costs more than under the conditions governing the contract system it is too high, and there must be some reason for it. He states that unless day labour can compete with contract work, then necessarily it must go to the wall. Then he says there is no particular luxury in carrying out work by day labour. That, the Board will see, is the evidence which the Under Secretary gave, and it does not help his officers very much; but still, I think it may be gathered from that, that the Under Secretary is in a position in which he must be extremely careful. He has the Ministerial instructions and policy to see carried out on one side, and he has the officers on the other side to carry out the duties which he passes on to them, and of course it must be recognised that his position is one of considerable difficulty at the present moment with regard to this matter. It may be presumptuous for me to refer to a position of that kind, but I take it—particularly when professional matters are referred to—there is no distinction between the Under Secretary and the professional men who have come before the Board, and I am quite sure Mr. Davis will absolve me from any questioning of the evidence which he gave to the Board. I think I have a right to analyse it as I have done, and to show the Board that he does not help it very much in its deliberations.

Mr. W. A. Smith's evidence.

17751. I now come to the evidence given by Mr. W. A. Smith. Mr. Smith is a hard-working officer, thoroughly relied upon, a man who has the respect of his brother-officers and the confidence of the Under Secretary. But, he came here and made one very fatal mistake. He came here—and the evidence will back up my supposition—to give an official opinion, and before he had left the box he had given his own private convictions which, the Board may recollect, were absolutely contrary to the former It was a painful position for Mr. Smith to be placed in. I came here to give my honest convictions, and I am sure everybody else did, and if Mr. Smith makes an exception he must take whatever consequence there is attached to it. We all came to speak the truth, and I am sure the Board will have in their recollection how, when Mr. Smith made an effort to give what he, perhaps, might have considered to be an official opinion, it lamentably broke down when he was put under a very severe cross-examination.

17752. MR. THOMSON: Do you mean a political opinion and a private opinion?

17753. MR. VERNON: No, official; not political. Mr. Smith gave us the history of the State Labour Board, of which he was chairman, and which he worked very hard to get into shape; and then he expresses the opinion that the 25 per cent. is quite a fair selection for the officers. He admits at first the officers had a perfectly free hand in the selection of the men, but he again expresses the opinion that it was quite right to bring that free selection down to 25 per cent. He considers that the Rotation System can be very well adopted with that 25 per cent. Of course, the 15 per cent. came afterwards. Then he again confirms his opinion about the 25 per cent. No less than four times does he hold to the opinion that 25 per cent. was a sufficient allowance for the officers. Then he begins to admit that even with the 25 per cent. there is a possibility of the work being hampered, particularly so towards the close of the job. Then he admits that if 100 men were asked for, it is quite possible that an inferior lot of men might come in a bunch in that 100—he said it might happen, and of course be to the detriment of the work to which they were sent. Later on he still claims that the officers would not be hampered if they had 25 per cent. choice. Then, when he is asked as to the internal organisation and arrangements of the Board, he cannot recollect

recollect the inspector refusing to pass a single applicant He admits that there is no real examination of these men at the first. Later on, he points out to the Board that although this happened at the beginning, better results were obtained afterwards, and the inferior men were expunged. I think Mr. Smith was right about that, because, generally speaking, there was a cleansing of the lists in a rough way, but not anything like the extent which we require for skilled men. Mr. Smith is an officer dealing with unskilled men, and he cannot be expected to know the distinction between the men that we have to know. I do not suppose that Mr. Smith has anything to do with a carpenter as distinct from a joiner. He has no need to trouble about that, but my officers have, and therefore the statement that the list is improving would not affect these distinctions which we are necessarily obliged to consider in our highly skilled work. Then the Chairman asked him a very straight question, and his answer to it was this: "It would be very hard to say if I would advocate the Rotation System as a contractor." He then admitted to the Board that if given a free hand to carry out work he would not select by rotation. He stated there was no need for the Rotation System while men were to be had for the asking. He admitted that 85 per cent. were put on quite irrespective of their qualifications. He then gave evidence as to Inspector Dixon examining the men, and he admitted that so far as the stonemasons were concerned Inspector Dixon had no right to speak to a single mason; he had no control over the qualifications of the masons. Mr. Smith then followed up the history of the reduction of the 25 per cent. down to the 15 per cent., and he stated that the reduction was through the representation of the Stonemasons' Society, and in this case the Board pointed out it was inadvisable. Further on, he still adhered to the 25 per cent. as being a fair proportion, but he could not say when he formed that opinion. He had no idea when he came to that opinion, whether it was at that time, or whether it was later, or whether it was quite recently, but he had so emphatically stuck to it all through the Inquiry that it naturally led to his being asked that question. He considered a foreman in charge of a building should not have the full power to select, and he gives a very curious reason why the officer in charge should not select. He says it is because it would make too much delay in getting men. Well, that is a very very weak reason why the selection should not take place by the foreman, particularly after Mr. Wade told the Board that he had good men at the rate of about thirty a day coming to him at the Cataract for selection, and no time would be lost in putting those men on. Then, when Mr. Smith was pressed as to why an officer could not get his men, it may be recollected that Mr. Smith failed to give an answer. Afterwards he admitted that it would be better if an officer could select all his skilled labour, and, in reply to Mr. Grant, he said that the foreman can discharge men if he thinks they are unsuitable—at least, can suspend them, and, in some cases, can dismiss them, showing there was a doubt as to what he could do. He said he had not conferred with any officer relative to the 25 per cent., showing that it is entirely his own opinion, and one may gather from that that it is quite possible the remainder of the Board may have an entirely different opinion altogether. He further admitted that the best possible results are occasioned when not hampered by the Rotation System. He admitted that the masons for the Hospital are not examined as to competency by the State Labour Board so long as Mr. Grant sends them along, that being quite sufficient. He said the prize for a man to work for who has done his best on a job, is the chance of getting put on to another job under the 15 per cent. regulation. He then admitted that Dixon's examination of the masons was only verbal, and that Dixon could not refuse masons if sent by the Society. He further admitted that the placing of the whole 100 per cent. would be detrimental if the men selecting them were not competent, and he considered that the selector in this case should be responsible to the Department; and he then admitted that the Secretary of the Stonemasons' Society was not responsible to the Department, and, therefore, he did not approve of the 100 per cent. concession. He further admitted later on that the foreman, being responsible, should certainly have the power of putting his men on at the Hospital, and he admitted a loss in returning unsuitable men. Now, that is the evidence of Mr. Smith, and I think the gist of his cross-examination is a matter which the Board will take into its consideration more than the evidence he gave in his examination in chief.

Mr. Mack's evidence.

17754. Mr. Mack was then called in, but I am not going to take up the time of the Board with his evidence, because it simply bears out the history of the State Labour Board. There is nothing of colour in his evidence, but simply information which the Board was desirous of having, and, I think, which he gave to the Board very clearly and very fairly. To a great extent, he admitted pretty much the same as Mr. Smith. He could not point out any power given to the Board to send back incompetent masons if forwarded by the Society, and he admitted, under the circumstances, the Board simply acted as an agent. That is a true note as regards the Board; it is really an agent more than an office, to assist the officers in obtaining the men they require. It is a mechanical agency to send the first man on the list somewhere.

Employment of Bills of Quantities.

17755. There is one little side subject in connection with the Inquiry which the Board should have clearly fixed on its mind, that is the principle underlying the adoption of the Bill of Quantities System. I think it has been shown to the Board that a right course was adopted in this case, that well-known and responsible quantity surveyors were employed, and their work was of a reliable character, and as they were employed any responsibility with regard to the quantities must be necessarily removed from the shoulders of the officers on to the quantity surveyors. Mr. Loveridge raises no objection to the quantity surveyors. He said he did not use a bill of quantities himself, but it is the ordinary practice that a bill of quantities supplied from the Government Offices, or from a large private firm, is always taken by the contractors as the basis of their tender. Then Mr. Loveridge acknowledged Mr. Pate to be a qualified surveyor, and he understands that the form of quantities, used fully, provides for all labour required on these stones. The Chairman at this stage considered that this was one of the crucial points in the investigation—that is, that the surveyor in cubing up his stone in the bill of quantities measures up all his labour—because it is apparent if the surveyor does that the size of the stone is immaterial; they are increased in bulk in accordance with the small stone,, and if that was not done, of course the contention of Mr. Thomson would be that we would not have very good and solid grounds to rest upon.

17756. Mr. THOMSON: In this case he did not measure the beds.

17757. Mr. VERNON: The beds are always specified. The Chairman considered that the crucial point in the investigation. Mr. Cook then states that nearing the end of the job it is found that the stone comes as nearly as possible to Mr. Pate's estimate in the bill of quantities. That is convincing proof as to the correctness of the quantities. Mr. Marsden states that Pate and Anderson are recognised

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as most capable quantity surveyors, and he gives evidence as to the recognised forms of bills of quantities, and as to their similarity to those used in Melbourne. If you recollect, Mr. Marsden had with him a bill of quantities he brought from Melbourne, and the comparison between them was almost item for item identical, showing that the same system is adopted in Melbourne as in Sydney, and that it is the recognised form. He said he would accept a bill of quantities from these surveyors for pricing purposes. He considers the Department adopted a very proper course in accepting this bill of quantities. He said in pricing a bill of quantities you are doing the correct thing in the fairest way. The cost taken with the Prince Alfred Hospital quantities is legitimate and in the proper way, thus reducing every item to a common measure. He would take the quantities as the basis for an estimate.

17758. Mr. Thomson then admits having gone through the priced bill of quantities carefully, and worked the prices out in detail; and I think Mr. Thomson stated that in making a general average it came out at about 6s. 3d.

17759. Then there is further evidence from Mr. Pate showing how he made his reductions, and stating that while 6s. 1d. was retained in the bill of quantities owing to the reduction, the amount that was omitted amounted to about 6s. 5d., clearly showing that the 6s. 3d. was still the average between those transactions. Then Mr. Wall, Mr. Ryce, and other witnesses gave evidence about the quantities, all showing that this bill of quantities could be taken as an accurate and correct basis upon which the Board could form its conclusion as to the quantities and pricing of those quantities.

Personal characteristics of Mr. Grant.

17760. I now come to the more personal points in the evidence given by some of the witnesses, and I am going to refer particularly to Mr. Grant. The Board has had a very good opportunity of estimating the character of Mr. Grant. I wish Mr. Grant was here, because I do not like to say anything behind his back; but Mr. Thomson is here, so I may take it that is the same thing. Mr. Grant has very great characteristics in a certain way. He has some very extraordinary views, and he has, occasionally, a rather bombastic manner. I do not think there is any great harm in Mr. Grant. Since he has been here I have learnt to understand him a little better than I did; but there he is in control of very large affairs. Now, he suffers at times from uncontrollable imagination, and my authority for that is Mr. Thomson. With all that imagination he is only nominally the mouthpiece of the Society. Mr. Thomson again. Mr. Thomson lets the cat out of the bag as regards Mr. Grant.

17761. MR. THOMSON: I meant he was the nominally paid official mouthpiece.

17762. MR. VERNON: I take it he is only a nominal mouthpiece. Here is Mr. Thomson again; he is not speaking for the Union, he is only giving his personal opinion, so that Mr. Grant's position here with regard to the Union is a very slight one. I am going to quote Mr. Thomson a third time; he says that the position of Secretary does not carry much weight, and then further on he says the Secretary's opinions in the public Press are his own unless otherwise instructed, and he (Mr. Thomson) is not aware that he (Mr. Grant) has ever had instructions to express himself in the Press.

17763. MR. THOMSON: I think I qualified that by pointing out that no secretary should be allowed to air his own opinions as being the opinions of any body, unless specially instructed.

17764. MR. VERNON: I quite agree with you. Mr. Thomson has shown to this Board the comparatively weak position which Mr. Grant holds as regards his Society and this Inquiry.

17765. MR. THOMSON: He was given a free hand here.

17766. MR. VERNON: But we think Dumbrell came along with him. I want the Board to look at the matter from this point of view: Mr. Grant, so far as the evidence discloses, has been twenty-two years in Sydney working as a stonemason; he is acknowledged by everybody to be a first-class stonemason, but there was not one tittle of evidence that he had ever been placed in control of even another man. He has never been in the position of a foreman. There has been no evidence given before the Board to that effect. I think he has generally worked on his own; he has done his work, and he has not taken on himself the responsibility of this position. But, being the secretary of the society, and being able to use there a certain amount of influence, what is he now? I said once that Mr. Grant was one of the most powerful men in Sydney. I am not going to recall that statement for a moment, I am only going to say that when I made use of the word "powerful," I meant powerful in this particular direction. Under the system which has now grown up, here is Mr. Grant, who has never controlled men in his ordinary occupation, placed in a position where he controls the engagement of labour to the extent of thousands and tens of thousands of pounds. I venture to submit to the Board that this is an extraordinary position. I do not think I am forcing the meaning of the word when I say that he can control the engagement of labour, because it is a fact, and it is not only the Prince Alfred Hospital, but every stonework job the Government undertakes is just the same, and Mr. Grant is the centre pivot upon which the whole of this work must revolve, yet he has never had control of men. Then, to show the ambition of Mr. Grant, he is not content with things as they are, but he wants the lot, he wants the whole 100 per cent. The officers are only allowed now 15 per cent., and he wants that too. Fortunately, the Minister has laid down that he is not going to allow any more concessions unless under the ruling of the Arbitration Court.

17767. MR. THOMSON: His appetite is going.

17768. MR. VERNON: There is nothing to feed it; the plate is empty. Then, when Mr. Grant climbs his high pinnacle, how does he consider his responsibility? He says it is no concern of his whether the work pays or not. That is Mr. Grant's statement, although in this responsible position in which blind fortune has placed him. It is no concern of his whether the work pays or not. He has been cautioned; the Minister told him at a deputation that if he were not careful he would kill day labour; but he comes up smiling at every interview, and he gets the same caution, but it does not seem to hurt him in the slightest degree; he rather takes it as amusing; it does not seem to enter his mind at all—on the contrary, he considers the employees, so that they won't in any way injure day labour. That was intended to convey a cynical meaning that whatever happened to day labour, he would take care of the men. Then Mr. Grant tells the Board that private enterprise is quite unable to keep the men employed. That is not a matter, of course, for the Board to deal with; they are not inquiring into a very wide question of that kind.

17769. Mr. THOMSON: He qualified that by stating it employed them all.

17770. Mr. VERNON: He stated "We claim that we have a small share in putting men on, because we have developed the idea that we are citizens." Then with a wide sweep he demands the control of all men and the entire abandonment of political influence. So that Mr. Grant's horizon is a very wide one

one indeed. He admits he has got over the notion that he should not touch politics. He advocates that the men should be consulted before a man is taken on—an extraordinary condition to lay down. He puts priority of registration before capacity. He claims that the men are as good judges as the foremen. He claims the right of all masons to State employment, and then he gives you in his singular way how he would treat a non-unionist. He was going to treat him in such a way that he would not be a non-unionist more than twenty-four hours. Then he states he does not think there is anything wrong with the economic conditions of the State, and he considers the full control by the Union a mere bagatelle. If that is a mere bagatelle, I do not know what his views are beyond that. Occasionally Mr. Grant is a little more careful in his evidence, and he admits that competency and industry must have a material bearing on the cost. Then it may be remembered that the Chairman put, I think, three or four times a very pointed question to Mr. Grant, and it was to this effect: "If you were pecuniarily interested in carrying out a work, would you use the Rotation System," and Mr. Grant said no, he would not. Now he repeated that twice, and then the meeting broke up, but in the meantime before the next meeting was held, Mr. Grant reviewed his answer —(interrupted).

17771. Mr. THOMSON: He readjusted his intellect.

17772. Mr. VERNON: He readjusted his intellect, and finding he had made an admission, perfectly correct and proper in itself, but which did not help his case one little bit, he came at the next meeting and tried to qualify it, and he was allowed to do so. But I think it was laid down that alterations in the evidence could be made only where they affected facts which were not perhaps clearly stated, but in matters of opinion, and deliberate expressions of opinion, after being asked three times, it would be inadmissible to alter anything, therefore, I am going to urge before the Board that Mr. Grant really does believe that if he were financially interested in any stonework, he would not use the Rotation System. He claims he is in favour of extending the Government functions as an employer in every direction on account of the inability of private enterprise. He claims the Minister as their employer, and there is no need to interview any of his officers for employment. He is perfectly at liberty to hold an opinion of that kind, but the only thing is whether it has the right to be exercised. He claims absolute control of the regulations of the stonemasons, and in the same breath he admits that the contractors have a perfect right to select what men they choose. He claims that a man discharged should know the reason why, and he claims the right of appeal. Now, time after time, he tried to impress upon the Board that although the foreman could not choose his men he had the right of dismissal, but on page 694 Mr. Grant admitted that this right of appeal completely upset the proposition he had laid down so often. He adheres to the refusal of masons to be instructed by Mr. Ryce. Mr. Grant then gave a little information as to how to deal with men who chattered or talked while at their work, who did their work, but had a disturbing influence on the others. As it happened, although it was quite unintentional on my part, it appeared to have a personal connection with Mr. Grant himself, and for that reason I do not wish to touch upon it, because I do not think it would be fair, still we had that difficulty on the job. Then Mr. Grant differs from Mr. Thomson as to prices. He admits there were no exceptional circumstances surrounding the cost of working on the job, and he does not profess to state the time it took to cut the stone, because he is not an expert. He also admitted he was unable to make up a bill of quantities. He also admitted to the Chairman that the extra cost did not necessarily govern the estimate. He admits making a good many visits to the Department to enforce his views.

17773. Mr. THOMSON: Instructed by the stonemasons generally.

17774. Mr. VERNON: I only take what he says. He thinks it is up to him to show the Minister every day that he is wrong in forcing men to apply to officers for work. You will see from that that Mr. Grant is Instructor-General to the Department, and he goes to headquarters to instruct the Minister. That is the attitude taken up by Mr. Grant, and no wonder, considering the position in which he is placed. He then states he believes in political influence; he holds Labour Members in reserve in case he wants them. Mr. Grant has got the most refreshing candour of the many witnesses who have been before this Board. It is a candour which is refreshing because it is so open. And for that reason I sometimes think he is not serious over some of his remarks, but still they are made here, and it is my duty to bring them before the Board so that they can value them. He said it is the usual practice of the Society to go to headquarters—that is, to the Minister. He admits pressing the Minister for interviews since this Inquiry began, and it is there I seriously blame Mr. Grant for not leaving things alone when this Inquiry was going on. He was pressing the Minister in connection with this matter and making ex parte statements—I know as a fact—and more than that he did it after this Inquiry began, which was very wrong of him. He is harmless to a great extent, but he is dangerous when he takes a move of that kind. Then, although he goes to the Minister so often he says "I do not pay any attention to the Minister's warnings," and he admits approaching the Minister with increasing frequency.

17775. MR. THOMSON: You would not expect him to deny that when you had the proofs in the office.

17776. MR. VERNON: No, the proofs were not in the office in this case. He claims a majority in favour of the clean Rotation System as opposed to the dirty Departmental Political System. He claims the Rotation System as securing equal rights to taxpayers, and he calls the regulations by which overseers could put on 25 per cent. obnoxious and insulting. I do not want to take up the time of the Board, but Mr. Grant puts in eight statements showing the cost of the stonework, each intended to show that the Department had fallen into grievous errors in its calculations. At the time I used a very useful metaphor, and I asked him if they were loaded. I was of the opinion that he knew nothing about them, and that they were put into his hands by Mr. Thomson to fire off at the Department, and it may be within the recollection of the Board that they went off—but in a wrong direction altogether. My metaphor turned out to be absolutely correct that Mr. Grant had been entrusted to fire them, but he did not know how to handle them. In one case he brings down the comparison to that on half a cube foot of stone, and if the Board will turn to that diagram of the Waverley stone they will see that there is no such thing as a half cube foot in the building at all. Further, if you refer to the Purgatory, the smallest possible quantity was more likely eleven-twelfths of a foot. Mr. Grant took the half cubic foot, and then by a mistake which he fell into he began to put certain half-foot prices to it, but he got evidently tired of that, and began to put foot prices on. That one instance shows the fallacy, which I think I clearly proved to the Board, went through the whole of those statements. 17777.

17777. MR. THOMSON: You believed you punctured our tyre.

17778. MR. VERNON: I think I did, because Mr. Grant was using the Rotation System costs and putting them into estimates showing clearly that he did not know what he was about, and that he was handling something that was beyond him.

17779. Towards the end of the Inquiry it was determined that twenty classes of sizes should be put in, and Mr. Loveridge should put a price against them. That was done, and I refer to that in Mr. Loveridge's evidence. Both Mr. Grant and Mr. Thomson expressed themselves as satisfied if Mr. Loveridge priced those selected items, and they said they would be more satisfied if the number of cube feet in each were stated. Now that was a fair offer to make by Mr. Thomson and Mr. Grant, and it might possibly enable the Board to shorten its consideration. At the end they still gave us further help by stating that they had no cause to complain with regard to the fullest opportunity being given to them to bring forward evidence. We had a good deal from Mr. Grant as to specialists, but I think that has been so fully gone into that I need not take up the time of the Board any more.

17780. I have practically gone over all the evidence given by Mr. Grant that bears upon the case, and I do not think the Board can put any value whatever to any pricing that Mr. Grant made. I think the Board will take into consideration what he lays down for the guidance of this country. I hope and trust the Board will see that the accidental position which Mr. Grant has been placed in has given him an enormous hold upon the stone industry of this State. Whether for good or whether for evil it is for the Board to determine.

Mr. Thomson.

17781. Now, as regards Mr. Thomson, when I came first to this Inquiry and met Mr. Thomson I must confess to a little irritation between us, but since then I have learnt to respect him. I never came across anyone who fought so hard for his case and so well. I knew perfectly well the difficulties Mr. Thomson had. I venture to say I knew the weak case he had, but I think you must all admit that his case has been handled with extreme ability, and with an increasing good feeling amongst those who are before this Board. I think that is an extremely satisfactory position for us to be in, and it will very likely enable the Board to consider some points more easily than they otherwise could have done. Mr. Thomson took up mainly the practical cost of cutting stone, and we must all give way to Mr. Thomson in his opinions on that point, because he is a practical stonemason. He has the sturdy independence of his race, and he has never attempted or cared to take up Government work, but he has kept himself out amongst the ups and downs of contractors' work and maintained his independence. The independence of Mr. Thomson, I take it, in that respect, is very different to the independence which Mr. Grant practices with those men who are employed by the Government. That is a different sort of independence altogether. One is the independence of a man who can fight his own way in the world, and the other is that of a man who ignores the authority over him, as the men Mr. Grant sent to us have done. Mr. Thomson from his own practical knowledge has shown, particularly with regard to the "Crystal Hotel," prices which are infinitely below the Hospital, and the explanation is he was working on a contract work and he did the utmost he could as a fair and straightforward man. When he comes to take up a comparison in other cases with the Hospital, Mr. Thomson invariably chose exceptional stones, and he tried to build up from one stone a theory as to the whole. Now, I think, with all due deference to these calculations, which may be perfectly correct with regard to actual time taken on the stone, it has been laid down over and over again that a building must be taken as a whole, and, therefore, although the fight has been a game one and perfectly legitimate to try and fix the scale from a small stone to govern the whole, this Board cannot possibly accept that. With regard to the Nurses' Home, there is a discrepancy between Mr. Thomson's quantities and those we have had taken by Mr. Jeffries. Mr. Thomson had not the same facilities for taking those, and I think he must give way to us on that point. He claims there were about 900 stones in the Nurses' Home, while we claim there are something like 1,140.

17782. MR. BARLING: I do not think you pressed that, Mr. Thomson?

17783. MR. THOMSON: No; I said at the time it was only approximate.

17784. MR. VERNON: Then in that case I presume Mr. Thomson accepts the correctness of Mr. Jeffries' estimate. That leads me to say there is only one thing in which I disagree with Mr. Thomson. I think he has been a little bit too fond of suggesting that our returns were inaccurate when they did not quite meet with his views. Several times Mr. Thomson has forced things of that kind, and I must tell the Board we have no other object than to place the exact figures before the Board. It would be very foolish for us to send in any incorrect returns, because they would come back upon us, and I believe my officers are just as honestly intentioned as myself, and our returns have been as correct as it has been possible to make them. I will, therefore, ask Mr. Thomson to accept that as our intention, and I believe we have carried it out throughout the job.

17785. MR. BARLING: I do not think he questioned the *bona-fides* of your statements; he merely suggested that there might be some mistake.

17786. MR. WILSON: The accuracy.

17787. MR. VERNON: It is very natural he should do that.

17788. MR. THOMSON: There is a wide difference between your number of feet and Mr. Stuart's sworn evidence.

Mr. Loveridge's valuations for use of Board.

17789. MR. VERNON: I now come to the evidence of Mr. Loveridge with regard to these stones. Mr. Loveridge was called upon, so as to enable the Board to arrive at a decision upon that point, to take twenty heads of stone and put his prices on them. The Chairman desired that Mr. Loveridge should do this quite independent of quantities, as it would be stronger evidence, and Mr. Loveridge said he was prepared to do that. The Chairman again emphasised the fact that the evidence would be stronger if it were done without the quantities, and said it would be more satisfactory to everybody. Well, Mr. Loveridge took these twenty items, and he came back and stated that he and his colleagues had priced them independently of each other, and they had, as a whole, accepted his rendering of the details. The estimates were given on page 1688 of the evidence, and now that these prices are in, and I understand are and must be accepted, I find that by calculating the stone in these items by the prices attached to them, the average cost of the whole comes out at 3s. 2d. and a fraction. Now, it has been clearly placed before the Board several times by all parties that the remainder of the expenses on the stonework came to 3s. 0½d., and, if you add the 3s. 0½d. to the 3s. 2d. and a fraction, you have positively got the 6s. 3d. the original estimate. The whole thing is worked round in a circle, and it has come back

to

to where we started—6s. 3d. I admit that the 3s. 0½d. includes rotation services on the building. It might, or might not, have been lower, because the contractors put their valuation down at about 5s. 6d.; but still this works out exactly within a fraction of the 6s. 3d., the original estimate.

17790. MR. BARLING: It is very clear that if the quantities had been used it would not be as clear as it is now.

17791. MR. VERNON: Mr. Loveridge tells us he would not hesitate to take the contract at these prices, and he believes he would make a profit. Then, further on, he says he had not the slightest reservation with regard to the prices. Putting the other points of Mr. Loveridge's evidence on one side, with which I won't trouble the Board, that is the gist of what was wanted, and no doubt it is of very great value.

17792. I am not going to refer to the departmental methods, because this is not, perhaps, the place to go into that, and it is possible it would be improper for me to do so. Attention was drawn to the difficulties in purchasing material, and it was stated that sometimes purchases could be made to greater advantage outside the annual contract. At the same time, it would not be safe, and it would not be fair, to ask officers to go outside those contracts. Something might have been said as to the time it takes, through departmental procedure, for things to go through the office; but that is a matter which does not come within the scope of this Board, and I do not propose to deal with it. It has nothing whatever to do with the masons at any rate.

Workmen in private employ.

17793. A good deal was made of the fact that the Minister refused to allow men in private employ to be taken off those works, and it may be within the recollection of the Board that at one particular moment the result of such refusal almost produced a strike; at any rate, a strike was threatened over Lauderdale's case. Well, Mr. Grant was clearly and absolutely in the wrong over that case. He had first of all given his guarantee to the Minister in no uncertain sound that men in private employ were not to be taken on to Government works, and then what followed was an appeal to the Minister, and the Board knows what took place. Of course there is a great deal to be said on both sides as to how far a man in private employ should be debarred from obtaining Government work. I do not think that was the intention at all. The intention was to protect private employers from being deprived of men who were working for them. It has been given in evidence that men actually left their employ for half-an-hour in order to say they were unemployed, and in order to get on to Government works. That should never have been allowed, and it was cases of this kind that the Minister intended should be put down. Of course he never meant to stop a case where a man had a fortnight or three weeks' work ahead that he should be deprived of getting work in the Government when that ceased. Of course, a man should try to get it, and should get it, but the intention was that he should not get it at the expense of the employer, that is, by inconveniencing him through leaving at once.

Shortening hours of labour.

17794. There is a little point in connection with the shortening of the hours of labour which the Board should have before it before I absolutely finish. There were two setters on the buildings who were working forty-eight hours per week, and then for some reason or other—no one knows why, I suppose it was the success which Mr. Grant had attained, but he goes to the building and tells these men that if they work forty-eight hours they will be fined £5 apiece, a prohibitive fine, of course. Whether he was right in stopping these men working forty-eight hours is a matter which the Board need not deal with; but the Minister took, I think, a very humane action when he said, "What is to become of those men who are dependent on these setters? They don't want to waste four hours per week." They were going to lose four hours through no fault of their own, and to the detriment of the building operations. Then they were met with a counter movement which that man, Mr. Walter Thompson, gave you some inkling of the other day when he was in the box. This was another movement to insist upon the forty-four hours from the United Labourers' Protective Society. This Society, curiously enough, had nothing to do with the men engaged; these were skilled builders' labourers, and the United Labourers' Protective Society deals exclusively with unskilled labourers. The Builders' Labourers' Union, to which these men themselves belong, tried hard to get the old state of things retained; but the other Society, who had no interest in the men at all, was brought upon the scene in order to cloud the issue, and to make it appear as if the Labourers' Society were also objecting as well as the masons. It was a deep-laid scheme which I now uncover and show really what it was.

Tenders for new police buildings.

17795. Finally, I must refer to that little incident in connection with the contract for the Police Building at the corner of Hunter-street. Tenders were received, and the lowest tender was from three working masons, McCall, Dobbie, and James. Now, it is a very curious thing that when these three men were called upon in the ordinary routine of the office to take up their contract we could not hear anything of them at all. Their address in the first instance was given as the General Post Office. We made every inquiry but they never turned up. Now comes the point, and it occurred after the commencement of this inquiry. Mr. Grant goes to the Minister and tries to stop any contract being entered into. There is no doubt in the world, gentlemen, that those men were approached, not by Mr. Thomson, because I do not think Mr. Thomson knew anything about it, but they were approached by someone to keep out of it, because if their tender had been accepted it would have been the most damaging evidence against the cost of the stone at the Prince Alfred Hospital. They were kept out of it, and to this day we do not know where they are, or who they are.

17796. MR. THOMSON: Some of the gentlemen who were here as witnesses know where they are.

17797. MR. VERNON: Mr. Thomson is bearing out my suspicion

17798. MR. THOMSON: We do not know where they are, but the men who were here know where they are

17799. MR. VERNON: There is no doubt there was a little conspiracy against the Department to prevent that contract being entered into.

Conclusion.

17800. Now, gentlemen, I am afraid I have taken up a great deal of your time and patience. My only fear is, that in going into so many details of the evidence, I may have lost sight of some of the wider issues of the inquiry. I do not consider it my duty or my position to go into those; I have to confine myself to the point as to whether the stonework at the Prince Alfred Hospital has cost too much; if so why. Matters of policy I must avoid; I have nothing whatever to do with them. Nor should I express any opinion as to the general tendency of things, or in the direction in which they may travel—that is for the Board to determine; but if I have lost sight of any point which I ought to have brought before the Board in going into those matters of detail, I must ask the Board to excuse me, and take it into its own consideration.

consideration. There is no doubt I can press before the Board that the comparison that must be made is that between the Nurses' Home and the Prince Alfred Hospital. I think that has been clearly driven home. It has been given in evidence, given by diagram, and given by calculation, that that is the standard upon which the Prince Alfred Hospital pavilions must be judged for practical purposes. I think I have shown that the Rotation System has carried with it an enormous number of evils, and it has really disorganised the Department. I think I have shown that it has been applied, not universally, but exclusively to one portion of the Department, and it must be unsound; there must be something wrong with it if it is not more universally applied. I would like to say that this theory of the Rotation System is something like Mr. Thomson's own pet scheme of socialism. It has got too many dead ends; wherever you travel along the line of argument you come to a dead end, and that is the case with the Rotation System. Gentlemen, I am now leaving the case, so far as I have been able to state it, in your hands. The officers, of course, I venture to claim, are entirely free from any blame in this matter; they have simply done their duty, and done their best.

17801. MR. BARLING: As we thanked Mr. Grant and Mr. Thomson for their addresses, we have to thank you, Mr. Vernon, for your very able and exhaustive address. We will now adjourn till 2.15 this afternoon, when the contractors will address the Board.

(The investigation then adjourned till 2.15 p.m. on the same day.)

17802. MR. BARLING: Mr Vernon, we understand you wish to say a few more words?

17803. MR. VERNON: I wish to put in a comparison between the stone, the cube stone at the Nurses' Home and the Pavilions reduced to a common denominator, both in fractions and decimals; and this analysis, or rather summary, shows the difference in stones up to 6 feet cube, those up to 13 feet, and those up to 19 feet, together with those of 19 feet and over. [*Summary handed in, and marked Exhibit No.* 176.]

Mr. Oakden's replies to set questions.

It is right that I should also make some reference to a very important step which the Board, in its wisdom and judgment took in appointing an Assessor; and in bringing the Assessor here, and giving such an unusually good opportunity for those interested in the case to put their questions to him in arder to get the benefit of his answers. The Board of course wished information from him, and in a series of questions, about twenty in number I think, obtained his careful answers. Personally, and so far as the Department is concerned, those answers seemed to be eminently satisfactory. In small matters, possibly he did not follow quite so far as some of us have in the evidence, but, in the main, and on the general principle I would urge that those answers—the answers to the questions of the Board—were thoroughly in favour of the steps we have taken here to bring the case before the Board. Then I was allowed to put certain questions, and on behalf of the Department, I framed my questions in order to obtain answers which I thought would cover the whole of the ground which we, the officers of the Department, interested in this case took up; and I am by no means disappointed. Practically, Mr. Oakden gave his answers in the way in which we hoped he would do, and which from the evidence, I certainly thought he must do. It is true that in some minor points with regard to the cost, he did not go so far as the Chairman had allowed us to go, but in a subsequent cross-examination which I was allowed to make, Mr. Oakden somewhat modified some of his calculations to such an extent as to practically, as I pointed out this morning, bring his valuation of the extra cost to just exactly what the extra estimated cost would have been from our point of view—that is, about 50 per cent. in excess. Therefore, so far as the questions I have put, I am perfectly satisfied. Mr. Mant also put two or three questions, and Mr. Oakden's answers to them were also satisfactory. Then there was a series of questions from Messrs. Grant and Thomson, embodying the views which they have taken throughout the inquiry; and I do not think, so far as as those two gentlemen were concerned, the answers were satisfactory. They were necessarily following in the same lines as the previous answers in that direction; and therefore I claim that the questions of Mr. Grant and Mr. Thomson were answered in such a way as to be advantageous to the views which the officers of the Department put before the Board. Then there were certain questions asked by the contractors. With these questions I, of course as I have said before, have no voice or opinion at all. The contractors necessarily put the questions from their point of view on a much broader basis than I have attempted at all, and the answers to them may have been satisfactory or otherwise. But as a whole, and after the very careful way in which Mr. Oakden has gone through this matter, I for one have no reason to complain whatever of his replies to the Board, and I claim that those replies have really assisted the Board in coming to a decision which must be favourable to the Department.

Extract from evidence taken at meeting held 23rd October, 1903.

Professor Anderson Stuart's evidence *re* officers.

18437. Mr. BARLING: I do not know whether you would like to make any further remarks, Mr. Vernon. Mr. Thomson is going to say something, and perhaps before he begins you would like to say a few words in regard to the general bearing of Professor Stuart's statement.

18438. MR. VERNON: Of course, Mr. Chairman and gentlemen, we could not expect Professor Anderson Stuart to say anything with regard to the practical work of the building, but I would urge that the board take his general opinion as to the attitude of the officers. I should like to add that if there had been any friction or any tendency on the part of the department not to follow fully the wishes or the views of the hospital authorities I am certain you would have heard of it. As a matter of fact, I did not ask Professor Stuart that particular question, but you might gather from what he has said that the department has, from the very initiation of the scheme done everything it possibly could to meet their views. He has helped us by explaining to the Board how the first original estimate of £22,500 per wing became afterwards £29,000 odd per wing. It was through the constant accumulation of particulars gained during the preparation of these designs. We had at our elbow every day Professor Anderson Stuart, and very frequently the Matron of the Hospital, who had just returned from a special visit to the new London Hospital, which is considered the latest form of hospital construction. She came back when these plans were being prepared, and it was an education for all of us, after the Public Works Committee had been through these plans, to practically redesign them on the former design, and to embrace in them every particular which could be considered for this Hospital, which has to be the model and the teaching hospital of Australia. I take it if the officers of the branch had failed to accept all these suggestions and to embody them, sooner or later they would have been called to account for not doing so, and particularly so when it was found that the Minister accepted the improved designs and gave instructions for them to go on with the work. Professor Anderson Stuart has, I think, fairly put before the Board these circumstances, and I do not think it is necessary for me to say one word more.

Appendix V.

Extract from Evidence taken at meeting held 20th October, 1903.—Address of Mr. T. Loveridge, President, Master Builders' Association of New South Wales.

17805. MR. LOVERIDGE: The Chairman, in his opening remarks on pages 4 and 5, said the object of the Inquiry is to ascertain what result had been obtained under the present system of day-labour as carried out at the Prince Alfred Hospital, and, if these results are unsatisfactory, to ascertain whether this is wholly or in part the results of defects in the management, or in the system which has obtained. Again, as to the scope of the Inquiry, in answer to a query by myself, he said they had to take any evidence which will bear on the point as to the most economical way on any particular work. On page 45 Mr. Wilson said, "It seems to me we are enquiring into this excessive cost. If it is found due to the Day-labour System, we shall have to say so. If it is due to any abuse of the Day-labour System we shall have to say so," and, in answer to a query by Mr. Stuart, which reads: "If you find that the excessive cost is caused by certain abuses of the Day-labour System and these abuses cannot be abolished without abolishing the system, you will say so." Mr. Barling said: "Undoubtedly, that will logically follow." I, therefore, gather from the above extract that the Board desire to see the whole matter and its bearings from every point of view. My opinion is that in this respect every tittle of available evidence has been brought into its deliberations. In the early stages of the Inquiry, as per page 6, mention was made of a tender received for one pavilion, from Mr. H. Leahy, for the sum of £41,697. The Board of Reference would not, of course, recommend the acceptance of this tender, and if the Departmental estimate of £29,000 for one pavilion were based, as the evidence points out is the case in all other instances, on results obtained in previous work carried out under the contract system, then it seems to me preposterous to suppose that a tender for £41,697 could have been the result of any contractor's experience, and in this opinion I am confirmed by the fact that the name of the tenderer is absolutely unknown in building circles in Sydney, and he is not, and never has been, a member of the Master Builders' Association.

17806. On page 5 it was stated that the report of the Standing Committee *re* the erection of the Queen Victoria Memorial Buildings, at a cost not exceeding £45,000, was adopted by Parliament, and the necessary Act authorising the construction of the works was passed. The Act provided that the estimate already referred to was not to be exceeded by more than 10 per cent. We find on page 6 Mr. Vernon estimated that the work could not be carried out for less than £58,305, but as only £49,500 was available, and it was to a certain extent problematical what the ultimate cost would be, the Minister decided to proceed with the work, and at a later stage to consider the question of the extra cost. I may point out here that the Department had authority to expend £49,500, and the Minister, according to the evidence, personally authorised the additional expenditure of £8,805, thus exceeding the amount authorised by a special Act of Parliament. It appears, therefore, that the Department makes an estimate, obtains a 10 per cent. increase on that estimate from Parliament, and then proceeds to state that the work will cost nearly 20 per cent. added to this, and that even if it will be finished for this amount is a problem. I contend this uncertainty is not due to any misapprehension concerning what the contractor will charge, but to the uncertainty of the Day-labour System, and I cannot see how the Board will be able to arrive at any other conclusion, although I am sure they will view the matter from every possible standpoint. This use of the word "problematical" in the Departmental statement is, to me, a most peculiar one, but if the estimate of the Department be based upon the price of work of a similar character done previously by contractors, it only goes to show that some other influence is at work, inducing an anxiety which causes the word "problematical" to be used. These influences are, I contend, as shown by the evidence:—1st—The Rotation System of employment, which prevents the free and unfettered selection of men; and, 2nd—the Ministerial and Parliamentary influences which the evidence has disclosed. These disabilities are quite sufficient in themselves to cause a general feeling of laxity of control. Laxity of control means, in any private establishment, a pretty general disorganisation. If such a state of things as this exists in connection with the management of such a Department as the Government Architect's, it is only natural to assume that a similar state of things prevails over the whole of the Public Works system.

17807. As a flagrant instance of outside influence, it is only necessary for me to refer to the evidence given in connection with the case of Walter Thompson, who, fancying himself aggrieved, preferred to go direct, as the witness said, "to the head of the tree, instead of crawling through a sewer." In this case the witness declined to interview the Government Architect, or any of his intermediate officers, but stated that he went direct to the Minister for Works at Parliament House, and there received a letter, written by the Minister, ordering the foreman of Works to reinstate him. It will also be noticed that the workman made his appeal personally, and without any intermediary, and the Minister adopted a similar course by dealing direct with the foreman of works, and not with his departmental officers.

17808. I do not desire to traverse the evidence, which I am sure the Board will thoroughly weigh, but, in justice to the Master Builders' Association, I must point out that on page 1,459, referring to the statement of the Under-Secretary for Public Works, Mr. J. Davis, that "In order that the comparison, if it were to be made, should be perfectly fair to both sides, and with a view also to getting uniformity of colour, the Department decided to invite tenders for both pavilions under certain special conditions." Yet, on page 1550, in a letter to Professor Anderson Stuart, dated 13-5-1903, he writes:—"One condition, and one only, has been imposed as additional to the ordinary conditions under which works are contracted for." The contradiction here speaks for itself. On one page there are "certain special conditions," and the next "one and one only condition." With regard to the uniformity of colour upon which so much stress was laid, I would like to point out, as per page 1722, that when the Board and the witnesses visited the uncompleted buildings, I drew attention to the colour of the bricks in the two pavilions. I there stated that it would be seen that the bricks in the lower storey are of a different colour to those above, and that the

the bricks varied in colour from beginning to end. I think I pointed out in my evidence that it was quite impracticable to obtain facing bricks of the uniform colour required under the one condition referred to above. When the brickwork was to be considered, it will be seen that the conditions sought to be imposed by the Department could not possibly be fulfilled, and then, without the slightest hesitation, the point was waived, and instead of uniformity of colour we find the wall showing a great variety, and this despite the fact that the Department had an absolutely free hand in the selection of this material. It is seen on page 1553 that the Under Secretary (in submitting a report to the Minister upon the minute written by the Government Architect to the Under Secretary) concludes by suggesting that "As the work is to be carried out by day-labour, and as the £58,305 is only an estimate, and it is impossible at this stage practically to say the exact cost of the two pavilions, that the proper plan will be to proceed with the work, and when it is further advanced, the question of providing funds to cover the sum over that authorised be then considered." This uncertainty of cost, as revealed herein, is, I contend, due to this system of day-labour, and the Board will doubtless consider this aspect of the matter.

17809. Apart from the constructive portion of the work when it is carried out by day labour, I may point out that the diagram, following on page 1557 relative to an offer for sand, illustrates to a marked degree the difference between the methods pursued by the Department and a contractor, so far as administration is concerned. I do not intend to infer this routine is unnecessary, so far as the Department is concerned; but I do say that these nineteen voyages of this one piece of information, ending in the loss to the Department of £157, would be impossible under a contractor's administration; and it is quite conceivable that if every transaction necessary to the performance of a large work is subjected to the same sort of perambulation, the cost must be enormous, and opportunities so lost would never occur with ordinary business men.

17810. With regard to Mr. Thomson's statement, and the better article that the Government gets, I would like to draw the Board's attention to the fact that the Government appoints its own supervisors; and it is a reflection upon these gentlemen to say that inferior work obtains under the Contract System to that obtaining under the Day-labour System. Furthermore, on behalf of the contractors, I must emphatically resent any such imputation. The fact is, the Department specifies a certain article in its contract, and gets that article from the contractor. The quality depends upon the specifications, and the Department gets what it specifies—neither more nor less. Mr. Oakden's evidence shows that the quality of work done under the one system differs not from that done under the other.

17811. With regard to the prime question of the cost of stonework at Prince Alfred Hospital, I have only a few words to say, and will take as a comparison the contract for the supply of stonework for the Police Offices to be erected in Hunter-street. This work has been often mentioned during the course of the Inquiry; and, allowing for the difference in its character, I fail to see why stonework at Prince Alfred Hospital should admittedly cost 9s. 8d. per cubic foot, whilst this at the Police Buildings cost only 3s. 4d., supplied to the Department ready for fixing. It must be borne in mind that this Police Building stonework is of first-class character. There are no parts backed up by brick wall, the internal faces of the work being seen as well as the external; yet this discrepancy exists. In connection with the Police Building, I may mention that the work was commenced several months before the lease of the hotel premises on the proposed site had expired, and it appears to me that this undue haste is another outcome of this Day-labour System, and the need to provide employment for the governmentally employed artisan. I cannot tell how this mismanagement occurred, but that the ropes were pulled is apparent. With regard to the tender for the stonework for this building, however, I would like to draw the attention of the Board to it in this way: here we have a clearly defined bargain to perform a certain work for a specified sum of money, and there is no possible chance of the work costing more. It is not a mere office estimate, but a *bonâ fide* contract to perform under penalty for non-performance. I submit this latter is a condition under which the officers of the Department do not in any way suffer, and possibly ought not to suffer, if works, under existing conditions, carried out in their Department exceeded the office estimate, as is the case in the matter of the Prince Alfred Hospital. The office estimate for the stonework for the Hospital has, to my mind, been made out on safe lines, as the only guides to hand were the prices paid for stonework through the Department.

17812. With regard to the statement made by the Minister, I understand this is not evidence; and as that gentleman absolutely declined to be cross-examined in any way, I must also decline to recognise his statement as having any weight in connection with this Inquiry. Had he submitted to an examination, I should have traversed his statement from end to end.

17813. Though the Minister for Works took strong exception to myself and colleagues being present, and taking part in the inquiry, it must be remembered that we are witnesses practically summoned by the Board to attend and give evidence.

17814. It will, therefore, be seen that the position has not in any way been sought by us. On the other hand, it has been a source of very great inconvenience and expense to us to have to attend here on so many occasions.

17815. Some doubt has been cast by the Under-Secretary for Works on the value of evidence submitted by the builders; but if compared with the evidence given by outside witnesses—such as Messrs. Marsden and Oakden,—it will be found to be thoroughly impartial, reflecting equally upon the workmen and the Government Architect's Department.

17816. The cost of these works, I think the evidence shows, is grossly excessive, both as regards labour on the stone, and all other costs, and it is apparent to me, at any rate, that the whole system is at fault.

17817. In the cross-examination of Mr. Oakden by Mr. Grant, the latter endeavoured to point to what was alleged—the poor and inferior quality of the stone in the Nurses' Home; but Mr. Oakden's evidence goes to show that, with one exception only, the quality of the stone was equal in all respects to that used in the Prince Alfred Hospital Pavilions.

17818. The one case mentioned by Mr. Oakden was a small window-sill at the rear of the Nurses' Home. It must be borne in mind that this building has been erected more than twelve years, and I would point out that the stone in the Prince Alfred Hospital has yet to stand the test of time.

17819. I would invite the attention of the Board to the statement, as per page 1749, q. 16889, wherein the Under-Secretary, in the course of his remarks, says: "I am sure, as far as the Minister is concerned

concerned, what he wants is fact, and the whole question dealt with in a judicial spirit. . . . I believe I represent what he thinks when I say he has no predilection one way or the other," and so on. Well, I think that in the evidence an abundance of fact will be found which will prove to many minds astounding.

17820. According to Mr. Davis, in what he has stated above, the Minister's thoughts do not quite coincide with his public utterances, and I will leave him the task of explaining the difference which exists between his public utterances and his professions made at this Inquiry.

17821. As far as I am personally concerned, and I think I can speak for my colleagues on this point, I am content to leave the whole matter to the Board, knowing that they will look into the evidence from every standpoint, and will also deal with the same in a most judicial manner.

17822. I would like to say, in conclusion, that I am satisfied that the Board has offered every facility for the production of evidence, and have not in any way hampered or restricted those who have taken part in the proceedings. I also have to thank the Board for the great courtesy shown to my colleagues and myself during this Inquiry, and to express our appreciation of the absolutely fair and impartial manner in which the Inquiry has been conducted.

Appendix VI.

Extract from Evidence taken at meeting held on 20th October, 1903. Address of Mr. J. M. Pringle, representing the Master Builders' Association of New South Wales.

17824. MR. PRINGLE: I may say that I agree with the statement Mr. Loveridge has made. There are, however, one or two points I should like an opportunity to refer to which have been entered into in this inquiry, and which I think are of considerable importance. I should like to direct the attention of the Board to a portion of Mr. Davis' evidence, in which he said that the conditions now regulating contracts under the Government are of such a nature that it is practically impossible for a contractor to make excessive claims for extra work, and to sustain those claims.

17825. MR. BARLING: Mr. Davis was told the question was going to be asked, and given time to prepare an answer. It is a very important point.

17826. MR. PRINGLE: It is a most important point to my mind, because he further said that this alteration in the conditions of contract was made principally because of the M'Sharry case, and such other cases, eleven years ago. In further reply to a question which I put to him, he thought the first Government day-labour work was that of the Government Printing Office in 1896; that is about eight years ago. As a matter of fact, I think it is about nine or ten years ago since day-labour was first introduced—on the roof of the Colonial Secretary's office. That was practically the first day-labour work.

17827. Now, Mr. President and Members of the Board, it is perfectly apparent that under the Contract System, according to Mr. Davis' evidence, there was no possibility of contractors getting at the Government. Now, the reason has been given, and it has been given as far as I recollect very prominently outside of this Inquiry—if you will allow me to refer to it—that "Day-labour was introduced to prevent contractors getting at the Government." It has been the stock argument. I heard Sir William Lyne make that statement not six months ago, and I think it is of great importance that the Board's attention should be directed to this fact, because we look to them, and I think the public look to them too, to speak with authority upon this question. There have been very many contradictory statements made on this subject, and I think it might now be settled, and settled with advantage, to the Government and to the Public Works Department.

17828. Mr. Grant said, also, the Day-Labour System was introduced because of sweating on the part of the contractors. Well, Mr. Vernon denied that such was the case. I wish to point that out, because Mr. Thomson and Mr. Grant have reminded us very often of that in their defence. They, themselves, are bearing the burden of the good name of the stonemasons in Sydney, and although we do not appear exactly in the same way as they do, I think we have had to hold up our own end of the stick in public and private, and we look to the Board to do us justice in respect to these matters of fact. Whatever reasons may be introduced in future for the Government carrying on its works by day labour, I think it will be impossible after this inquiry is done for the arguments to be used that have been used against us, so often and so unjustly, since the Day-Labour System was introduced.

17829. Now, there was another matter, and that was the cost of the clerical work. Mr. Steel gave certain evidence here as to the cost of the clerical work in connection with the large number of vouchers that were necessary in order to carry out this Government system of employing day labour. I think it was Mr. Wilson who said it was very important that that evidence should come out, and so I think I am in order in referring to it. Now, it would appear that the number of vouchers from 1896 to 1902-3 was almost doubled, from 34,000 to 66,000. Although that increase in the number was not entirely caused by day labour works, still I think his evidence showed that it had a very great deal to do with it. This, in justice, I claim should be added to the cost of this work at Prince Alfred Hospital, and although it may not be possible to get it in figures, still the fact that it is necessary to employ such an enormous amount of clerical work for the purpose of carrying out efficiently day labour works is, I think, gentlemen, a matter for your very serious consideration indeed. Respecting our relations with the men, my friends here, Messrs. Thomson and Grant, will allow that there are other trades in Sydney besides the stonemasons, although, naturally, those of us who have all our lives been working in connection with the erection of buildings look upon buildings as the most important thing. We are proud of our trade and calling, and think that we are a very highly-skilled body of men. When I say "We" I speak as a tradesman, and one great thing in connection with the building trade is that ninety-nine per cent. of the employers have been mechanics themselves, and are in the closest touch with the men, and I am glad to take this opportunity to say that, speaking generally, the most friendly feelings have always existed between

between the men employed in the erection of buildings and their employers. It has been recognised for generations that the tradesman of to-day may be the employer of to-morrow. I am referring for a moment to the Builders' Association. There is no barrier there whatsoever; we are only too pleased to welcome a man who might have been working for us yesterday as an employer to-day. And so I claim, gentlemen, that our business is a democratic business, and we have been, speaking generally, on the most friendly terms with those we have employed. Now, I think that our evidence has, at least I claim that it has, a certain amount of weight. Certain doubts have been thrown upon the value of our evidence, and this has been referred to by Mr. Loveridge; but I do not think that the Under Secretary could have actually meant what he said, because in cold print it amounts to this: that the notes we have made for years in connection with our work, notes that we have made entirely for our own private use, are not to be depended upon as to the value of the work; that our notes founded on long experience are not to be depended upon, and are in some way coloured. I think we must have misunderstood Mr. Davis, but we feel rather sore on the matter, because it seems to us such an unreasonable thing. We earn our bread and butter by depending upon those very notes, which have been acquired through years of experience.

17830. With respect to the Rotation System, I should like to remind the Board that there was some doubt as to the reasons why the Rotation System was introduced, and also some doubt as to how it was introduced. Now, the representatives of the Unions claim, and justly claim, that they did not introduce the Rotation System, but that, it having been introduced, they thought it was a good system, a fair system, and with that I thoroughly agree, if their idea is—and I think they have stated that their idea is—that the Government should employ all labour. Mr. Grant, at any rate, went that far.

17831. MR. THOMSON: We did not put it that way, Mr. Pringle. We put it this way: that every man has an equal right, if he has the capacity.

17832. MR. PRINGLE: I did not until now hear that qualification, Mr. Thomson.

17833. MR. THOMSON: I put it that way a number of times.

17834. MR. PRINGLE: We have been educated a little by this Inquiry, and I notice that together with the scope of the Inquiry our ideas have somewhat grown. Now, there is one little matter in regard to this Rotation System which appears to me very peculiar indeed. It was introduced, according to Mr. Smith, to give all a fair chance. I think that is very clear, gentlemen, "It was introduced to give all a fair chance." It appears that this Rotation System, and I think Mr. Wilson was the first to point it out, was really a system of selection, and with reference to that, even the Minister for Works in making a statement here said it really meant a survival of the fittest. Well, I was astounded to hear such criticism coming from such lips. This Rotation System was invented to give all a fair chance. A fair chance of what? Of being weeded out, and that is really what it comes to, giving all a fair chance of being weeded out. Mr. Vernon at the last sitting here, at which I was present, stated it really had come to that, because it had resolved itself into a principle of selection. I took the opportunity to point out that if the object was to give all a fair chance, that object was defeated by the system itself, and no matter, though the intention had been to give all a fair chance, to give all a fair opportunity, it had resolved itself into a system of selection much the same as any other system that we have had for the last two centuries. Because our system, the builders' system, is a system of selection, and that selection takes place, of course, automatically. Practically the employees are selected because of their capacity—because of their proved capacity. Now, I claim that this Rotation System, if the object was to give all a fair chance, has undoubtedly broken down; and if that was not the object, then it is no better than any other system; in fact, I do not think it is as good, because it appears that those who are selected make claims, which they who are not employed by the Government never think of making. Gentlemen, they make a claim on your time, and it is a very large claim indeed. I think you will allow me to point out that the stonemasons are not the only tradesmen employed in the city; there are many other trades, and the persons employed in those trades have to put clothes on their bodies and food in their bellies just the same as anyone else. They have the same right to employment as the stonemasons; and if every dispute is to assume the importance this dispute has assumed, if it is to take up the time of so many men who might be more profitably employed in some other way, where is it going to end? Gentlemen, I claim that this is a public matter, and a matter of the most practical importance to the country, in my opinion.

17835. Well, then, I do not think I have much else to say, unless on one or two little things that have already been touched upon. Mr. Loveridge spoke of the colour of the bricks. Well, I do not wish to go into the colour of the bricks, but that is really one of the stock troubles of the building trade. There was always trouble there. It does occur to me that had the work been carried out by a contractor, the colour would have been better for a simple reason: the Architect would have employed a clerk of works, who would likely begin with the colour of the bricks. They all have an eye for colour, and that is one of the faults that is found by a clerk of works. He would have insisted on the colour being that which he wanted, and being there for that purpose he would have got it. I think it must be evident that where the Government are carrying out the work themselves, and where they put on their own clerk of works, he cannot develop the same amount of backbone—as Mr. Thomson puts it—as another man who is there to get his bread and butter.

17836. MR. THOMSON: Why should he not? Give a reason.

17837. MR. PRINGLE: The insisting on the colour of the bricks means delay—it means expense. Now, under the system where the Government Architect is the contractor, as the contractor he has got to consider the expense; and if he finds he cannot get bricks unless by waiting another month, or by going to another yard, the pressure is more than he can stand. I look at it from a common-sense point of view: he will say, "The colour is nothing; we must get on; we cannot wait!" On the other hand, where the clerk of works is under the control of a different man, he insists on the colour; he is far more insistent and far more determined that the specifications shall be acted up to than is likely with a clerk of works employed by the Government, who is in the same boat as the men and the Architect himself. I consider this a common-sense point of view. Then we have heard something about hollow beds, and all this kind of thing, as a part of contract work. The contractor has to bid for his work, and there is no doubt that many of them have attempted to do the work not quite up to specifications. I would like to ask: does the Government Architect throw all faulty stones to one side? He does not; he does what a builder does. He makes the best of it; for the simple reason that the financial aspect comes in, and it is more important that the job should not cost too much than that it should be absolutely perfect.

17838. With respect to the number of men employed on day-labour works, I wish to point out that Mr. Wade said that in his opinion it made no difference to the labour market whether the work was under contract or day labour, because if they were not employed by the Government they would still be employed if such work was carried out by a contractor. In my opinion that was a very sensible view, and one that will commend itself to the Board. There is so much work to do, and so many men to do it, therefore that it does not matter who controls the work, so far as finding employment is concerned. That is sometimes given as a reason for day labour, and I think there is really nothing in it. We have been also told that the men have been working better since this Inquiry started. Well, I was not surprised to hear that. This brings us to a point which Mr. Thomson has mentioned, and that is, the serious nature of the charge which is made against the stonemasons in slowing down. He has gone so far as to say that they are charged with immorality, or something of that kind. I was surprised to learn that Mr. Thomson and Mr. Grant took such a serious view of this matter. I have had a very long experience in connection with men; I recollect the time I worked with them, and I should not like to say that I did always as much as I could; and I know when I was a foreman the men did not always do as much as they were able to—and they were first-class and decent men. I think the men have taken far too serious a view of this altogether. It really amounts to this: that men will not—no one will, I do not care who he is—do as much work as he is able if there is not some reason that drives him to do it.

17839. MR. THOMSON: That is a fairly sweeping assertion—that charge.

17840. MR. PRINGLE: Men who hold fairly responsible positions, though there would be no one immediately over them to see they do the work, are under the whip exactly the same as a man who works by the day and has a foreman over him to see that he does the work. Their position depends on the work being done. I do not take a gloomy view of human nature, but I am perfectly certain of this: that most of us who work hard would not do so unless necessity compelled us.

17841. Now, I can quite understand that these stonemasons, who have been in Mr. Loveridge's employ and some in mine and in other places, and we have found many of them good men, and have had no fault to find with them, have the idea in their minds that they are working for the Government, and that they would, therefore, not do as much. I think that is also borne out in the evidence. Then there is the cost of the stone. You have had evidence as to the cost of the stone in many buildings in Sydney, carried out exactly at the same rate of wages, carried out by the same men, the same stone used, and you are confronted with this excessive cost—very excessive cost. Neither Mr. Thomson nor Mr. Grant worked for the Government, and I have been wondering why they did not; but I think they have put their part of the case a little too strongly. I really cannot conceive that it is any reflection on the men that the Board should find that this cost is excessive. I really cannot conceive that it is any sort of reflection on them; it is a reflection on the system, and that, in my opinion, is the sum total of the whole thing. The system is wrong, and I think the very fact of this Inquiry being held, after those eight or nine years' trial of the system, with respect to a small item as to whether the stone is costing too much or too little, will show that the system is wrong and a bad one.

17842. Well, I am sorry that I had not my remarks written out in a similar way to my friend, Mr. Loveridge, but I could not find the time. I was anxious to call the attention of the Board to the one or two points I have referred to, and I think it will be seen, by comparing our evidence—the evidence given by the builders with the evidence given by gentlemen who have been perfectly independent of Sydney, and outside any influence that may be here—that our evidence has been fair and honest. I should also like to say, although I do not know that it is necessary for me to do so, that we have no feeling at all as far as the men are concerned. There were some remarks about us coming here for a certain purpose, to do all the harm we could to day labour. I think those remarks were invited. We have no ill-feeling of any kind as far as the men are concerned. We are very pleased to have met them here, and I do not think our personal friendship will in any way be affected by what has taken place. But I think that, after the experience they have had of this system, they will take a more reasonable view of the whole question; because, as has been remarked by the President of this Inquiry, the consequences of the Inquiry will be very far-reaching, and I hope they will be. I think it is a gloomy outlook for this country if they are not far-reaching. What we are going to do, with the present tendency of our small population to seek Government employment, I do not know. I do not know where it is going to end, but I do think that we have left common sense on the other side of the globe altogether; that is the view I take. Mr. Thomson takes an opposite view; but his ideas will not stand here in a new country. I advise him to go where population is more congested, where social evils are more apparent and far-reaching. I do not know what the superficial area of the country is, but if we divide it by the population I do not suppose that one of us would be within call of another. Mr. Thomson's ideas, of course, have right and reason in them ——.

17843. MR. THOMSON: I have not pushed them here.

17844. MR. PRINGLE: Oh, yes, you have. They have right and reason in them in all dense centres of population, but not here; the proposition ought to be on the other side of the globe. Gentlemen, I have seen men here, capable men, educated men, some of them tradesmen of the very best, in Sydney going down, down, and down. They cannot get a chance. There are some of the most capable men in this country, and in Australia generally. Why is it that they come here? Simply because they are enterprising. Some of these men had good positions in the old country; they were at the head of many things; they were men in good positions and have come here, and are practically done, simply because the Government has started out on this insane idea of finding employment for everybody.

17845. MR. THOMSON: I think you overlook the fact that the reason we have no production in the States is because we have no market. As long as you overlook that fact you overlook the important point. I do not agree for one moment with the assertion that there is a falling-off of production per head in Australia, and the lowering of the output and the work of the men. That is not borne out by facts, and I know I am continually devouring them. Neither here nor in Great Britain is that the case. The assertion is made through people in general failing to grasp the matter.

17846. MR. PRINGLE: Well, I should like to assure the Board that we recognise the courtesy and the patience with which they have listened to our ideas. We have got off the track at times, but they have given us a great deal of latitude and have listened with much patience to what we have said. I wish also to acknowledge the courtesy which has been extended to us by Mr. Vernon and his officers, and also by Mr. Thomson and his colleagues.

Appendix VII.

Extract from Evidence taken at Meeting held 20th October, 1903.—Address of Mr. W. H. Mant, Crown Solicitor's Office, representing the Department of Public Works.

17847. MR. MANT: I do not propose to address the Board at any length. I did not have the advantage of hearing Mr. Vernon's address, but he showed me the materials of it; and I am sure he must have covered pretty well the whole ground of the scope of this Inquiry. In addition to that, however, I would direct the Board's particular attention to not only Mr. Oakden's answers, but also to the questions that were submitted; and I think that the two combined make one of the finest addresses that could be listened to. It would be the height of conceit for me to say one word in addition to what Mr. Oakden has said. I am not, of course, saying that he is right in his deductions—that is a question solely for the Board; but I feel sure that the whole matter at issue could not be laid clearer before the Board. There is, however, one matter which has been touched upon by Mr. Pringle—that is, when I first came here I heard Mr. Grant talking about some "dastardly charges." The word "charge," I think is rather a strong word to use, because, as Mr. Pringle has said, it is only human nature to expect men to slacken work under certain circumstances. If you go into a boys' school when the master is away, you will see half-a-dozen boys working and the others idling. It is the same thing—although not to such an extent—with nearly all men. It seems to me, in connection with workmen—and when I say workmen I do not limit myself to stonemasons and anyone like that, I mean clerks and all others who labour—if you take away or hamper the supervising intellect, it is only natural that there should be a certain slackening off for which the greatest excuse can be found. Moreover, I do not want to touch upon the economical point of view; that is also a matter for the Board; and these matters of day-labour and contract work seem apart from the scope of my duties. I would, however, ask the Board, if they possibly can, to limit themselves as far as may be to the evidence. With the laudable intention of giving us as full an inquiry as possible, it seems to me that a mass of utterly irrelevant matter has crept in. I think that it would be most dangerous if the Board were to allow themselves to be influenced in any way by some of the statements that have been made. They should, at any rate as far as practicable, limit themselves to the evidence,

17848. Of course, I am not asked to give an opinion in any way. It seems to me that to do so would be to go beyond what the Board require of me; so I am simply making these few remarks before the decision is arrived at, in the hope that they may tend a little to assist the Board in considering the evidence.

17849. But I would repeat, without wishing to comment in the slightest degree upon any of the witnesses, that some of the statements made here would seem most astounding, and should be altogether disregarded by the Board, unless, as I said before, they are borne out by direct evidence.

17850. As to the question of the quality, &c., of the stonework, I am sure that any remarks from me would be of very little use after the exhaustive manner in which Mr. Vernon has dealt with the matter in his address.

Appendix VIII.

Extract from Evidence taken at Meeting, 23rd October, 1903,—Evidence of Professor Anderson-Stuart.

Professor Anderson Stuart, was sworn and examined as under:—

18404. MR. BARLING: *Q.* What is your name? *A.* Thomas Peter Anderson Stuart.

18405. *Q.* What is your position? *A.* Professor of Physiology and Dean of the Faculty of Medicine. I am also Hon. Secretary and Chairman of the Board of Directors, Royal Prince Alfred Hospital.

18406. *Q.* You are aware of the inquiry we have been holding in connection with the Prince Alfred Hospital, and before we finish the taking of evidence, we shall be very glad if you can give us some information to assist us in coming to a just conclusion on the whole subject. We will leave you a free hand to make what remarks you think pertinent to the subject of the Inquiry. Before you begin your remarks, we should like to ask one question, and it is this: whether it would have been inconvenient for the stonework in connection with the Hospital to have been worked on the site; if so, why? *A.* In my opinion it would have been impossible and undesirable to have worked the stone on the site, for these reasons: first, the amount of room which is available is so small that I really do not know where space could have been found; it has been so small that since the work commenced we have not been able to set apart a portion even for the vehicles of the visiting medical officers. Secondly, as everybody knows—or at all events I know—the annoyance of the chopping all day in a stone-yard is such as would be extremely prejudicial to a very large number of the patients who are in the wards at all times. At the University, my department is a very considerable distance from the place where the stone is being cut for the Fisher Library, and even at that distance there is a considerable amount of annoyance, which worries even a healthy person, and which would be intolerable to a sick person.

18407. MR. BARLING: Will you please make your statement now.

18408. WITNESS: Mr. Chairman, by your courtesy, I had the use of a copy of the evidence, which is somewhat voluminous. I could not possibly spare time to go through it myself, nor could Mr. Epps, the Secretary

Secretary of the Hospital, accomplish the feat in the time at his disposal, but he got through, I think, about five-sixths of it, and wherever any portion seemed to have an interest to myself, as representing the Hospital, he marked it, and since the day before yesterday I have been able to go through that in as fair and complete a way as time would allow, and various thoughts have come to me, suggested by the evidence which is put down question and answer. In the first place, I would remark that I carried away with me from reading the evidence the impression that it would likely happen that people would think that the buildings are costly buildings in the sense, not so much of costing a large amount of money, but in the sense of costing too much money, and I have asked myself "Is that so?" I have come to the conclusion that they are not, and for these reasons: If you will compare the plan of the existing Pavilions with that of the Memorial Buildings under construction, you will find that, roughly, the plan of the Memorial Pavilions is one-half more than that of the existing Pavilions. Secondly, the number of beds in each of the existing pavilions is 78; the number of the beds in each of the new pavilions is 117; and if you take half of 78, which is 39, and add it to the 78, you make 117. So again by that method you come to exactly the same result, that the plan of the new Pavilions, as regards area and the number of beds provided, is just one-half more than that of the existing Pavilions. Thirdly, taking it by way of floors, in the existing Pavilions there are $2\frac{1}{2}$, in the new Pavilions there are 4 in number. Now, if you add the half of $2\frac{1}{2}$, which is $1\frac{1}{4}$, to $2\frac{1}{2}$, you get $3\frac{3}{4}$, and there you have the same result, viz., the new is one-half greater than the old. Fourthly, the price of the old Pavilions was £22,500; take half of this, £11,250, and add it to the price of the whole Pavilion, and you get £33,750, and by doubling that you get £67,500. The estimate of the probable cost is £66,000. Taking, thus, all these circumstances into account, you come, by various ways, to a price which, I understand, is about the price which the Pavilions are expected to cost when they are completely finished; and, therefore, taking the old with the new, and comparing the one with the other, in my opinion the new Pavilions are not excessive in price. On the other hand, they are cheap; for one must remember that the operative department of any hospital is necessarily a costly one, and the operative department in the old Hospital was a distinct block from the existing building. Now, we have provided that costly building attached to our new Pavilions. Each new Pavilion has its own operative department, and the price of those costly departments is included in the price of the Pavilions.

18409. The Royal Commission, which you remember inquired into the Charities of Sydney in 1897, recommended in so many words that 200 extra beds should be provided as an addition to the hospital accommodation of Sydney, and they recommended that those 200 beds should be provided at the Prince Alfred Hospital for the reasons which they give, and which I need not repeat. It was, therefore, about this number we strove to provide in designing the new Pavilions. The exact number of extra beds provided by the Pavilions is tantamount to 234; but seeing that 14 of those will replace beds that we will give up in the Administrative block, the net increase will be 220. But a further reduction has to be made, because one of the objects in building these Pavilions and providing this extra bed accommodation was to enable the Hospital authorities to clear out wards periodically for the purpose of airing and ventilation. The overcrowding at present is such that for years past we have not been able to do this, which, everyone connected with Hospital administration knows, is an absolute necessity; so that although we have provided 220 beds net, you must take from that 32, which will be kept vacant under the better system of management, and therefore the exact number of beds we have provided is 188; and I think 188 beds is a near approximation to the 200 which were recommended by the Royal Commission.

18410. If you refer to the Report of the Royal Commission you will find that the cost per bed at the old Hospital was, including the Administrative block, £754. The cost per bed at the new Pavilions, taking the total cost as £66,000, is only £280; and if the old Hospital were a reasonable price, the new Pavilions are very cheap, for there is extra accommodation in the new Pavilions which balances the Administrative block in the old buildings. My predecessor, as Chairman of the Board, when speaking about the proposed new Pavilions before the Royal Commission, referred to the number of patients that would be accommodated as 128, and the price as £40,000; so that if 128 patients were to be accommodated for £40,000, that works out at £312 per bed. Now, those were the figures which were originally used, and the price, as it turns out, £280, is a considerable reduction upon the £312 which was then contemplated.

18411. When the Parliamentary Standing Committee on Public Works called for the production of the plans, our case was the first considered in the session, while we understood it was coming on a little later. We were taken somewhat by surprise, and some of the particulars had not been fully worked out. That accounts for one or two little alterations in the plans which were adopted, mainly with a view to bringing down the price. For instance, there were rather handsome stonework bridges between the Administrative block and the new Pavilions. These were put in at my suggestion in order to facilitate the passage of the medical men to and from the wards and their quarters; but when it became a question of saving a little money, naturally these were omitted. The omission of these bridges made rather a wide gap between the Administrative block and the end of the Pavilions, and it was then seen that we could add a few beds to the end of the Pavilion, and in that way diminish the cost per bed; and that was done. That is one reason why the number of beds was able to be kept up to about the limit which the Commissioners had in view.

18412. Another way of cutting down the expenditure was in buying the bricks. As you know, the bricks of the old Hospital are what are called white bricks, but they are anything but white. They are generally of a dirty scabby appearance, which I do not think much of—personally, of course. I was glad of the suggestion that we should adopt a cheaper, and, in my opinion, a sightlier, and, I am told, in the opinion of brick experts, a better brick, and that was done in the case of the Pavilions. Another reason why I was glad to see the change made was because, after all, these Pavilions are part of the Hospital, and yet they are not part of it; and by giving them a different colour it would perpetuate the fact for all time that they were distinct, as a Memorial should be.

18413. Personally, I have spent a good deal of time at the place, going there at any hour of the day I pleased, and I am quite satisfied with the quality of the work. Of course, I am not an expert; but, so far as my opinion is concerned, the work has been very well done indeed. I am quite aware that some of the bricks are not as good a match as one would like, but it came to be a question of delaying the work indefinitely, or admitting bricks that were not a perfect match. Still, even when that was done, I do not think, as far as I can see, much exception can be taken to the match of the bricks; anyhow, while we were waiting for bricks of a perfect match to come—and you could never tell when they were coming,—the

sick poor of Sydney were lying by the wayside—not literally, but metaphorically. There was no accommodation for them, and whenever I was appealed to I said, "Do the best you can, and let us get to the beds."

18414. There is a statement made in the evidence showing the manner in which the proposed contest between day-labour and contract should be brought about. It is stated there, and correctly so, that it was the suggestion of the Board of Directors, and I ought to state what our reasons were for making that suggestion. We thought if the two systems were competing against each other, each would naturally try to do its best, and the result would be that we would get work as perfect as it could be made. We thought the work would be rapidly done, would be well done, and would be cheaply done, and, incidentally, of course, we thought that it might help to settle the vexed question, because we had deputations coming to us from the masters and we had deputations from the men, each upholding its own side more or less. We were not experts; we could not settle which was the better of the two; and it occurred to us, that if there was a competition it would result—as it results wherever there is competition—in each trying to do its best, and whichever side lost it would not matter because the Hospital would certainly gain; and we were trustees for the Hospital, and in duty bound to do our best for the Hospital.

18415. MR. BARLING (to Mr. Vernon): I am sorry you were not here, Mr. Vernon, to hear the first part of Professor Anderson Stuart's statement, and I will, therefore, ask the shorthand writer to read it.

(The shorthand writer then read that part of Professor Anderson Stuart's statement which was made prior to Mr. Vernon entering the room).

18416. MR. VERNON: *Q.* Was the calculation you made as to the cost per bed based on the 234 beds gross or the 220 beds net? *A.* The 234 gross.

18417. MR. WILSON: *Q.* In comparing the cost per bed of the original block with the Memorial Buildings, did you take into account that the original block was loaded up with the Administrative block? *A.* Yes, they are not separable; but the extra accommodation in the new Pavilion may be put against the Administrative block in the old buildings.

18418. *Q.* So that it is hardly a fair comparison? *A.* The difference in the price is enormous.

18419. MR. VERNON: *Q.* And you have loaded these two Pavilions with the two operating rooms, which are specially fitted up? *A.* Yes; and they are very costly. We have loaded the new Pavilions, not only with the operating rooms, but with a great deal of accommodation which has had to be provided in order to bring that operating department up to date. We have striven to bring our department right up to date, and I am bold enough to say, in some respects perhaps rather in advance of the times, and the result has been, of course, that it costs a lot of money. Then we have it loaded up with two lecturing theatres.

18420. *Q.* Is it not a fact that even now there is no final decision as to the details of these operating theatres? *A.* At this moment, I cannot say what they are. I have not been able to ascertain, and I am going to Europe and America now for the purpose of finding out. The whole thing seems to be in a melting-pot; one does not know what to do. I have read everything, I have questioned everybody, and I have done my level best to ascertain, but without success; and I have been granted leave of absence, and I am going to Europe and America to try and find out.

18421. *Q.* So that it was not possible for the officers of the Department, when the sketch plans were before the Public Works Committee, to give any finality of information as to these theatres? *A.* I am certain of that.

18422. *Q.* They could only state the views of the Hospital authorities approximately? *A.* Yes.

18423. MR. BARLING: *Q.* You have not, I presume, gone into the technical question as to the relative value of the different buildings? *A.* No.

18424. *Q.* You have formed no opinion on that at all. *A.* No.

18425. MR. VERNON: *Q.* I suppose you could tell us the general cost of beds in London, for instance? *A.* I could not tell you off-hand.

18426. *Q.* Do they not go from £700 to £1,000 each? *A.* I think some of them go more than that. I think if you take some of the American hospitals, built quite recently, you will find that the hospital construction has become so complete and so elaborate in many ways that the cost per bed comes to a very large sum.

18427. MR. DELOHERY: *Q.* I suppose you cannot throw any light on the subject of our Inquiry—that is, as to the cost of the stonework? *A.* I know nothing at all about that.

18428. MR. BARLING: Professor Stuart has given us general deductions from facts which are entirely within his knowledge.

18429. MR. DELOHERY: Yes.

18430. MR. VERNON: *Q.* You told the Board that you are frequently on the works? *A.* Yes.

18431. *Q.* In your opinion, do you consider the officers and foremen there were looking after their business in the best possible way? *A.* I had a note here to say something about that. I should like to say that, so far as I could see, the officers in charge were doing their level best. I have always found them attending to their work. The two men I have seen most of are Mr. Thornton and Mr. Coates. Mr. Coates has left the job and gone somewhere else, I believe; but while he was there he did extremely well, and, so far as I can see, it would be difficult to find a more competent man. As regards Mr. Thornton, he seems to be a man who is always at his work—I have never seen him idle. I have never seen him do anything he ought not to do, and, so far as I can form any opinion about him, I do not think you could have a better man than Mr. Thornton.

18432. MR. DELOHERY: *Q.* I suppose the machinery worked well? *A.* So far as I know.

18433. MR. VERNON: I should like to say, on behalf of my Branch, that we are very much indebted to Professor Stuart for coming here and clearing from the minds of the Board that particular point as regards the expected ultimate cost of the building, and the fact that, taking all things together, it is a satisfactory one, and also for showing how this scheme, which grew from a certain number of beds to a greater number, still kept its due proportion as against the Hospital. I am very much obliged to Professor Anderson Stuart for coming here.

18434. MR. BARLING: I am sure we are all under obligations to Professor Stuart. He has evidently given a great deal of attention to the matter, as the official representative of the Hospital authorities, and he has given an opinion which will certainly carry weight.

18435. WITNESS: I think I ought to add that my opinion, of course, has been partly formed by the daily conversation I have had with the chief executive officer at the Hospital. Mr. Epps is there all day; it is his life work. The Matron is there all day; it is her life work; and the Superintendent, Dr. Blackburn, is there all day—he lives there and sleeps there. Naturally these three people, in their executive offices, each in their own way, have a better opportunity than I could possibly have of seeing what was going on, and I think I might say, as representing them, that they are exactly of the same opinion as I am in regard to the work and the officers. My opinion has been formed after, and to a large extent by, conversation with them, and I think you might take my opinion as being a reflex of theirs.

18436. MR. BARLING: Thank you; we are extremely obliged to you for the trouble you have taken.

[Witness left.]

Appendix IX.

Letter from Professor Anderson-Stuart, Hon. Secretary and Chairman of the Board of Directors, Royal Prince Alfred Hospital, with regard to evidence given by him at the Inquiry; and also comments by Government Architect thereon.

Prince Alfred Hospital, Missenden-road, Camperdown,
The Chairman, Public Service Board, Sydney. Sydney, N.S. Wales, October 28th, 1903.

Sir,

With reference to the evidence given by me before your Board on Friday last, one or two additional points have occurred to me which may be of some importance, and I beg to place these before you. I shall be pleased to testify to the facts on oath. The most important question has reference to the cost of the two Pavilions. Upon this subject I gave evidence as to the relative cost per bed of the new Pavilions and in the Hospital as formerly existing, and the cost per bed of the new Pavilions as estimated by Sir Edward Knox (then the Chairman of the Board), when he gave evidence before the Royal Commission on Public Charities (page 39 of the Report presented in 1899). Sir Edward estimated that the erection of two new pavilions, on the lines of the original scheme of the Hospital, would cost £40,000, and would give 128 additional beds. The cost of the new Pavilions is, I understand, now estimated to be £66,000. At the same proportionate cost as the 128 beds, we find that the total available would have been 211 beds at a total cost of £66,000; whereas for the same money we now get 234 beds—an increase of twenty-three beds—without additional expenditure. But the original scheme—and this is the point I wish specially to bring before the Board—on which Sir Edward's estimate was based, provided only for the wards and the smaller rooms necessary for their administration, as in the existing pavilions, such as the ward kitchen, nurses' rooms and lavatories. The Pavilions now being erected, however, in addition to these rooms, provide vastly increased accommodation of another kind, besides affording ward accommodation; for instance, the large wards, as originally provided for, are much more cheaply built than the greater number of small wards. Instead of two long wards in each Pavilion, containing thirty-two beds in each, and each with one bathroom, w.c., &c., we provide eight small wards, each with its own separate lavatory and w.c. accommodation. Therefore, in proportion to the beds, we provide just four times as much lavatory accommodation.

Outside of these increases, the additional accommodation gained is very great. Firstly, there are two new operating theatres, of the most modern character, with instrument rooms, sterilising and anæsthetic rooms, surgeon's room, two surgeons' bathrooms, cloakroom, w.c., &c., all of which will be far in advance of the existing accommodation at the Hospital. There are also two lecture rooms, which will have several extra rooms attached to them. One of these lecture theatres will be available for the holding of Coroners' Courts, for which additional accommodation has been needed for a long time past. The basements give a very great addition, which may be appreciated when I state that it provides complete accommodation for the Dispensary Department—two large and six other rooms—three rooms for the Rontgen Ray and Photographic Department, a very large apartment for physical exercises of children, and Finsen and other light treatment; a large apartment for the Matron's stores, two large rooms for patients' clothes, a waiting-room for patients' friends, large medical bathrooms for male and female patients, two record rooms, room for a patients' library and the Samaritan Society, w.c. accommodation for out-patients on a considerable scale, w.c. and bath accommodation for the staff, a number of linen closets on different floors, and the wells for lifts, besides a large store for furniture, apparatus, &c., and a large waiting-room for visitors, which we were under an obligation to provide, and the cost of which, under other conditions, was estimated at £1,000. On the ward floors there are clinical rooms for the examination of urines, &c., which are not represented at all in the existing Hospital, and there is also on each floor a room where convalescent patients may have their meals outside of the ward. There will also be one special ward on each floor for special cases, which will be the equivalent of the private wards in the existing Pavilions, towards the cost of which some thousands of pounds were specially donated.

Summarised, therefore, it may be said that, for a sum of £66,000, we got 234 beds, as against 211 to be provided according to the estimate of the original scheme, for the same money, together with a great amount of other and necessary accommodation, the cost of which, if it could be analysed, would be found to cover a large part of the total cost of the two Pavilions. This fully bears out the contention in my evidence that the new Pavilions are, on the estimate of £66,000, remarkably cheap, and that the Hospital and the State are getting good value for the expenditure.

I have, &c.,
ANDERSON STUART,
Chairman.

Public Works Department, Sydney, 6 November, 1903.

The Chairman, Public Service Board.

Day-labour Inquiry, Prince Alfred Hospital.

Sir,

I have perused the communication of Professor Anderson Stuart, Chairman of the Hospital Committee, 28/10/03, to your Board, pointing out how much the original design for the Pavilions has been, in a number of important respects, materially altered and added to, and how such improvements and further accommodation have been effected as subsequent knowledge and requirements have warranted.

This communication further points out that, "for the anticipated cost of £66,000, 234 beds were provided, being an increase of twenty-three beds, without additional expenditure," and he further expresses the opinion "that the Pavilions are, at this estimate, remarkably cheap, and that the Hospital and State are getting good value for the expenditure."

I concur with this expression of opinion, and do not hesitate to state that the cost of the Hospital compares favourably with that of similar institutions elsewhere. It is necessary that I should clearly state, however, that a considerably better result would have been obtained had not the conditions of the Day-labour System raised insuperable difficulties in the way of economical operations.

I have, &c.,
W. L. VERNON,
Government Architect.

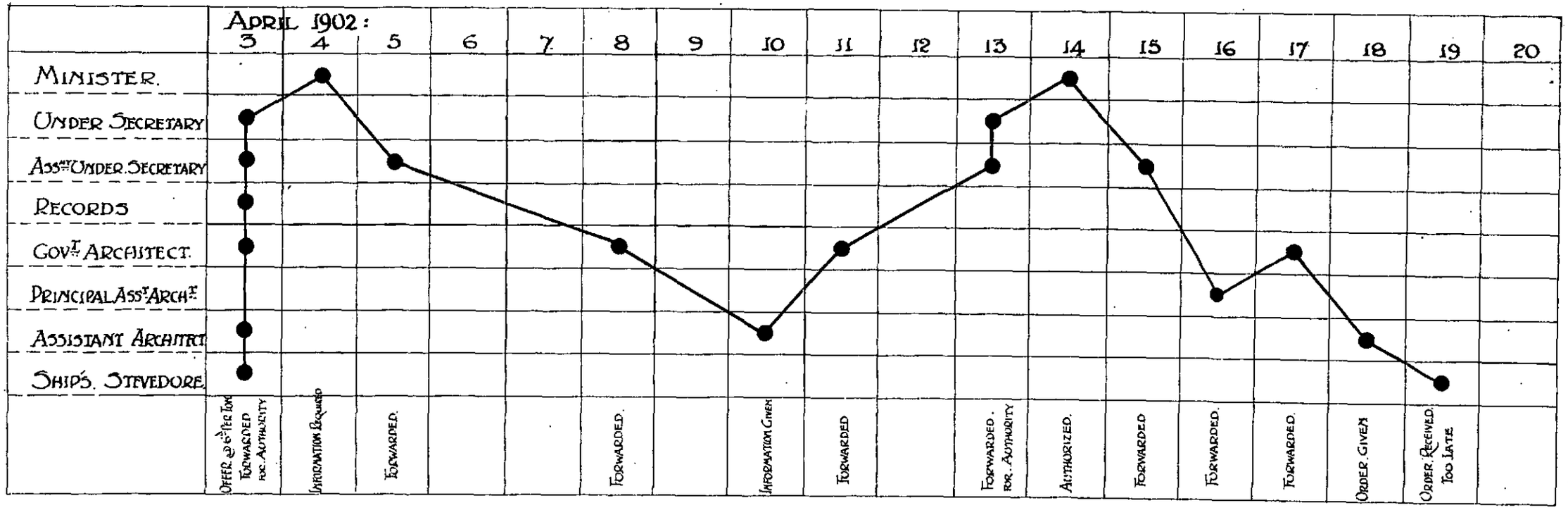
[Five Diagrams.]

Sydney: William Applegate Gullick, Government Printer.—1904.

[4s.]

:FISHER LIBRARY & PRINCE ALFRED. HOSPITAL:

:OFFER OF SAND:

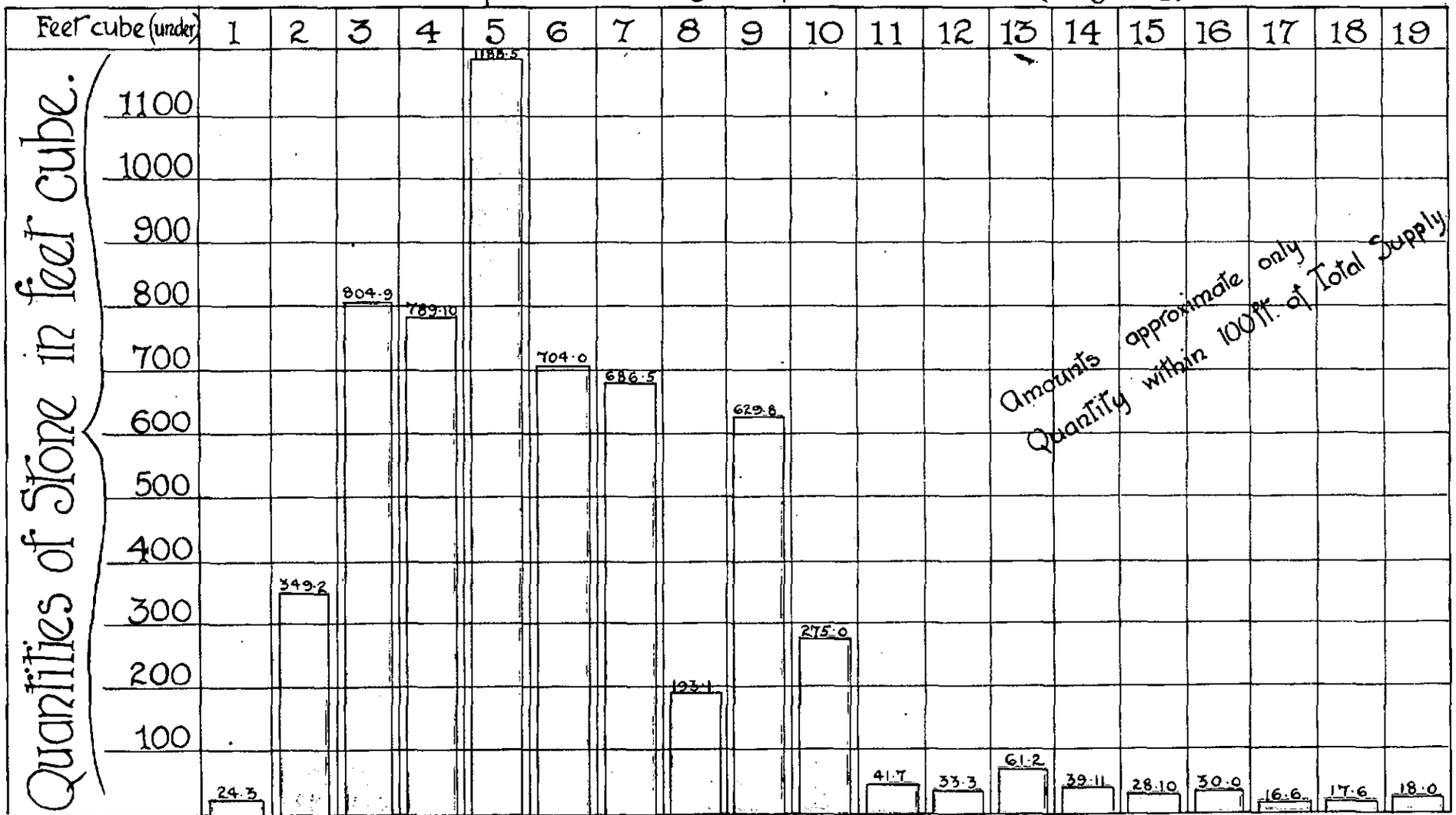


32740 SIG 14

Photo-lithographed by
W. A. Gullick, Government Printer,
Sydney, N.S.W.

PRINCE ALFRED HOSPITAL PAVILIONS

Proportionate Sizes of Stone used. (Purgatory.)



• Note • The above figures are taken from the Invoices for supply of stone received from Quarry.

32740 Sig. 14

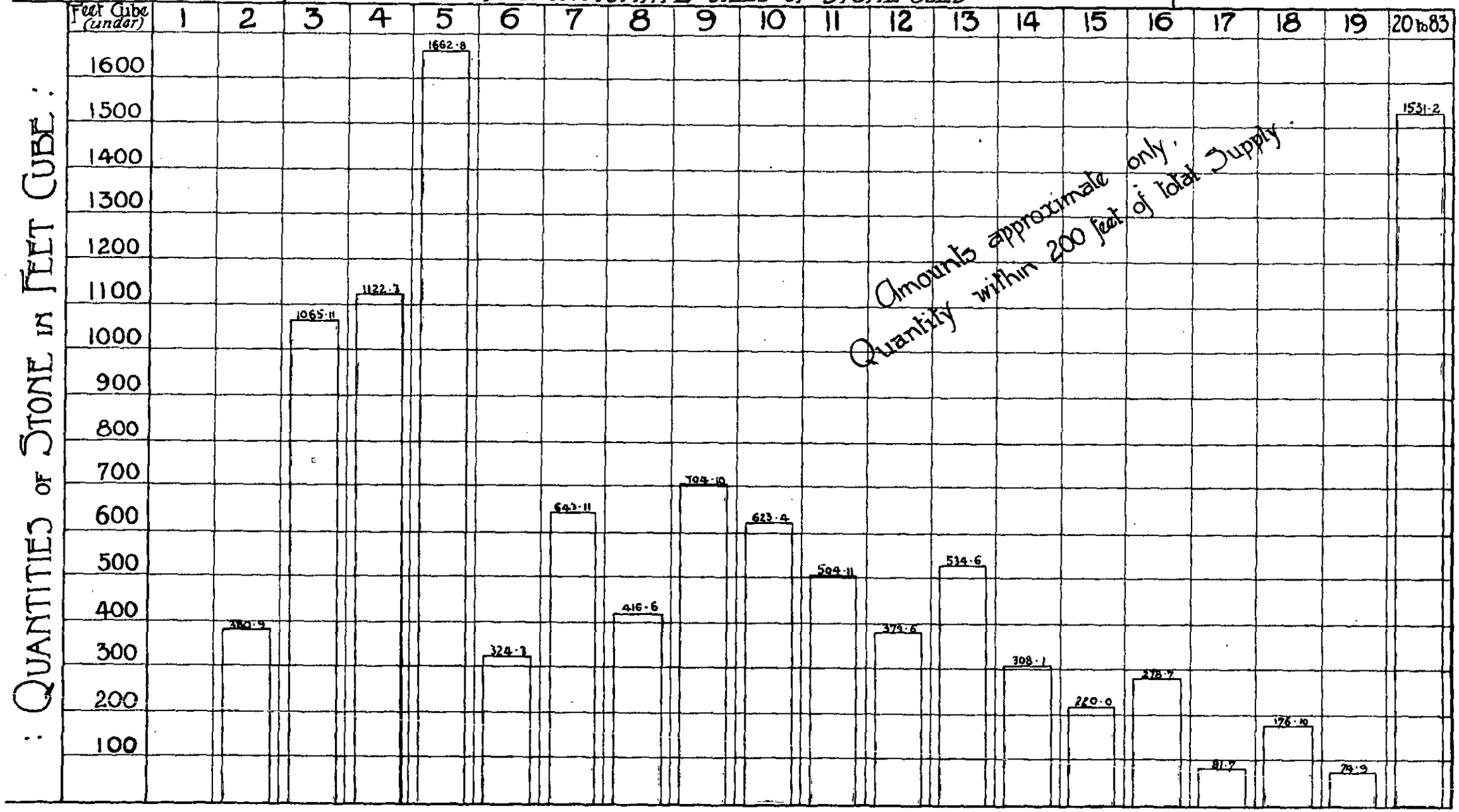
Photo-lithographed by
W. A. Gullick, Government Printer,
Sydney, N.S.W.

Up to Augt : 31st : 1903

PRINCE ALFRED HOSPITAL : SYDNEY : WAVERLEY

PROPORTIONATE SIZES OF STONE USED

: QUANTITIES OF STONE IN FEET CUBE :



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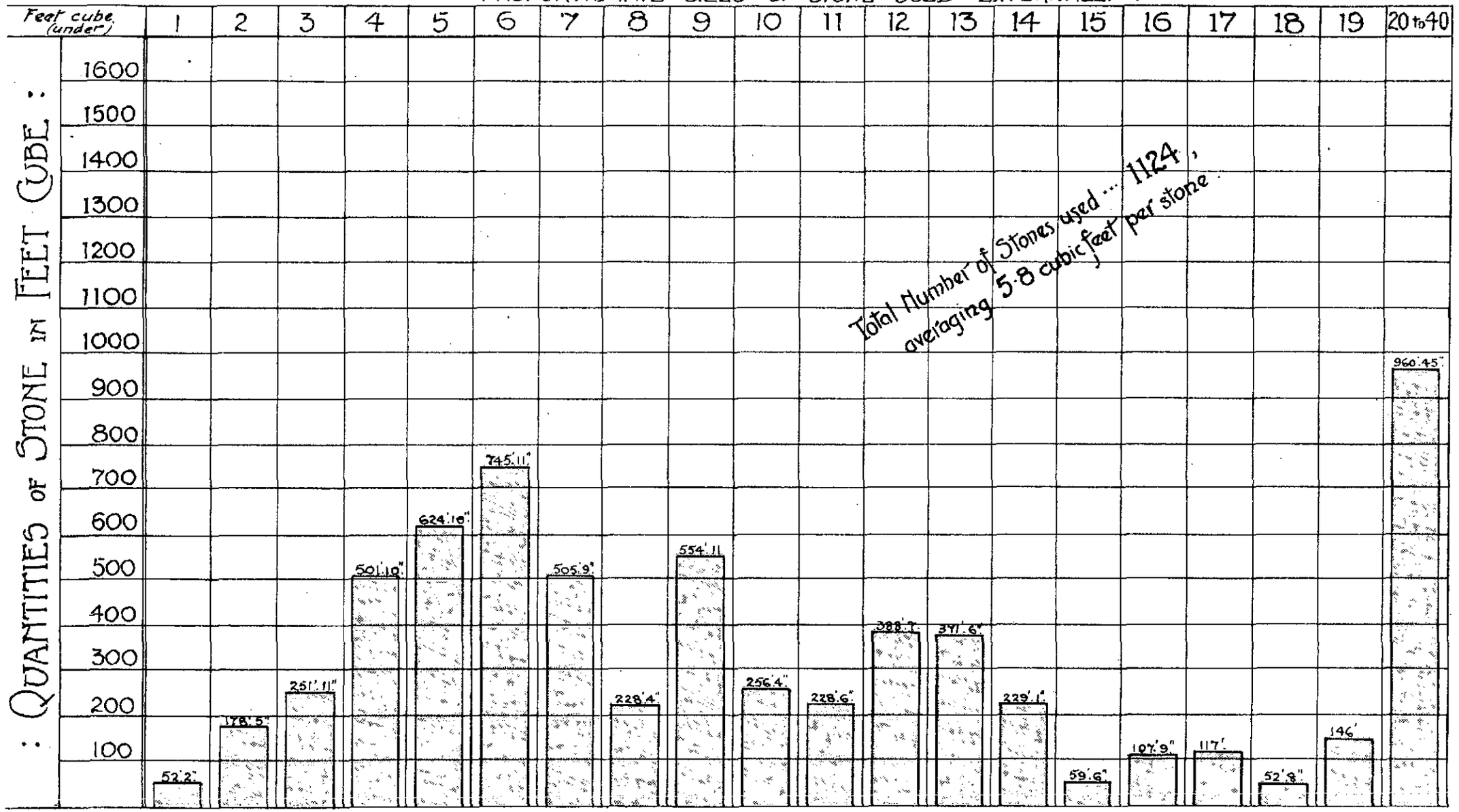
:PRINCE·ALFRED·HOSPITAL: NURSES HOME:

PROPORTIONATE SIZES OF STONE USED EXTERNALLY.



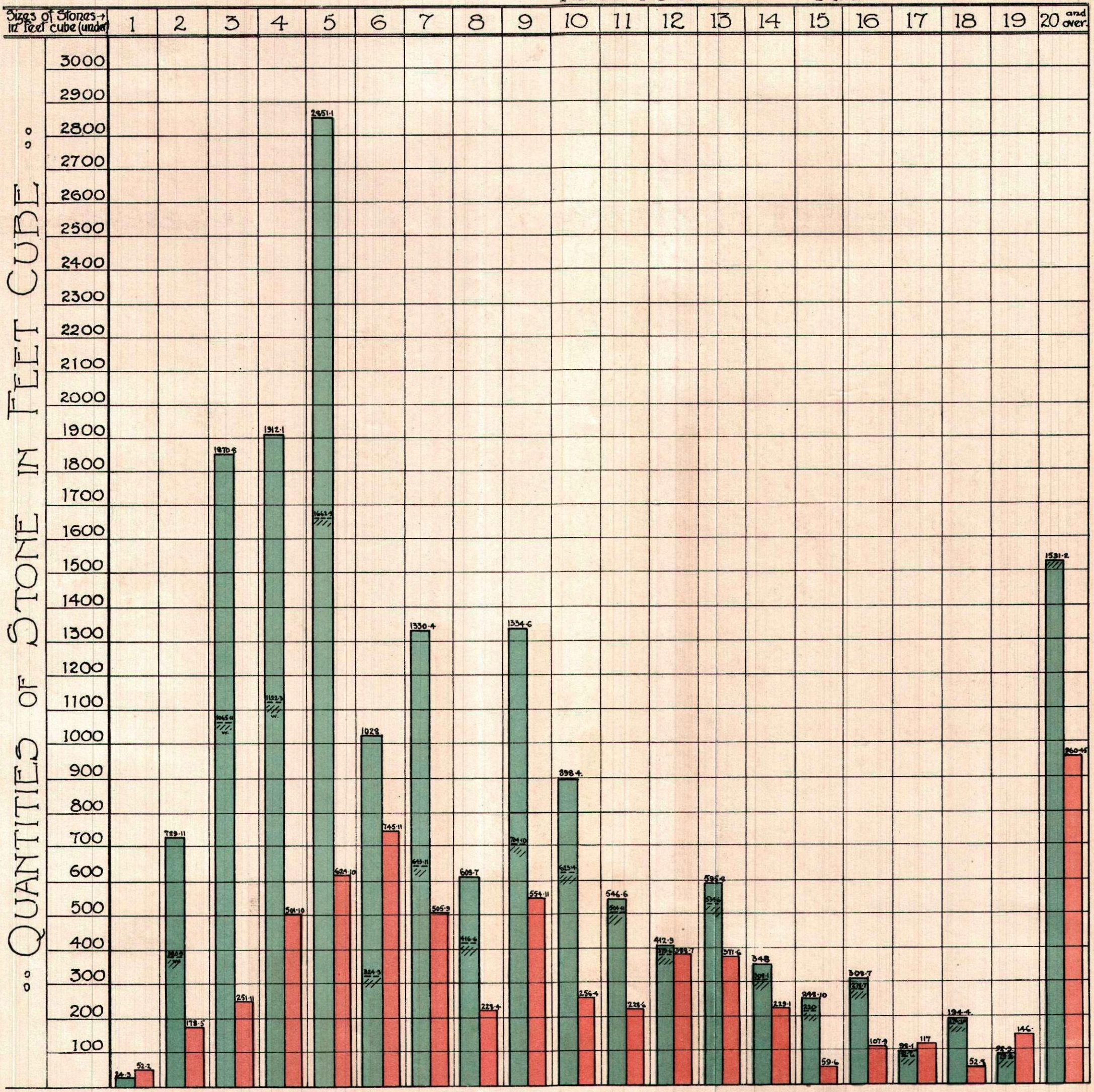
32740 SIG. 14

Photo-lithographed by
W. A. Gullick, Government Printer,
Sydney, N.S.W.

PRINCE ALFRED HOSPITAL.

COMPARISON OF QUANTITIES OF STONE USED IN PAVILIONS WITH QUANTITIES USED (EXTERNALLY) IN NURSES' HOME.

Stone used in Pavilions coloured Blue
" " " Nurses' Home " Red



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Sydney, N.S.W.

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

FISHERIES ACT, 1902.

(REGULATION UNDER.)

Presented to Parliament pursuant to Act No. 119, of 1902, sec. 9.

Ordered by the Legislative Assembly to be printed, 21 *January*, 1904.

Chief Secretary's Office,
Sydney, 23rd December, 1903.

HIS EXCELLENCY the Governor, with the advice of the Executive Council, has been pleased to make the subjoined Regulation respecting the use of Meshing Nets, in accordance with the provisions of the "Fisheries Act, 1902."

JOHN SEE.

REGULATION FOR THE USE OF MESHING NETS.

No meshing net shall be cast, shot, fixed, set, placed, or staked nearer to any meshing net that has been cast, shot, fixed, set, placed, or staked than a distance of 300 fathoms, and it shall be unlawful for any person to occupy any meshing ground for more than twenty-four hours if any duly licensed fisherman in a licensed boat is on such ground waiting to use a meshing net on such ground.

[3d.] 32739 16—

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

SYDNEY HARBOUR TRUST.

(STATEMENT OF ACCOUNTS FOR THE YEAR ENDED 30TH JUNE, 1903.)

Presented to Parliament pursuant to Act No. 1, 1901, sec. 77.

Ordered by the Legislative Assembly to be printed, 21 *January*, 1904.

REVENUE ACCOUNT.

The Sydney Harbour Trust in account with the State Treasurer—Account current for the period 1 July, 1902, to to 30 June, 1903.

		£ s. d.			£ s. d.
1 July, 1902, to 30 June, 1903.	To receipts collected on account of wharfage and tonnage, rent of houses, shops, wharfs, bonds, and miscellaneous items	256,163 6 11	1 July, 1902, to 30 June, 1903.	By Commissioners' salaries ...	4,000 0 0
				By salaries and wages of staff, general maintenance of establishment, and miscellaneous expenditure...	83,881 19 11
				Balance	168,281 7 0
	£	256,163 6 11		£	256,163 6 11
1 July, 1902.	To balance to date	192,713 2 4			
1 July, 1903.	To balance for year ended 30 June, 1903	168,281 7 0			
	Total Balance—available to meet interest on Capital Debt, Sinking Fund, and outstanding liabilities ... £	360,994 9 4			

ROBERT HICKSON, President,
T. F. WALLER, Commissioner,
L. BEATON, Commissioner.
} Commissioners of the Sydney Harbour Trust, Sydney.

J. B. WATSON,
Treasurer and Accountant, Sydney Harbour Trust.

I have examined the vouchers and documents in support of the net receipts credited and net disbursements made within the period 1st July, 1902, to 30th June, 1903, by the Sydney Harbour Trust, as prescribed by the Audit Act, and as required under section 77 of the Sydney Harbour Trust Act, 1900. The net receipts credited within the period named amounted to £256,163 6s. 11d., and the net disbursements to £87,881 19s. 11d., leaving a balance on the year of £168,281 7s., which, with the balance previously credited to 30th June, 1902, £192,713 2s. 4d., makes a total balance to 30th June, 1903, of £360,994 9s. 4d., available to meet interest on Capital Debt, payments to Sinking Fund, and outstanding liabilities.

I hereby certify that the above represents a true statement of the Revenue Account.

(Signed) J. VERNON,
Auditor-General.

G.E.B.

We hereby certify that the writing contained above is a true copy of the original statement whereof it purports to be a copy, the same having been compared therewith by us.

Dated this fifth day of January, 1904.

FRED. E. CASS.
C. F. JACKSON.

HAROLD F. NORRIE, Secretary.

RECONCILIATION OF REVENUE AND EXPENDITURE ACCOUNT TO THE 30TH JUNE, 1903.

	£	s.	d.
Net Revenue, as per Commissioners' Statement	256,145	9	6
Add—Amount shown by Treasury but not by Commissioners	17	17	5
	256,163	6	11
Expenditure.	£	s.	d.
Amount as per Commissioners' Statement...	86,185	1	0
Add—Amount shown by Commissioners, 1901–2 / " " Auditor-General, 1902–3	1,701	17	5
Amount included in Revenue Advance Adjustments should be Key Special Deposit Account	0	5	0
Over-payment Treasurer Voucher No. 30,082, £4 10s. 1d., paid as £4 10s. 7d.	0	0	6
	£87,887	3	11
Deduct—Repayment to Credit Votes, 1901–2	5	4	0
	87,881	19	11
Balance on account of year ended 30 June, 1903...	£168,281	7	0

Reconciliation of Balance to 30th June, 1903.

	£	s.	d.	
Net Revenue available to meet Interest and Sinking Fund from 11th February, 1901, to 30th June, 1903, as per Commissioners' Statement				360,969 15 2
Add—Item credited by Treasury but not by Commissioners, as shown above...	17	17	5	
Vouchers outstanding at 30/6/03, included in Commissioners' Expenditure for year 1901–2	7	2	3	
				24 19 8
				360,994 14 10
Deduct—Item should be "Key Special Deposit Account," as shown above	0	5	0	
Over-payment at Treasury, as shown above	0	0	6	
				0 5 6
Balance to be certified to by the Auditor-General ...				£360,994 9 4

G.E.B.

J. B. WATSON,
Treasurer and Accountant, Sydney Harbour Trust.

We hereby certify that the writing contained above is a true copy of the original statement whereof it purports to be a copy, the same having been compared therewith by us.

Dated this fifth day of January, 1904.

HAROLD F. NORRIE, Secretary.

FRED. E. CASS,
C. F. JACKSON.

STATEMENT OF NET EXPENDITURE OUT OF LOAN VOTES FOR THE PERIOD FROM 1ST JULY, 1902, TO 30TH JUNE, 1903.

Act.	Vote.	Amount.	Expenditure as Audited.		
		£	£	s.	d.
64 Vic. No. 60 ...	Improvements, Circular Quay, East side, &c.	13,450	6,413	19	5
63 " " 42 ...	Wharf, Darling Harbour, and extending railway, &c. ...	100,000	13	3	1
64 " " 60 ...	Wharfs, Jetties, Manly Wharf, &c.	10,000	520	11	9
64 " " 60 ...	Darling Harbour, Resumed areas, &c.	100,000	35,110	13	4
Act 62 of 1901 ...	Towards erection of new wharfs, &c.	75,000	37,864	0	1
Act 108 of 1902...	Towards new berthing accommodation, &c.	50,000	47,999	14	9
			£127,922	2	5

ROBERT HICKSON, President,
T. F. WALLER, Commissioner,
L. BEATON, Commissioner.
} Commissioners of the Sydney Harbour Trust.

J. B. WATSON,
Treasurer and Accountant.

I have examined the vouchers and documents in support of the net disbursements within the period 1st July, 1902, to 30th June, 1903, from each of the Loan Votes above, as prescribed by the Audit Act, and as required under Section 77 of the Sydney Harbour Trust Act of 1900. I hereby certify that the above total of £127,922 2s. 5d. represents the net disbursements incurred by the Sydney Harbour Trust on account of Loan Services during the period above-named.

G.E.B.

J. VERNON,
Auditor-General.

We hereby certify that the writing contained above is a true copy of the original statement whereof it purports to be a copy, the same having been compared therewith by us.

Dated this 5th day of January, 1904.

HAROLD F. NORRIE, Secretary.

FRED. E. CASS,
C. F. JACKSON.

RECONCILIATION

3

RECONCILIATION STATEMENT.—SYDNEY HARBOUR TRUST LOAN EXPENDITURE TO 30TH JUNE, 1903.

		£ s. d.	£ s. d.
Loan Expenditure, as per Harbour Trust Statements	1901–1902	84,758 15 6	
	1902–1903	126,961 3 9	
			211,719 19 3
„ „ Auditor-General	Certified, 1901–1902	83,766 15 5	
	To certify, 1902–1903	127,922 2 5	
			211,688 17 10
Add—Outstanding Vouchers included in expenditure by Trust, but not paid at 30th June, 1903			52 3 11
			211,741 1 9
Deduct—Repayment to Cr. of Vote 63 Vic. No. 42, taken credit for by Trust, but which formed part of Public Works Department expenditure			21 2 6
			£211,719 19 3

Loan Expenditure by Public Works Department, 1901–1902.

Amount agreed upon by Auditor-General, but not included by him in Capital Expenditure until the Capital Debt of the Trust has been adjusted	£13,483 13 9

J. B. WATSON,
Treasurer and Accountant, Sydney Harbour Trust.

G.E.B.

We hereby certify that the writing contained above is a true copy of the original statement whereof it purports to be a copy, the same having been compared therewith by us.
Dated this fifth day of January, 1904.

HAROLD F. NORRIE, Secretary.

FRED. E. CASS.
C. F. JACKSON.

TRUST FUND COLLECTIONS.—SPECIAL DEPOSITS ACCOUNTS.—STATEMENT OF RECEIPTS AND DISBURSEMENTS DURING PERIOD, 1ST JULY, 1902, TO THE 30TH JUNE, 1903.

Account.	Balance, 1st July, 1902.	Receipts, 1902-3.	Total.	Disbursements, 1902–3.	Balance, 30th June, 1903.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Contractors' Deposit Account ...	817 3 6	512 0 0	1,329 3 6	587 0 0	742 3 6
Key Deposit Account	6 6 6	24 10 0	30 16 6	8 5 0	22 11 6
Wharfage guarantee	19 0 0	10 0 0	29 0 0	12 0 0	17 0 0
Suspense Account	.....	561 11 0	.....	.....	561 11 0
Rebuilding Account, Hentsch's Bond	.....	8,016 12 5	.....	.....	8,016 12 5
Applications for leases and survey fees	.....	213 3 0	.....	58 16 0	154 7 0
Unclaimed moneys	1 7 4	.....	.....	.....	1 7 4
					£9,515 12 9

ROBT. HICKSON, President,
T. F. WALLER, Commissioner,
L. BEATON, Commissioner.
} Commissioners of the Sydney Harbour Trust.

J. B. WATSON,
Treasurer and Accountant.

I certify that the above statement represents the transactions under the Trust Fund Collections within the period, 1st July, 1902, to 30th June, 1903, and that the balance shown opposite each amount as at 30th June, 1903, is correct.

J. VERNON,
Auditor-General.

G.E.B.

We hereby certify that the writing contained above is a true copy of the original statement whereof it purports to be a copy, the same having been compared therewith by us.
Dated this fifth day of January, 1904.

HAROLD F. NORRIE, Secretary.

FRED. F. CASS.
C. F. JACKSON.

RECONCILIATION

RECONCILIATION STATEMENT—TRUST FUND COLLECTIONS, SPECIAL DEPOSIT ACCOUNTS.

				£	s.	d.
Receipts.						
As per Commissioners' statement				10,302	16	5
Less—Amounts received by Commissioners in fixed deposit receipts, but not paid to Treasury				965	0	0
				9,337	16	5
Disbursements.						
As per Commissioners' statement	£666	6	0			
Less—Amount paid from Revenue instead of Key Special Deposit Account	0	5	0			
				666	1	0
				£8,671	15	5
Add—Balance as certified to by Deputy Auditor-General to the 1st July, 1902 ...				843	17	4
Total Balance on 30th June, 1903, to be certified by the Auditor-General				£9,515	12	9

G.E.B.

J. B. WATSON,
Treasurer and Accountant, Sydney Harbour Trust.

We hereby certify that the writing contained above is a true copy of the original statement whereof it purports to be a copy, the same having been compared therewith by us.

Dated this fifth day of January, 1904.

HAROLD F. NORRIE, Secretary.

FRED. E. CASS.
C. F. JACKSON.

[3*d*.]

Sydney: William Applegate Gullick, Government Printer.—1904.

1904.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

TWENTY-FIRST GENERAL REPORT

TOGETHER WITH A

RETURN GIVING A RECORD OF THE COMMITTEE'S INQUIRIES

AND

MINUTES OF PROCEEDINGS.

Presented to Parliament in accordance with the provisions of the Public Works Act, 64 Vic. No. 26.

Ordered by the Legislative Assembly to be printed, 21 *January,* 1904.

SYDNEY: WILLIAM APPLEGATE GULLICK, GOVERNMENT PRINTER.

1904.

26411 *5—A [2s.]

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

The Honorable WILLIAM ROBERT CAMPBELL, Vice-Chairman.
The Honorable ALEXANDER KETHEL.
The Honorable JOHN HUGHES.

LEGISLATIVE ASSEMBLY.

JOHN MCFARLANE, Esquire, Chairman.
JOHN STUART HAWTHORNE, Esquire.
JAMES SINCLAIR TAYLOR MCGOWEN, Esquire.
SAMUEL WILKINSON MOORE, Esquire.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

TWENTY-FIRST GENERAL REPORT.

To His Excellency Sir HARRY HOLDSWORTH RAWSON, Admiral in the Royal Navy, Knight Commander of the Most Honourable Order of the Bath, Governor of the State of New South Wales and its Dependencies in the Commonwealth of Australia.

MAY IT PLEASE YOUR EXCELLENCY,—

The Parliamentary Standing Committee on Public Works, appointed during the first session of the present Parliament, under the Public Works Act of 1900, 64 Vic. No. 26, have the honor to submit, in accordance with clause 13 of the Public Works Act, the following General Report of their proceedings since the date of their last General Report, 11 June, 1903:—

WORKS UNDER CONSIDERATION AT DATE OF LAST GENERAL REPORT.

1. At the date of the last General Report, the following works were under consideration:—

WORKS RESPECTING WHICH THE INQUIRIES WERE IN PROGRESS.

Southern Breakwater, Entrance to Clarence River.
Railway from Wellington to Werris Creek.
Railway from Wyalong to Hillston.
Railway from Maitland to South Grafton.
Northern Breakwater, Entrance to Clarence River.
Camden Haven Improvement Works.
Hastings River Improvements.
Improvements, Stewart's Island and Nambucca River.
Railway from Singleton to Cassilis, with branch from Denman to Muswellbrook.
Railway from Murwillumbah to the Tweed Heads.
Railway from Lockhart to Clear Hills.

WORKS RESPECTING WHICH THE INQUIRIES HAD NOT THEN BEEN OPENED.

Tramway from Wallsend to West Wallsend.
Reclamation Works, Hen and Chicken Bay.
Water Supply Works for the City of Grafton and South Grafton.
Railway from Liverpool to Mulgoa.
Railway from Carlingford to Dural.
Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

WORKS SINCE REFERRED TO THE COMMITTEE.

2. There have also been referred to the Committee since the date of the last Report:—

Water Supply for Town of Broken Hill—Dam and Tramway at Umberumberka Creek.
Water Supply for Town of Broken Hill—Dam and Tramway at Umberumberka Creek. (Second reference.)

COMPLETED

Completed Inquiries.

3. Of the works included in the above lists, the inquiries respecting the following have been completed, and most of the reports thereon presented to Parliament:—

Southern Breakwater, entrance to Clarence River.
Northern Breakwater, entrance to Clarence River.
Railway from Maitland to South Grafton.
Camden Haven Improvement Works.
Hastings River Improvements.
Improvements Stewart's Island and Nambucca River.
Railway from Lockhart to Clear Hills.
Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.
Water Supply for Town of Broken Hill—Dam and Tramway at Umberumberka Creek.

Southern and Northern Breakwaters, Entrance to Clarence River.

In the inquiry respecting the expediency of constructing a breakwater on the southern side of the entrance to the Clarence River, the Committee resolved that it was inexpedient that the breakwater should be carried out to the full extent submitted; but they recommended that it be constructed a further length of 1,350 feet, at a cost not exceeding £77,440. This recommendation is in accordance with what, as the result of their inquiry and inspection, they consider the wisest course to pursue; and the Principal Engineer for Harbours and Rivers, who, though advocating the carrying out of the southern breakwater to the full extent and also a breakwater on the northern side of the Clarence entrance, admits that, for the present and until the result is seen, the southern breakwater may with advantage be constructed to a length 1,000 feet short of that proposed. The construction of this breakwater to the length stated is expected to improve the river entrance to an extent quite sufficient for present requirements, and until, by the building of railways, increase of population, and industrial development, further expenditure becomes justifiable; and that being so, the proposal to construct a northern breakwater, at an estimated cost of £208,500, was negatived.

Railway from Maitland to South Grafton.

With regard to the Railway from Maitland to South Grafton, the Committee, after an exhaustive inquiry, decided that it was expedient it should be constructed; but they added to their resolution a proviso that a betterment-tax should be imposed on the alienated lands within the area benefited by the railway until the line becomes self-supporting; and, in addition, a moiety of the revenue, whether from sale or lease, derived from the area of land still in possession of the Crown within the same radius, be devoted to writing down the capital cost of the railway.

Camden Haven Improvement Works.

In this inquiry, with reference to the expediency of carrying out works in completion of the Camden Haven Harbour Improvements Works, the proposal being to extend the northern wall at the harbour entrance a further distance of 2,900 feet, and the southern wall 800 feet (456 feet of which length, however, has been carried out by the Department), at an estimated cost, including £3,437 already spent on the southern wall, of £43,650, the Committee came to the conclusion that it was inexpedient to carry out the proposed works to the full extent submitted, but recommended that the southern wall be completed at a cost not exceeding £4,000. This, with what has already been spent, will make the total expenditure upon the harbour works at Camden Haven, £27,563. Locally, it is believed the carrying out of the breakwater on the south side to the length mentioned will have a marked effect in improving the channel, and in a corresponding degree the harbour entrance; and though the Principal Engineer of the Harbours and Rivers Department favours the construction of a north as well as a south breakwater, the Committee are of opinion that their recommendation will meet requirements, and that any larger expenditure at the present time is not justified either by the trade of the port or the nature and productiveness of the district.

HASTINGS RIVER IMPROVEMENTS.

The proposed Hastings River Improvements, comprising the completion of the southern training-wall at the entrance to the river and the construction of an eastern training-wall and portion of a northern breakwater, were negatived by the Committee on the ground that the trade of the river and the district did not justify the expenditure, which amounted, as estimated, to £74,052.

IMPROVEMENTS, STEWART'S ISLAND AND NAMBUCCA RIVER.

In the inquiry relating to the proposed improvements at Stewart's Island and Nambucca River, comprising the construction of a training-wall along the eastern side of Stewart's Island, 7,650 feet in length, and a southern breakwater at the river entrance, 3,300 feet long, at an estimated total cost of £82,535, the Committee, after full consideration, decided that it was not expedient to construct the works as proposed; but they recommended that the southern breakwater should be made to a length of 2,100 feet, at a cost not exceeding £26,000, such sum to be provided by applying to the carrying out of the breakwater the unexpended balance of the amount authorised for the construction of the works recommended by the Public Works Committee in 1898. The Committee are of opinion that the trade of the port and the resources of the district do not justify a larger expenditure than the amount authorised.

RAILWAY FROM LOCKHART TO CLEAR HILLS.

The proposal to construct a line of railway from Lockhart to Clear Hills the Committee negatived. For the reasons principally that the district is not without railway facilities, and the traffic which the new line might attract would be largely that which now goes to existing lines, they consider that the construction of the line may very fairly be postponed for some years.

TRAMWAY FROM EAST TO WEST MAITLAND AND ON TO THE STANFORD MERTHYR AND PELAW MAIN COLLIERIES.

In the case of the proposed tramway from East to West Maitland and on to the Stanford Merthyr and Pelaw Main Collieries, the Committee came to the conclusion that it is expedient the tramway should be constructed, this decision being arrived at in view of the probability of a large and increasing population at the mining townships to be served by the tramway, and the expert evidence as to the value and importance of the coal measures in the district. The Railway Commissioners admit that the East to West Maitland portion of the line would pay working expenses and interest on capital, and with respect to the section between West Maitland and the mines the Tramway Traffic Superintendent states in his report to the Commissioners that, should the coal-mines be opened up to the extent anticipated within the next two years, the estimate of revenue which could be depended upon at present might be increased 50 or even 100 per cent. As it is not likely the tramway will be constructed within the next two years the line, according to this opinion, should pay from the time the trams commence running.

WATER SUPPLY FOR TOWN OF BROKEN HILL—DAM AND TRAMWAY AT UMBERUMBERKA CREEK.

The proposed Dam and Tramway at Umberumberka Creek in connection with the water supply for the town of Broken Hill was inquired into by the Committee as a matter of urgency in the latter half of 1903, and it was resolved that it was not expedient to construct the works; but the Committee recommended that the Yancowinna diversion scheme be carried out by the Broken Hill Water Supply Company on the terms stated in one of their proposals to the Government, viz., that the company retain possession of their present works until the expiration of their present lease, and construct the Yancowinna diversion, for the carrying out of which they be granted such extension of lease as may be necessary, based on actuarial computation, to enable them to recoup the outlay. This recommendation of the Committee, however, on being submitted to the Legislative Assembly in a motion made by the Honorable the Minister for Public Works, led to the matter being referred back to them for further consideration and report, on the ground that it required further investigation; and another inquiry is now proceeding.

INQUIRIES NOT YET COMPLETE.

4. With regard to the following works the inquiries are unfinished, but most of them are almost complete, and the works will shortly be reported upon :—

Railway from Wellington to Werris Creek.
Railway from Wyalong to Hillston.
Railway from Singleton to Cassilis, with branch from Denman to Muswellbrook.
Railway from Murwillumbah to the Tweed Heads.
Tramway from Wallsend to West Wallsend.
Reclamation Works, Hen and Chicken Bay.
Water Supply Works for the City of Grafton and South Grafton.
Railway from Liverpool to Mulgoa.
Railway from Carlingford to Dural.
Water Supply for Town of Broken Hill—Dam and Tramway at Umberumberka Creek (Second reference).

RAILWAY FROM WELLINGTON TO WERRIS CREEK.

In the Committee's last General Report, it was stated that the inquiry with respect to the proposed Railway from Wellington to Werris Creek was interrupted by the temporary stoppage of the work of the surveyors engaged in the trial survey connected with the alternative line, Gilgandra to Curlewis. This survey has not since then been resumed, but it is anticipated that sufficient information will shortly be available to enable the Committee to complete their inquiry.

RAILWAY FROM WYALONG TO HILLSTON.

The inquiry with reference to the proposed Railway from Wyalong to Hillston is almost complete. The Committee, in addition to taking the evidence of official witnesses in Sydney, have inspected the country which would be served by the line and that in the vicinity of alternative routes, and they have examined local witnesses at the various population centres. It is necessary to supplement the evidence to some extent in Sydney, and the report will then be prepared.

RAILWAY FROM SINGLETON TO CASSILIS, WITH BRANCH FROM DENMAN TO MUSWELLBROOK.

With regard to the proposed Railway from Singleton to Cassilis with a branch from Denman to Muswellbrook, the Committee have yet to visit the district in order to go through the country that would be affected by the line and examine local witnesses.

RAILWAY FROM MURWILLUMBAH TO THE TWEED HEADS.

The inquiry relating to the proposed Railway from Murwillumbah to the Tweed Heads, which at the date of the last General Report had proceeded as far as the taking of the official evidence in Sydney, is now complete with the exception of some necessary evidence from the Engineer-in-Chief for Railway Construction respecting a deviation suggested by some of the local residents. The witnesses examined include the Railway Commissioner of Queensland and the late Minister for Railways in that State, their evidence being required in relation to the Queensland railway from the Tweed Heads to Nerang.

TRAMWAY FROM WALLSEND TO WEST WALLSEND.

Respecting the proposed Tramway from Wallsend to West Wallsend the official evidence in Sydney and the local evidence at Wallsend and West Wallsend has been taken, and the inquiry now awaits the result of an inspection by the Chief Inspector of Coal-mines relative to the position and extent of the coal that may be under the surface traversed by the tramway, with a view to ascertaining whether the coal could be won without injury to the tramline.

RECLAMATION WORKS, HEN AND CHICKEN BAY.

In this inquiry, in which the proposal is to construct a stone retaining-wall extending in a curve round the bay near the present low-water mark, and to fill in the area at the back to a level of 3 feet above high-water with material dredged from the

the bay, the surface to be levelled off and planted with grass, and storm-water sewers constructed as required, at an estimated cost of £66,300, the evidence is practically complete, and the Committee will arrive at a decision in the matter very shortly.

Water Supply Works for the City of Grafton and South Grafton.

This inquiry has been only recently opened, and it will probably be some weeks before it can be closed, as it will be necessary not only to complete the evidence required in Sydney, but to take evidence in Grafton and make an inspection in connection with the different schemes placed before the Committee.

Railway from Liverpool to Mulgoa.

The inquiry relating to the proposed Railway from Liverpool to Mulgoa is complete as far as taking the official evidence in Sydney, but the Committee have still to visit the district for the purposes of inspection and the examining of local witnesses.

Railway from Carlingford to Dural.

This proposal, which was before a previous Committee, has been carefully investigated, and will shortly be reported upon.

Water Supply for Town of Broken Hill—Dam and Tramway at Umberumberka Creek. (Second reference).

The second inquiry relative to the proposed Dam and Tramway at Umberumberka Creek in connection with the water supply for the town of Broken Hill is, as already stated, being proceeded with, and as it is being, as far as possible, confined to matters respecting which it was mentioned in the Legislative Assembly new evidence was forthcoming, it should very shortly terminate.

Return, and Minutes of Proceedings.

5. Appended to this Report is a return containing a record of the inquiries by the several Public Works Committees appointed since 1888, and also a copy of the present Committee's Minutes of Proceedings.

JOHN McFARLANE,
Chairman.

Office of the Parliamentary Standing Committee on Public Works,
Sydney, 14 January, 1904.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

RECORD OF INQUIRIES.

LIST of Proposed Public Works inquired into by the several Committees, with the results of their inquiries, from 27 August, 1888, the date of the first sitting of the first Committee appointed under the Act, to 14 January, 1904.

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
1888.		£	£	£	£	
4 Sept. to 22 Oct.	Improvements to the Circular Quay.	120,000	125,000	5,000		The Committee recommended an alteration in the plan of these improvements, by which the total estimated cost would be increased to £125,000.
26 Sept. to 22 Oct.	Storage reservoir at Potts' Hill, and second line of pipes to Crown-street.	120,000 165,000	285,000	.....	.....	Recommended as proposed.
13 Sept. to 22 Oct.	New Central Police Court	48,000	48,000	.....	.....	Recommended as proposed.
4 Oct. to 22 Oct.	Drainage works, Manly...	34,114	22,000	.....	12,114	The Committee recommended the adoption of a modified plan of these drainage works, by which the total estimated cost would not exceed £22,000.
10 Oct. to 22 Oct.	Drainage works, North Shore.	77,062	107,000	29,938	.....	The Committee recommended the adoption of the complete scheme proposed in relation to this work, and the estimated cost of which, as shown by the evidence, is £107,000.
31 Aug. to 22 Oct.	Harbour improvements at Newcastle.	112,000	112,000	.....	.....	Recommended as proposed.
19 Sept. to 22 Oct.	Wharfage accommodation, Woolloomooloo Bay.	42,000	.....	.....	42,000	The Committee were of opinion that the proposed expenditure was not justified either by the requirements in connection with the wharfage accommodation of the port, or by the nature of the proposal if regarded as a scheme for the improvement of a very valuable Government property.
16 Nov. to 1889. 11 Jan.	Bridge at the Spit, Middle Harbour.	62,000	.....	.....	62,000	The Committee decided that the proposed expenditure was not justified by the evidence, and that a steam-punt would meet the requirements of the district in the vicinity of the proposed work for some years to come.
1888. 7 Dec. to 1889. 27 Aug.	Drainage works for the Western Suburbs.	830,304	830,304	.....	.....	Recommended as proposed.
26 June to 30 Sept.	Improvements to the entrance of the Richmond River.	326,000	326,000	.....	.....	The Committee recommended that the proposed works be carried out in a certain order, so that the results from the works first constructed might be ascertained before others were proceeded with.
9 Oct. to 11 Dec.	Railway to connect North Shore Railway with Port Jackson, at Milson's Point.*	262,000	.....	.....	262,000	The Committee considered, for various reasons stated in their report on the subject, that the work as proposed should not be carried out.
29 Aug. to 12 Dec.	Railway from Culcairn to Corowa.	197,300 (or £4,184 per mile.)	164,500 (or £3,500 per mile.)	.....	32,800	The Committee were of opinion that this line should be constructed at a cost not exceeding £3,500 per mile.
22 Aug. to 19 Dec.	Railway from Goulburn to Crookwell.	198,300 (or £5,984 per mile.)	148,500 (or £4,500 per mile.)	.....	49,800	The Committee considered that the cost of this railway should not exceed £4,500 per mile, and that a saving should also be effected by utilizing a certain portion of the present main line instead of taking the proposed railway through a part of the city of Goulburn.
1890. 22 Jan. to 6 Feb.	Dredge and plant for Sydney Harbour.	30,000	.....	.....	30,000	The evidence showed that this class of dredge was not required.
1889. 25 Sept. to 1890. 18 Feb.	Railway from Nyngan to Cobar.	207,360	207,360	.....	.....	The Committee recommended the construction of this railway as part of a line which should be extended to Wilcannia and Broken Hill.
14 Jan. to 11 Feb.	Offices for the Board of Water Supply and Sewerage.	50,000	50,000	.....	.....	Recommended as proposed.
14 Jan. to 6 Feb.	Reticulation of the Western Suburbs Drainage Scheme.	713,592	713,592	.....	.....	Recommended as proposed.
14 Jan. to 11 Feb.	Extension of Sydney Water Supply to Southern Suburbs — Hurstville and Rockdale.	66,000	.....	.....	66,000	This expenditure was rendered unnecessary by reason of a temporary water-supply scheme being sufficient to meet requirements for some years.
19 Nov. to 2 April.	Railway from Marrickville to the Burwood Road.	90,250	90,250	.....	.....	Recommended as proposed.
	Carried forward.....£	3,751,282	3,229,506	34,938	556,714	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
	Brought forward ...£	£ 3,751,282	£ 3,229,506	£ 34,938	£ 556,714	
1890. 23 Oct. to 24 April.	Improvements to the entrance of the Clarence River.	580,000	211,900	.....	369,000	In this case the Committee recommended the construction of only a portion of the works proposed, as they were of opinion that when this portion had been constructed it might be found that the remainder would not be required.
31 Oct. to 15 April.	Breakwater at Byron Bay.	241,723	241,723	.....	.....	The original estimate for this work was £162,000; the increase was due to a difficulty in obtaining stone.
4 Dec. to 24 April.	Railway from Kiama to Nowra.	381,390	381,390	.....	.....	In this case there was an original estimate of £441,663. The reduction was due to an amended estimate made by the Acting Engineer-in-Chief for Railways since the railway was referred to the Committee.
12 Nov. to 24 April.	Railway from Grafton to the Tweed.*	1,728,100	800,000	.....	928,100	The Committee recommended that this railway should be constructed from Lismore to Murwillumbah, instead of from Grafton to Murwillumbah, the Committee's recommendation involving a length of about 60½ miles as compared with 140 miles 76 chains, the length of the line as referred to them by the Legislative Assembly.
15 Jan. to 24 April.	Railway from Cootamundra to Temora.	138,000 (or £3,656 per mile.)	125,400 (or £3,300 per mile.)	.....	12,600	The Committee considered that the cost of constructing this railway should not exceed £3,300 per mile.
23 Jan. to 24 April	Railway from Moss Vale to Robertson.	84,900	.....	.....	84,900	The Committee negatived this proposal because they considered another route, described in their report, was preferable.
23 Jan. to 25 Mar.	Railway from Mudgee to Gulgong.	109,330	.....	.....	109,330	The Committee decided against this work, on the ground that any extension of the Mudgee Railway should form part of a more comprehensive proposal, the consideration of which should be deferred until after the suggestion for the connection of the Northern and Western systems, by a line between Dubbo and Werris Creek, has been dealt with.
12 Feb. to 24 April.	Bridge over Tarban Creek, Parramatta River.	26,000	.....	.....	26,000	The Committee considered this bridge to be unnecessary.
20 Feb. to 15 April.	Bridge over the Hunter River, at Jerry's Plains.	20,000	.....	.....	20,000	The Committee considered that a less expensive bridge would be sufficient to meet requirements.
25 Feb. to 24 April.	Bridge to connect Bullock Island with the mainland at Newcastle.	33,000	.....	.....	33,000	The Committee considered that this proposed expenditure was premature, pending certain reclamation works.
12 Feb. to 21 May.	Iron Bridge at Cowra ...	26,537	26,537	.....	.....	The original proposal represented an expenditure of £69,971, which amount was afterwards reduced to £26,537, as the result of a revision of the system of bridge-building in the Colony.
22 Jan. to 21 May.	Railway from Molong to Parkes and Forbes.	433,000	433,000	.....	.....	Recommended as proposed.
28 May to 8 July.	Hospital for the Insane upon the Kenmore Estate, near Goulburn.*	120,000	.....	.....	120,000	This proposed work, after being partly considered, was withdrawn from the Committee by resolution of the Assembly.
28 May to 21 Aug.	Railway to connect the North Shore Railway with the deep waters of Port Jackson, at Milson's Point.* (Second Reference.)	231,156	231,156	.....	.....	This proposal was before the Committee on a previous occasion (estimated cost, £262,000), when it was negatived; but having been referred to the Committee for further consideration, and circumstances appearing in the second inquiry which justified the construction of the railway, the Committee approved of the proposed work.
10 Dec. to 13 May, 1891.	Hospital Buildings, Macquarie-street.	140,000	56,000	.....	84,000	In this case, two sets of plans for the buildings were submitted to the Committee, one representing a design that was estimated to cost £140,000, and the other a design to cost £56,000, and the Committee approved of the latter.
1891. 11 Feb. to 25 Mar.	College for the Training of Teachers of Public Schools.	37,500	37,500	.....	.....	Recommended as proposed.
1 Feb. to 21 April.	Extension of the Kiama to Nowra Railway into the town of Nowra.	75,000	75,000	.....	.....	Recommended as proposed.
24 Feb. to 14 May.	Railway from Cobar to Cockburn.	1,168,000	1,018,000	.....	150,000	The Committee recommended the construction of this railway as far as Broken Hill only, which would reduce the proposed expenditure by £150,000.
22 Jan., 1890, to 19 May, 1891.	Cable Tramway from King-st., *via* William-street, to Ocean-street.	80,000	80,000	.....	.....	Recommended as proposed.
25 Nov., 1890, to 3 June, 1891.	Cable Tramway through George, Pitt, and Harris Streets, Sydney.	120,000	.....	.....	120,000	The Committee considered that it was not expedient at present, for reasons stated in their report, that this tramway should be constructed.
	Carried forward .....£	9,525,818	6,947,112	34,938	2,613,644	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of Inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
1892.	Brought forward .. £	9,525,818	6,947,112	34,938	2,613,644	
5 May to 2 June.	Improvements at Darling Island.	142,000	.....	.....	142,000	The Committee considered that the proposed works might be postponed for the present without inconvenience, and that a more suitable design might be submitted.
7 June to 12 July.	Stormwater sewers discharging into Johnstone's Bay.	51,352	51,352	.....	.....	Recommended as proposed.
15 June to 4 Aug.	Reservoir at Centennial Park for Sydney Water Supply.	83,000	83,000	.....	.....	Recommended with an alteration of site.
14 July to 24 Aug.	Water Supply for Wollongong and the surrounding districts.	66,000	30,000	.....	36,000	The Committee found that the Water Supply proposed for the surrounding districts was not needed, and that the estimate of cost for supplying Wollongong might be reduced to £30,000.
28 July to 24 Aug.	Second pipe-line from Walka to Buttai, for Hunter River District Water Supply.	50,000	50,000	.....	.....	Recommended as proposed.
26 July to 9 Aug.	Sewerage works at Cottage Creek.	25,000	13,000	.....	12,000	The amount of £25,000 provided for a covered sewer; but the Committee found that a cover was not necessary at present, and that by constructing an open sewer the cost could be reduced by £12,000.
21 April, 1891, to 27 May, 1892.	Railway from Glen Innes to Inverell.*	427,400	.....	.....	427,400	The evidence in this case showed that the estimated cost of constructing the railway was excessive, and indicated the probability of a serious annual loss in the working of the line. In addition to this, the Committee were not as fully informed as desirable with regard to connecting Inverell not only with the Great Northern Railway but with the coast, a matter of considerable importance in the inquiry
31 May to 18 Aug.	Railway from Jerilderie to Deniliquin.	148,000	....	.. ..	148,000	The Committee were of opinion that the consideration of this proposed work should be postponed until it should be determined by Parliament as a matter of public policy to purchase the Deniliquin to Moama Railway.
12 July to 24 Aug.	Lunatic Asylum at Kenmore, near Goulburn.* (Second Reference.)	150,000	150,000	.....	.....	Recommended as proposed.
14 June to 28 Sept.	Railway from Grafton to Lismore.*	662,000 (or £8,000 per mile.)	108,000 (or £6,000 per mile.)	.....	554,000	The Committee decided that, for the present, only the Lismore to Casino section of the proposed railway should be constructed, that the cost should not exceed £6,000 per mile, and that the betterment principle be applied to the land to be served by the proposed line.
10 July to 26 Oct.	Railway from Eden to Bega.	564,000 (or £15,350 per mile.)	.....	.....	564,000	The Committee considered that the present resources of the district did not warrant the construction of such an expensive line, but they were of opinion that a cheaply constructed railway might be favorably considered.
22 June to 4 Oct.	Sewerage Works for Parramatta.*	75,926	.....	.....	75,926	The Committee were of opinion that the sewage farm included in the scheme was too small for the purpose, and that the sewage should be dealt with by precipitation and filtration or other effective modern process at a proposed pumping station at Clay Cliff Creek.
12 Oct. to 21 Dec.	Water Supply for Tamworth.	22,500	22,500	.....	.....	Recommended as proposed, with a provision as to the quantity of water obtainable, and the resumption of land surrounding the well in the drift forming the source of supply.
14 Sept. to 16 Nov.	Water Supply for Lithgow	15,000	15,000	.....	....	Recommended as proposed.
15 Sept. to 16 Nov.	Water Supply for Armidale.	43,500	43,500	.....	.....	Recommended as proposed.
17 Nov. to 10 Jan. 1893.	Railway from Glen Innes to Inverell.* (Second Reference.)	421,400 (or £7,975 per mile).	369,862 (or £7,000 per mile).	.....	51,538	The Committee considered it expedient this railway should be constructed, provided that the cost did not exceed £7,000 per mile, that special local rates were charged until the railway paid working expenses and interest on cost of construction, and that the betterment principle was applied to the land served by the railway.
14 Feb. to 8 Mar.	Waterworks for the town of Junee.	45,000	45,000	.....	.....	The Committee recommended that these works should be carried out, conditionally upon the Railway Commissioners undertaking to enter into an agreement for a period of not less than ten years to pay a minimum of £1,900 per annum for water supplied for railway purposes at Junee and Bethungra.
14 Nov., 1893, to 11 Jan., 1894.	Railway from Narrabri to Moree.	153,000	153,000	.....	.....	Recommended as proposed, with the condition that the work be not undertaken until a Betterment Act is passed.
	Carried forward.....£	12,670,896	8,081,326	34,938	4,624,508	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
1894.	Brought forward ...£	12,670,896	8,081,326	34,938	4,624,508	
7 Feb. to 22 Mar.	Sewerage Works for Parramatta.* (Second reference.)	75,926	.....	.....	75,926	The Committee decided that it was not expedient the proposed works should be carried out, for the reasons that the scheme had not been adequately considered, and that, according to the evidence, Parramatta was neither willing nor able to pay the rate necessary to provide the interest on the expenditure, and did not want the proposed works.
6 Mar. to 16 April.	Deviation to avoid the Lithgow Zigzag.	181,072	.....	... .	181,072	The Committee were of opinion that as the professional evidence, as well as much of the evidence generally, indicated that the proposed deviation was not a matter of urgency it was not expedient the work should be carried out.
9 April, to 22 May.	Railway from Temora to Wyalong.*	104,430	.....	.....	104,430	The Committee were of opinion that the decision upon the proposal should be deferred for six months.
11 April, to 20 June.	Removal of Pyrmont and Glebe Island Bridges.*	296,500	.....	.....	296,500	The Committee recommended that when renewal becomes necessary the existing bridges at Darling Harbour and Glebe Island should be replaced by timber structures of a kind specified in their report, which report, however, in consequence of the sudden dissolution of Parliament was not presented to the Legislative Assembly.
3 Oct. to 14 Nov.	Removal of Pyrmont and Glebe Island Bridges.* (Second reference.)	296,500	82,500	.....	214,000	The Committee recommended that the Pyrmont Bridge be replaced by a timber bridge with steel span, to cost £82,500, and decided that the Glebe Island Bridge did not at present require renewal.
19 Dec. to 27 Feb., 1895.	Railway from Jerilderie to Berrigan.	43,543	43,543	.....	.....	The construction of this railway was recommended, with the condition that the estimated cost, £2,000 per mile, should include goods and grain sheds, engineering charges, and all contingencies.
7 Mar. to 10 May.	Railway from Parkes to Condobolin.	127,000	127,000	....	.....	In this inquiry the Committee, while considering it expedient the railway should be constructed, resolved that the cost should not exceed £2,100 per mile, including the cost of land resumptions.
17 May to 28 June.	Railway from Temora to Wyalong.* (Second reference.)	92,000	.. ..	.....	92,000	The Committee, in deciding against this proposed work, were of opinion that at the present time there is no justification for its construction, and the prospects of Wyalong's future are not such as to lead them to conclude that the line should be built in anticipation of what may be the condition of the gold-field and the district some years hence.
20 Mar. to 7 May.	Harbour Improvements at Newcastle.	141,000	141,000	.....	.....	In this inquiry the Committee recommended a modification of the works proposed by the Department and an additional work, the cost of the works as recommended by the Committee being about the same as that of the works proposed by the Department.
26 June, to 4 July.	Tramway from Woolwich to the Field of Mars Common.	19,300	....	.....	19,300	This proposed work was referred to the Fifth Committee who, at the termination of their existence, had inquired partly into it. A motion in the Legislative Assembly to refer the proposal to the Sixth Committee was, however, negatived on 11 December, 1895.
12 Dec. to 14 Dec.	Deviation at Locksley, Great Western Railway.	47,500	47,500	....	.....	The Committee considered this work to be an urgent and necessary one, and recommended that it be carried out without delay.
17 Dec. to 24 Jan. 1896.	Water Supply for the Town of Tamworth.	32,824	32,824	....	.. ..	The Committee recommended that this work be carried out, with the proviso that the capacity of the storage reservoir be increased from 35,000,000 to 50,000,000 gallons.
18 Mar. to 8 May.	Electric Tramway from Circular Quay, Sydney, to the Redfern Railway Station; and also along Harris-st. to the intersection of John-street.	130,500	130,500	.....	.....	Recommended as proposed.
1 Jan. to 10 Mar.	Erection of Buildings at Rookwood for Infirm and Destitute Persons.	118,285	62,900	.....	55,385	The Committee decided that it was not expedient the proposed works should be carried out, deeming it inadvisable, for reasons stated in their Report, to concentrate the infirm and destitute at Rookwood. The Government estimate for the proposed buildings was £108,350 without, and £118,285 with, provision for sewage. The Committee recommended that the inmates of the Parramatta Asylums be removed, the healthy patients being housed at Rookwood and Liverpool, provision for the chronic and acute sick to be made on Crown lands near Campbelltown.
	Carried forward.....£	14,377,276	8,749,093	34,938	5,663,121	

LIST of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of Inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
1896.	Brought forward .....£	14,377,276	8,749,093	34,938	5,663,121	
9 Jan. to 17 July.	Additions to the Treasury Buildings.	21,500	21,500	.....	.....	Recommended as proposed.
20 Feb. to 1 Oct.	Railway from Tamworth to Manilla.	72,150	71,875	.....	275	The Committee's recommendation provided for an amended route, the cost of the railway not to exceed £2,500 per mile.
21 April, to 20 May.	Railway from Nevertire to Warren.	32,730	32,730	.....	.....	Recommended as proposed.
12 May, to 31 July.	Construction of Locks and Weirs on the River Darling.	121,100	.....	.....	121,100	The Committee negatived this proposed work.
5 June, to 19 Aug.	Railway from Berrigan to Finley.	27,250	27,250	.....	.....	The Committee recommended that this proposed railway should be constructed, the cost not to exceed £2,000 per mile.
16 June to 24 July.	Improvement of Cook's River.	36,400	15,000	.....	21,400	As recommended by the Committee the construction of the proposed works would involve an expenditure of £15,000—a reduction on the Departmental estimate of £21,400—which, in the opinion of the Committee, would meet the requirements of the case.
1 Sept. 1896. to 21 April, 1897.	Railway from Moree to Inverell.	279,500	279,500	.....	.....	The Committee resolved that it was expedient this railway should be constructed as proposed.
28 Oct. 1896, to 10 Feb., 1897.	Construction of a Deep-water Harbour at Port Kembla.	440,000	200,000	.....	240,000	The Departmental estimate of cost provided for the construction of two breakwaters, known respectively as the northern and eastern, and the necessary equipment of the port for coal-shipping and general commercial purposes. The Committee were of opinion, however, that the proposed harbour would be rendered sufficiently secure to meet present requirements if the eastern breakwater only were carried out, and the estimated cost reduced by £240,000.
1896. 5 Aug. to 10 Dec.	Railway from Condobolin to Broken Hill.	955,063	....	.....	955,063	The Committee, while having regard to the various aspects of this proposed work, and considering also that the annual loss on the working of the railway would amount to £60,000, were of opinion that it should not, at present, be proceeded with.
1897. 11 Feb. to 13 April.	Sewerage Works for Parramatta.* (Third Reference.)	60,000	60,000	.....	.....	This work was passed by the Committee with the provision that the cost should not exceed the Departmental estimate, and that the carrying out of the work should be subject to a guarantee (by the Municipal Council of Parramatta) of the annual payment required to cover maintenance and interest, and redemption of the principal outlay.
4 May to 8 June.	Duplicate Main from Prospect to Potts' Hill.	109,317	109,317	.. ..	.....	The Committee recommended the amended scheme submitted by the Engineer-in-Chief for Public Works, by which the sides of the canal between Prospect and the Pipe Head Basin would be raised, the canal strengthened, and the 6-foot pipe-line between the Basin and Potts' Hill Reservoir duplicated.
14 April to 6 Dec.	New Houses of Parliament.	533,484	15,000	.....	518,484	The Committee recommended the adoption of the scheme submitted by the Government Architect, providing for alterations to the present Parliamentary Buildings, at a cost not exceeding £15,000.
16 June to 15 Sept.	New Bridge at Glebe Island.	89,100	89,100	.....	.. ..	The Committee recommended that there be substituted for the existing structure a stone causeway, with a central, steel swing-span.
13 July to 25 Aug.	Railway from Redfern to St. James' Road.	650,000	650,000	.....	.....	Recommended as proposed.
31 Aug. to 7 Dec.	Railway from Condobolin to Euabalong.	108,225	.....	.....	108,225	The Committee negatived this proposed work, but recommended, in connection with any proposal for a railway towards Hillston, that a survey be made for a line from Koorawatha, with a view to its consideration in conjunction with existing surveys.
16 Sept. to 25 Nov.	Railway from The Rock to Green's Gunyah.	67,000	67,000	....	.....	Recommended as proposed.
5 Sept. to 18 Nov.	Railway from Coolamon to Ariah.	91,307	.....	.....	91,307	The Committee negatived this proposal.
	Carried forward.....£	18,071,402	10,387,365	34,938	7,718,975	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
	Brought forward .....£	18,071,402	10,387,365	34,938	7,718,975	
20 Dec., 1897, to 1 April, 1898.	Railway from Koorawatha to Grenfell.	89,250	89,250	.....	.....	Recommended as proposed.
5 Jan. to 13 April.	Railway from the Terminus of the Rose Hill Railway to Dural.	57,000	.....	.....	57,000	The Committee negatived this proposal.
14 Dec., 1897, to 29 April, 1898.	Railway from Warren to Coonamble.	150,000	.....	.....	150,000	The Committee negatived this proposal, but recommended that a survey be made of a route from Dubbo to Coonamble.
15 Mar. to 26 April.	Harbour Works at Tweed River.	43,600	43,600	.....	.....	Recommended as proposed.
19 Oct., 1897, to 23 June, 1898.	Railway from Narrabri to Pilliga.	128,650	.....	.....	128,650	The Committee negatived this proposal, but suggested a route from Narrabri to Eurie Eurie, which could, if necessary, be extended on to Walgett.
1 Oct., 1897, to 22 June, 1898.	Railway from Byrock to Brewarrina.	146,350	146,350	.....	.....	The Committee recommended that the railway should be carried out, provided that it be made legally binding upon the Crown lessees in the district served to pay, until the railway shall become self-supporting, one farthing per acre rent additional to their present or ordinary assessment, such additional rent to be credited to the Railway Commissioners.
9 Mar. to 24 June.	Railway from Woolabra to Collarendabri.	207,798	.....	.....	207,798	The Committee negatived this proposal, but suggested a route by which a railway would go from Narrabri towards Eurie Eurie, and, at a point about 315 miles from Newcastle, proceed in a north-westerly direction to Collarendabri.
22 Feb. to 6 July.	Railway from Maitland to Taree.	982,283	.....	.....	982,283	The Committee negatived this proposal.
30 Mar. to 5 July.	Harbour Works at Bellinger River.	36,000	36,000	.....	.....	Recommended as proposed.
8 Feb. to 1 July.	Harbour Works at Macleay River.	95,000	95,000	.....	.....	Recommended as proposed.
27 April to 29 June.	Harbour Works at Hastings River.	46,500	13,915	.....	32,585	The Committee recommended that for the present the southern training-wall only, estimated to cost £13,915, should be carried out.
22 Mar. to 1 July.	Harbour Works at Manning River.	100,000	100,000	.....	.....	The Committee recommended the construction of the proposed work, with some slight modifications.
14 April to 7 July. 1899.	Harbour Works at Nambucca River.	72,500	49,393	.....	23,107	Recommended with modifications.
25 Jan. to 2 Mar.	Water Supply Works for the Borough of Wollongong.	25,211	25,211	.....	.....	The Committee recommended the larger of the two schemes submitted, providing for an extension to Port Kembla on the south, and Bulli on the north.
18 Jan. to 28 Mar.	Public Offices, Phillip and Hunter Streets, Sydney.	44,810	16,000	.....	28,810	The Committee recommended a modification of the Government proposal, providing for a building containing a basement, ground-floor, and first-floor, at a cost not exceeding £16,000.
2 Feb. to 28 April.	Public Offices, Phillip, Bridge, and Young Sts., Sydney.	97,000	.....	.....	97,000	The Committee were of opinion that it was inexpedient to erect this building until there had been a comprehensive investigation into the existing accommodation for the various public Departments and the possibility of improving it by fresh adjustments or slight structural alterations, and until the probable wants of the Government for ten years, at least, were approximately indicated.
9 Mar. to 13 July.	Railway from Dubbo to Coonamble.	207,285	207,285	.....	.....	Recommended as proposed.
17 May to 16 Aug.	Penitentiary and Prison for Females, Randwick.	118,000	118,000	.....	.....	Recommended as proposed.
30 May to 9 Sept.	Railway from Grenfell to Wyalong.	142,293	142,293	.....	.....	The Committee, in recommending this proposed work, urged in their report that the cost might be still further reduced by the use of a less expensive sleeper, and lighter ballasting, and by constructing only absolutely necessary station buildings.
	Carried forward.....£	20,860,932	11,469,662	34,938	9,426,208	

LIST of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
1899.	Brought forward .....£	20,860,932	11,469,662	34,938	9,426,208	
15 Mar. to 12 Dec.	Railway from Cobar to Wilcannia.	497,000	497,000	.....	.. ..	The Committee recommended that the proposed railway be constructed to a point on the east side of the Darling River, 619½ miles from Sydney, and suggested that the railway revenue should be subsidised to some substantial and suitable extent from the land revenue derived from the district benefited by the line.
15 Mar. to 21 Nov.	Locks and Weirs on the River Darling, between Bourke and Menindie.	530,000	.....	.. ..	530,000	Negatived.
2 Nov. to 6 June, 1900.	Railway from Gundagai to Tumut.	148,310	148,310	.....	.. ..	The Committee recommended the proposed railway be carried out, provided that some arrangement be made whereby the district benefited shall contribute to the Railway Commissioners such sum as may be necessary to make good any loss on the construction and working of the line—and not otherwise.
13 Dec. to 27 April, 1900.	Glebe Island Improvements.	273,600	38,000	.....	235,600	The Committee recommended it is not expedient the proposed Glebe Island improvements, as referred to them by the Legislative Assembly, be carried out; but they recommended the carrying out of that portion of the improvements which comprises the cutting down of a part of the Island, and the partial reclamation of the foreshores, at an estimated cost of £38,000.
19 Jan. to 27 April.	Wharfage—Woolloomooloo Bay.	23,000	23,000	.....	.....	The Committee considered it expedient the proposed wharfage should be constructed, and recommended that it be extended a further distance of 100 feet.
21 April to 7 June.	Central Railway Station, Devonshire-street.	561,600	561,600	.....	.. ..	The Committee decided that as the accommodation for passenger traffic at the present Redfern terminus is wholly insufficient, and it would be better in every respect to construct an entirely new station than to attempt a reconstruction of the present one, the best plan would be to extend the railway to the north side of Devonshire-street, and there construct a commodious station and administrative offices.
21 April to 7 June.	Extension of the Railway into the City of Sydney.	1,564,000	.....	.....	1,564,000	In view of their recommending the Devonshire-street proposal, the Committee resolved that it was not expedient to extend the railway to St. James'-road, or in accordance with the deviation suggested in the Legislative Assembly reference of 7th December, 1899.
22 Feb. to 17 Sept.	Railway from Grafton to Casino.	501,375	257,000	.....	244,375	The Railway from Grafton to Casino the Committee recommended, provided the cost could be reduced to £4,000 per mile, and an adequate portion of the revenue from unalienated Crown lands along the route benefited by the railway conveyed to the Railway Commissioners towards covering any loss.
21 Feb. to 21 Aug.	Tuckian Flood Escape Scheme.	46,500	46,500	.....	.....	In the case of the Tuckian Flood Escape Scheme, the Committee did not feel justified in saying that it was expedient the scheme should be carried out unconditionally; but they recommended the work, provided the owners of the land benefited would undertake to enter into a satisfactory guarantee for the payment of 3 per cent. upon the cost of construction, together with the cost of all claims for any damage to land, or from the silting up of the river that the cutting of the channel might cause, and not otherwise.
18 April to 24 Aug.	Railway from Wellington to Werris Creek.	511,149	.. ..	.....	511,149	Negatived. With respect to the railway from Wellington to Werris Creek, the Committee were of opinion that much of the country would be better served by a line suggested by them in their report upon the railway from Dubbo to Coonamble, and regarded favourably in the district, viz., from Mudgee to the country east of Cobborah, in the direction of Dunedoo, and on towards Caigan, eventually continuing northwards in the direction of Coonabarabran.
25 April to 19 Sept.	Railway from Narrabri to Walgett, with branch to Collarendabri.	503,559	503,559	.....	.....	Recommended as proposed.
	Carried forward.....£	26,021,025	13,545,631	34,938	12,511,332	

LIST of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
	Brought forward .....£	26,021,025	13,545,631	34,938	12,511,332	
1900. 19 April to 7 Aug.	Railway from Grenfell to Wyalong. Second reference.*	142,292	.....	.....	142,292	Negatived. In the case of the railway from Grenfell to Wyalong, the proposed work was referred back to the Committee for further consideration and report, and the personnel of the Committee having changed since the previous inquiry, the Committee decided in favour of a line to Wyalong from Temora.
24 July to 29 Sept.	Railway from Culcairn to Germanton.	53,957	53,957	.....	.....	The railway from Culcairn to Germanton the Committee considered it expedient should be constructed, subject to the conditions that the required land should be given free or equitably exchanged for Crown lands, and that the land to be served should contribute a sum sufficient, together with the revenue earned by the line, to make up an amount equal to the working expenses and 2 per cent. on the cost of construction.
24 July to 31 Oct.	Railway from Bogan Gate to Bulbodney.	229,370	229,370	....	.....	Respecting the railway from Bogan Gate to Bulbodney, the Committee recommended the construction of the line, conditionally upon the landholders of the district benefited contributing annually, until the line became self-supporting, a tax upon the unimproved value of their land.
31 July to 26 Nov.	Railway from Bowral to Robertson.	94,578	.....	.....	94,578	Negatived. In case of the railway from Bowral to Robertson, the Committee considered that under the circumstances disclosed by the inquiry relative to the traffic prospects of the line, and the railway facilities already possessed by the district, as well as the high cost of constructing the railway, it was not expedient the line should be carried out.
7 Aug. to 27 Sept.	Electric Tramway from Belmore Park to Fort Macquarie.	119,000	119,000	.....	.....	The Committee recommended the adoption of a suggestion by the Railway Commissioners, by which a single line would be constructed from Belmore Park, through Castlereagh, Bligh, and Loftus streets, to Fort Macquarie, returning by single line through Pitt-street.
22 Aug. to 2 Oct.	Railway from Temora to Wyalong. (Third reference.*)	126,810	126,810	.....	.....	Recommended as proposed.
28 Aug. to 27 Nov.	Railway from Carlingford to Dural.	75,690	.....	.....	75,690	Negatived. In dealing with the railway from Carlingford to Dural, the Committee came to the conclusion that the proposal submitted should be negatived, with the object of meeting the requirements of the district by means of a tramway.
29 Aug., 1900, to 25 May, 1901.	Railway from Temora to Gunbar.	388,033	172,140	.....	215,893	In the case of the railway from Temora to Gunbar, the Committee arrived at the decision that for the present the line should be constructed for about 60 miles in the direction of Barellan, adding to their recommendation a proviso that it be made legally binding on the landholders in the area benefited by the line to contribute towards any deficiency in the railway revenue returns.
1900. 18 Sept. to 29 Sept.	Electric Tramway along Pitt-street.	122,622	.....	.....	122,622	Negatived. The Electric Tramway along Pitt-street was negatived, as it was unnecessary in view of the Committee's recommendation that the suggestion of the Railway Commissioners for a single line through Castlereagh, Bligh, and Loftus streets to Fort Macquarie, returning by a single line through Pitt-street, should be adopted.
28 Sept., 1900, to 8 Mar., 1901.	Railway from Cockburn to Broken Hill.	217,985	.....	.....	217,985	Negatived. With reference to the railway from Cockburn to Broken Hill, the Committee were of opinion that, as the evidence showed that Broken Hill is already well served by the Silverton Tramway, that the railway could only obtain a share of the traffic by a competion in which the tramway would be the more successful, and that, to avoid transhipment at Cockburn, it would have to be built with a gauge similar to that of the South Australian railways, it was not expedient the line should be constructed.
23 Oct., 1900, to 9 Mar., 1901.	Railway from Broken Hill to Menindie.	279,515	.....	.....	279,515	Negatived. The Broken Hill to Menindie proposal the Committee considered should not be carried out, as the evidence before them, and their inspection of the country to be served by the line, showed that the railway would neither pay nor be of any material advantage to the district.
	Carried forward.....£	27,870,877	14,246,908	34,938	13,659,907	

LIST of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
	Brought forward .....£	27,870,877	14,246,908	34,938	13,659,907	
26 Oct., 1900, to 6 June, 1901.	Water Supply to the towns of Broken Hill and Silverton.	204,000	.....	.....	204,000	Negatived. In the case of the proposed Water Supply to the towns of Broken Hill and Silverton, the Committee, as a result of their inquiry, regarded the proposed works as unnecessary.
2 Nov., 1900, to 3 June, 1901.	Sewerage Works for the Borough of Newcastle, and the Municipal Districts of Hamilton, Merewether, Wickham, and Carrington.	139,396	139,396	.....	.....	In the case of the proposed Sewerage Works for the Borough of Newcastle, and the Municipal Districts of Hamilton, Merewether, Wickham, and Carrington, the Committee passed a resolution that it was expedient the works should be carried out, provided the sewage be discharged south of the proposed outfall, at or near the Merewether Gulf. They also recommend that the Municipal District of Adamstown be included in the scheme.
1900. 22 Nov. to 4 Dec.	Erecting a Library within the University grounds.	67,500	67,500	.....	.....	Recommended as proposed.
29 Nov. 1900, to 21 May, 1901.	Railway from Belmore to Liverpool.	175,207	62,895	.....	112,312	With regard to the railway from Belmore to Liverpool, the Committee considered it inexpedient to carry out the line as proposed, but they thought the district might be better served than it is by the present Marrickville-Belmore railway, and the revenue receipts from that railway increased if the present line were extended from Belmore to Chapel-road, Bankstown, a distance of something less than 3½ miles, and the construction of that length they recommended.
1901. 15 Jan. to 28 May.	Railway from Cooma, *via* Nimitybelle and Bombala, to Delegate.	569,895	386,031	.....	183,864	The railway from Cooma, *via* Nimitybelle and Bombala, to Delegate, the Committee considered should be limited to the section from Cooma, *via* Nimitybelle, to Bombala, and recommended the construction of that portion of the proposed line subject to conditions similar to those imposed in the Bill authorising the construction of a line from Gundagai to Tumut.
5 Feb. to 1 June.	Railway from Wyalong to Hillston.	311,551	.....	.....	311,551	Negatived. The railway from Wyalong to Hillston the Committee negatived, on the ground that it was unwise to make any recommendation on the question of railway extension to Hillston until it has been determined how Wyalong shall be connected with the railway system of the State.
6 Feb. to 4 June.	Railway from Booyong to Ballina.	134,796	.....	.....	134,796	Negatived. With regard to the railway from Booyong to Ballina, the Committee were of opinion that there was nothing before them to justify its construction.
7 Feb. to 5 June.	Breakwater at Byron Bay	260,000	.....	.....	260,000	Negatived. The construction of the Breakwater at Byron Bay the Committee considered should not be carried out until it has been determined whether the New England district shall be connected by railway with the northern seaboard, and what port on the coast, as the terminus of such a railway, will best serve the interests of that district.
8 Feb. to 6 June	Railway from Manilla to Barraba.	134,755	134,755	.....	.....	With regard to the proposed Railway from Manilla to Barraba, the Committee approved of the line being constructed, but attached to their resolution the proviso that the land necessary for the purpose should be given free of cost.
12 Feb. to 27 May.	Railway from Tarago to Braidwood.	129,514	.....	.....	129,514	Negatived. Respecting the railway from Tarago to Braidwood, the Committee found that, in view of the railway requirements of the district being fairly well met under present conditions, and the improbability of the line being able to successfully compete for the traffic between Sydney and the district by sea to Nelligen and thence by road, the construction of the railway was not justified.
17 Sept. to 17 Oct.	Additions to Prince Alfred Hospital, Sydney.	45,000	45,000	.....	.....	The proposed Additions to Prince Alfred Hospital, Sydney, the Committee recommended be constructed, provided that the cost did not exceed £45,000, and that such alterations in the details of the plans were made as to ensure more sunlight on the south-eastern side of each pavilion, more light and ventilation in the ward kitchens, sisters' rooms, and corridors, and the walling off of the main staircases.
	Carried forward.....£	30,042,491	15,081,485	34,938	14,995,944	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
	Brought forward .....£	30,042,491	15,081,485	34,938	14,995,944	
1901. 20 Nov. to 29 Nov.	Extension of the Pyrmont Bridge.	10,000	10,000	.....	.....	Recommended as proposed.
27 Feb. to 11 June, and 8 Oct. to 16 June, 1902.	Removal of the Public Abattoir from Glebe Island.	203,483	203,483	.....	.....	In the case of the Removal of the Public Abattoir from Glebe Island, the Committee recommended that the abattoir should be removed from Glebe Island, and that new buildings be erected on Homebush Point, in close proximity to the existing cattle sale-yards.
10 Dec., 1901. to 26 May. 1902.	Bridge over the Hawkesbury at Richmond.	40,000	22,000	.....	18,000	As the evidence showed that a bridge 12 feet higher than the present structure, to cost £22,000, would meet requirements, the Committee recommended accordingly.
12 Feb. to 5 July.	Deviation on the Great Western Railway Line, to avoid the Lithgow Zigzag.	286,872	286,872	.....	.....	The Committee approved of the scheme as recommended by the Railway Commissioners, to cost £286,872, as against another scheme to cost £377,754.
28 Feb., 1901, to 27 Jan., 1903.	Hunter River Flood Prevention.	890,000	.....	.....	890,000	Negatived.
1 April, 1902, to 7 Nov.	Railway from Wagga Wagga to Humula.	172,898	.....	.....	172,898	Negatived. The evidence in this inquiry did not indicate any reliable prospect of the estimated loss being met or materially reduced.
26 May, 1902, to 28 Aug.	Tramway from Oxford-street to Bellevue Hill.	149,875	150,572	697	.....	The Committee recommended the construction of this tramway by an amended route found to be more desirable than the route first submitted.
17 June, 1902, to 15 Sept.	Tramway from Enmore-road along Addison-road, Livingstone-road, and New Canterbury road to Dulwich-hill Terminus.	60,856	.....	.....	60,856	Recommended as proposed.
14 July, 1902, to 9 Dec.	Tramway along Abercrombie-street, Redfern, to Erskineville.	83,264	....	.....	83,264	In this inquiry the Committee recommended an alteration of route by which the tramway would be taken along Regent-street into Bank-street, and thence along Abercrombie-street as submitted, and that the construction of the tramway should not be commenced until the question of a proposed new street from the new railway station to Regent-street is definitely settled.
25 June, 1902, to 12 July.	Concrete Dam across the Cataract River.	126,000	217,500	91,500	.....	In view of the requirements of Sydney in the near future, the fact that the dam submitted would not exhaust the capabilities of the portion of the catchment area affected by it, and the financial aspect of the question, the Committee recommended the construction of a dam, as designed by the Principal Engineer for Harbours and Rivers, 160 feet high, to impound 18,200 million gallons of water, at a cost not exceeding £217,500, the dam to be first erected to the height of 120 feet, so as to impound 7,115 million gallons of water, and to be raised to its full height when the additional storage becomes necessary.
25 Feb., 1902, to 27 April, 1903.	Railway from Tenterfield to Casino.	1,094,870	.....	.....	1,094,870	Negatived.
14 Nov., 1902, to 4 June, 1903.	Graving Dock at the Port of Newcastle.	190,000	190,000	.....	.....	The Committee recommended the carrying out of the dock on the site at the southern end of the Dyke, Carrington.
5 Jan., 1903, to 30 April.	Railway from Eden to Bega. (Second reference.)*	400,308	.....	.....	400,308	Negatived. The Committee consider it inexpedient to construct this proposed Railway, as there is nothing to justify its construction either from a traffic point of view or that of meeting the legitimate requirements of the district.
6 Jan., 1903, to 11 June.	Breakwater at Bermagui.	70,000	.....	.....	70,000	Negatived. In arriving at this conclusion, the Committee were influenced by the consideration that the district served by Bermagui Harbour is a very limited one; that the present facilities for obtaining goods from Sydney or sending away produce are equal to requirements; and that the breakwater, if constructed, would not to any very important extent improve the condition of the harbour in the direction of sheltering it from the effects of heavy weather.
24 Feb., 1902, to 25 May, 1903.	Railway from Glen Innes to Inverell. (Third reference.)*	320,160	.....	.....	320,160	Negatived.
9 Jan., 1903, to 26 May.	Cape Hawke Harbour Works.	38,600	.. ..	.....	38,600	Negatived. The Committee were of opinion that the trade of the port, and the limited area of the district served by it, did not justify the expenditure.
	Carried forward.....£	34,179,677	16,161,912	127,135	18,144,900	

LIST of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
	Brought forward..... £	£ 34,179,677	£ 16,161,912	£ 127,135	£ 18,144,900	
15 Jan., 1902, to 17 Aug., 1903.	Southern Breakwater, entrance to the Clarence River.	152,459	77,440	.....	75,019	The Committee recommended that the southern breakwater be constructed a further length of 1,350 feet, at a cost not exceeding £77,440.
1903. 28 Jan. to 11 Sept.	Northern Breakwater, entrance to the Clarence River.	208,500	.....	.....	208,500	Negatived.
23 Feb. to 23 Dec.	Railway from Maitland to South Grafton.	2,650,820	2,650,820	.....	.....	The Committee resolved that it was expedient the proposed railway be carried out, provided that in accordance with the recommendation of the Railway Commissioners a betterment tax be imposed upon the alienated lands within the area benefited by the railway, until the line becomes self-supporting, and, in addition, a moiety of the revenue, whether from sale or lease, derived from the area of land still in possession of the Crown, within the same radius, be devoted to writing down the capital cost of the railway.
26 Feb. to 10 Sept.	Camden Haven Improvement Works.	43,650	4,000	.....	39,650	The Committee recommended that the southern wall be completed (about 350 feet), at a cost not exceeding £4,000.
6 April, to 19 Nov.	Hastings River Improvements.	74,052	.....	.....	74,052	Negatived.
16 April, to 12 Nov.	Improvements, Stewart's Island and Nambucca River.	82,535	.....	.....	82,535	The Committee recommended that the southern breakwater be constructed to a length of 2,100 feet, at a cost not exceeding £26,000, such amount to be provided by applying to the carrying out of the southern breakwater the unexpended balance of the amount authorised for the construction of the works recommended by the Public Works Committee in 1898.
22 May, to 10 Nov.	Railway from Lockhart to Clear Hills.	126,957	.....	.....	126,957	Negatived.
12 June, to 11 Nov.	Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.	58,088	58,088	.....	.....	Recommended as proposed.
23 July, to 2 Sept.	Water Supply for the town of Broken Hill—Dam and tramway at Umberumberka Creek.	36,500	.....	.....	36,500	The Committee resolved that it was not expedient the proposed dam and tramway be carried out, but they recommended that the Yancowinna diversion scheme be carried out by the Broken Hill Water Supply Company on the terms stated in No. 4 of their proposals, viz., that the company retain possession of their works until the expiration of their present lease, and construct the Yancowinna diversion, for the carrying out of which the company to be granted such extension of lease as may be necessary, based on actuarial computation, to enable them to recoup the outlay.
	£	37,613,238	18,952,260	127,135	18,788,113	

* Works marked with an asterisk have been referred to the Committee more than once.

INQUIRIES NOT YET COMPLETE.

Railway from Wellington to Werris Creek.
Railway from Wyalong to Hillston.
Railway from Singleton to Cassilis, with branch from Denman to Muswellbrook.
Railway from Murwillumbah to the Tweed Heads.
Tramway from Wallsend to West Wallsend.
Reclamation Works Hen and Chicken Bay.
Water Supply Works for the City of Grafton and South Grafton.
Railway from Liverpool to Mulgoa.
Railway from Carlingford to Dural.
Water Supply for Town of Broken Hill—Dam and Tramway at Umberumberka Creek. (Second Reference.)

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF PROCEEDINGS.

FRIDAY, 12 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works; and John Kneeshaw, Traffic Superintendent, Tramway Department, were sworn, and examined.

The Committee adjourned at 5 minutes past 4, until 11 o'clock a.m., on Monday, 15th June.

MONDAY, 15 *JUNE*, 1903.

The Committee met at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting was read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Standford Merthyr and Pelaw Main Collieries.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

Hugh McLachlan, Secretary to the Railway Commissioners, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

Hugh McLachlan, Secretary to the Railway Commissioners, was sworn, and examined.

The Committee adjourned at 25 minutes to 1 p.m., until 2 o'clock p.m., on Tuesday, the following day.

TUESDAY, 16 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

Arthur John Hare, Chief Draftsman, Department of Lands; William Henry Hall, Assistant Statistician Government Statistician's Department; and John Harper, Chief Traffic Manager, Department of Railways, were sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Singleton to Cassilis, with a branch from Denman to Muswellbrook.

Arthur John Hare, Chief Draftsman, Department of Lands; and William Henry Hall, Assistant Statistician, Government Statistician's Department, were sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY,

WEDNESDAY, 17 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out works in completion of the Camden Haven Harbour Improvement Works.

John Thomson, Esq., M.P., was sworn, and examined.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 18 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

John Thomson, Esq., M.P., was sworn, and examined.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m., on Friday, the following day.

FRIDAY, 19 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out works in completion of the Camden Haven Harbour Improvements Works.

John Thomson, Esq., M.P., was sworn, and further examined.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

John Thomson, Esq., M.P., was sworn, and further examined.

The Committee further considered the expediency of constructing a line of Railway from Singleton to Cassilis, with a branch from Denman to Muswellbrook.

John Harper, Chief Traffic Manager, Department of Railways, was sworn, and examined.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m., on Monday, 22nd June.

MONDAY, 22 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Singleton to Cassilis, with a branch from Denman to Muswellbrook.

John Charles Lucas Fitzpatrick, Esq., M.P.; and Hugh McLachlan, Secretary to the Railway Commissioners, were sworn, and examined.

The Committee adjourned at 12 minutes to 4, until 2 o'clock p.m., on Tuesday, the following day.

TUESDAY,

TUESDAY, 23 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Cape Hawke Harbour Works.

Clauses 1 and 2 were passed.

The further consideration of the Report was postponed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Richard Atkinson Price, Esq., M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY, 24 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

Richard Denis Meagher, Esq., M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 25 *JUNE*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Phillip Henry Morton, Chairman, Board of Directors, Australian Joint Stock Bank, was sworn, and examined.

The Committee further considered the expediency of completing the Southern Training-wall, and constructing the Eastern Training-wall and portion of the Northern Breakwater, in connection with the Hastings River Improvements.

John Vincent De Coque, Timber Expert, Department of Public Works, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 11 o'clock a.m., on Friday, the following day.

FRIDAY, 26 *JUNE*, 1903.

The Committee met at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £3 4s. were passed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Edward Ebsworth, District Surveyor, Grafton, was sworn, and examined.

The Committee adjourned at 12·45 p.m., until half-past 10 o'clock a.m., on Saturday, the following day, at West Maitland.

SATURDAY,

SATURDAY, 27 *JUNE*, 1903.

The Committee having, in connection with their inquiry respecting the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, left Sydney by the 5·10 p.m. train on Friday, 26th June, for Newcastle and West Maitland, met at West Maitland, on Saturday, 27th June, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Robert William Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accompanied by Mr. Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, the Committee then left West Maitland to inspect the route of the proposed Tramway between West Maitland and the Tramway Terminus.

Travelling by way of Dagworth, they passed through East Greta and Heddon Greta to Kurri Kurri Township, and thence proceeded to Hebburn, from which colliery, after obtaining information respecting mining operations further on, as far as Cessnock, they returned to West Maitland *via* Pelaw Main and Stanford Merthyr.

The Committee adjourned at 5·55 p.m., until half-past 10 o'clock a.m., on Monday, 29th June.

MONDAY, 29 *JUNE*, 1903.

The Committee met at the Court-house, West Maitland, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Arthur James Prentice, solicitor, West Maitland; Alexander Wilkinson, West Maitland; William Kersley, miner, Pelaw Main; William Nelmes, miner, Pelaw Main; Robert William Hipwell, builder, Kurri Kurri; Daniel Jones, miner, Kurri Kurri; John Gillies, Esq., M.P.; George Galton, draper, West Maitland; John Leonard Lee, East Maitland; Charles Wellington Holmes, architect, West Maitland; and George Leitch, manager, Stanford Merthyr Colliery, were sworn, and examined.

The further taking of evidence at West Maitland was then postponed, and the Committee proceeding to inspect the route of the proposed tramway between West and East Maitland, drove from the level crossing, at the end of Regent-street, over the Long Bridge and through High-street, and thence on to East Maitland Railway Station, where the route of the tramway commences.

The Committee adjourned at 5·55 p.m. until half-past 10 o'clock a.m. on Tuesday, the following day, at East Maitland.

TUESDAY, 30 *JUNE*, 1903.

The Committee met at the Court-house, East Maitland, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

The Honorable James Nixon Brunker, Esq., M.P.; James Hardress Fitzgerald Waller, Mayor, East Maitland; Augustus Short Foster, alderman, and sawmill proprietor, East Maitland; John Murphy, contractor, East Maitland; John Farrell, dairyman, and late 'bus proprietor, East Maitland; William Baron Pryor, insurance agent, East Maitland; Patrick Ferry, blacksmith, East Maitland; and George Thomas Chambers, solicitor, East Maitland, were sworn, and examined.

The Committee returned to Sydney by train from East Maitland at 2·24 p.m., reaching Sydney at 6·35 p.m., and adjourning until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 1 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £15 were passed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Henry

Henry Pateson, commission agent, Sydney, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

George Charles Yeo, draftsman, Stock Branch, Department of Mines and Agriculture, was sworn, and examined.

The Committee further considered their Report to the Legislative Assembly on the proposed Cape Hawke Harbour Works,.

The remaining clauses of the Report were passed, the Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 2 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

George Stuart Briner, Esq., M.P.; and Edwin Joseph Statham, late Supervising Engineer, Roads and Bridges Branch, Department of Public Works, were sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 3 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Edward Fisher Pittman, Under Secretary and Government Geologist, Department of Mines and Agriculture, was sworn, and examined.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

George De Fraine, sawmill owner and timber merchant, Sydney and Camden Haven, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock, p.m. on Monday, 6th July.

MONDAY, 6 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from Mr. L. von Koenneritz, with reference to the Lombard-Gerue Trolley Auto-moteur system of electric traction, in relation to the Committee's inquiry respecting the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

The correspondence was received.

The Committee proceeded to consider the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works; and John Kneeshaw, Traffic Superintendent, Tramway Department, were sworn, and examined.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

Mr. Hawthorne gave notice that he would move at the next meeting of the Committee:—"That the Committee proceed to consider the evidence on the proposed Works in completion of the Camden Haven Harbour Improvement Works, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY,

TUESDAY, 7 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Campbell,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

George De Fraine, sawmill owner and timber merchant, Sydney and Camden Haven, was sworn, and further examined.

Mr. Hawthorne's notice of motion for the closing of the evidence in the inquiry was postponed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

John Cameron, commission agent and produce merchant, Sussex-street, Sydney; and Robert Campbell, alderman, Balmain, were sworn, and examined.

Mr. McGowen gave notice that he would move at the next meeting of the Committee:—"That the Committee proceed to consider the evidence on the proposed Railway from Maitland to South Grafton, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at ten minutes past 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 8 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.,

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of contructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Tannatt William Edgeworth David, Professor of Geology, University of Sydney, was sworn, and examined.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

Mr. McGowen's notice of motion for the closing of the evidence in the inquiry with reference to the proposed Railway from Maitland to South Grafton, was postponed.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 9 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

The Committee further considered the expediency of constructing a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 10 *JULY*, 1902.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Sinclair, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

Mr. Hawthorne moved,—"That the Committee proceed to consider the evidence on the proposed Works in completion of the Camden Haven Harbour Improvement Works, with a view of reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. Campbell, and passed.

Mr. Hawthorne (with concurrence) moved,—"That, in the opinion of the Committee, it is not expedient the proposed Works in completion of the Camden Haven Harbour Improvement Works, as referred to them by the Legislative Assembly, be carried out."

Mr. Hughes seconded the motion.

The debate was adjourned.

The Committee further considered the expediency of constructing a Breakwater on the northern side of the entrance to the Clarence River, as recommended by Sir John Coode.

The Honorable Sir John See, K.C.M.G., M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., Monday, 13th July.

MONDAY, 13 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Campbell,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Works in completion of the Camden Haven Harbour Improvement Works.

The adjourned debate on the motion of Mr. Hawthorne, seconded by Mr. Hughes,—"That, in the opinion of the Committee, it is not expedient the proposed Works in completion of the Camden Haven Harbour Improvement Works, as referred to them by the Legislative Assembly, be carried out,"—was resumed.

Mr. Moore moved,—"That the motion be amended by the addition of the following words:—'to the full extent submitted, but they recommend that the southern wall be completed (about 350 feet) at a cost not exceeding £4,000.'"

The amendment was passed on the following division, upon the question,—"That the words proposed to be added be so added,"—

Ayes, 5.	Noes, 2.
Mr. McFarlane,	Mr. Hughes,
Mr. Campbell,	Mr. Hawthorne.
Mr. Kethel,	
Mr. McGowen,	
Mr. Moore.	

The motion as amended was passed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

John Kneeshaw, Traffic Superintendent, Tramway Department, was sworn, and further examined.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Hugh McLachlan, Secretary to the Railway Commissioners, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 14 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from Mr. John Kneeshaw, Traffic Superintendent, Tramway Department, forwarding in connection with his evidence in the Committee's inquiry with reference to the proposed tramway from Wallsend to West Wallsend, particulars of the railway time-table between Newcastle and Cockle Creek and West Wallsend.

The correspondence was received.

The

The Committee proceeded to consider the expediency of constructing a line of Railway from Carlingford to Dural.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY, 15 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from the Honorary Secretary, Boree Creek Railway League, asking that arrangements be made for the taking of evidence in Sydney from two members of the League in the Committee's inquiry with reference to the proposed Railway from Lockhart to Clear Hills.

The correspondence was received.

The Committee further considered the expediency of constructing a line of railway from Carlingford to Dural.

Hugh McLachlan, Secretary to the Railway Commissioners; and John Harper, Chief Traffic Manager, Department of Railways, were sworn, and examined.

The Committee further considered the expediency of constructing a Breakwater on the southern side of the entrance to the Clarence River, as recommended by Sir John Coode.

Mr. Kethel gave notice that he would move at the next meeting of the Committee:—"That the Committee proceed to consider the evidence on the proposed Breakwater on the southern side of the entrance to the Clarence River, as recommended by Sir John Coode, with a view to reporting on the subject to the Legislative Assembly."

The Committee further considered the expediency of constructing a Breakwater on the northern side of the entrance to the Clarence River, as recommended by Sir John Coode.

Mr. Kethel gave notice that he would move at the next meeting of the Committee:—"That the Committee proceed to consider the evidence on the proposed Breakwater on the northern side of the entrance to the Clarence River, as recommended by Sir John Coode, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at five minutes to 4, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 16 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Breakwater on the southern side of the entrance to the Clarence River, as recommended by Sir John Coode.

Mr. Kethel moved,—"That the Committee proceed to consider the evidence on the proposed Breakwater on the southern side of the entrance to the Clarence River, as recommended by Sir John Coode, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. Moore, and passed.

The Committee further considered the expediency of constructing a Breakwater on the northern side of the entrance to the Clarence River, as recommended by Sir John Coode.

Mr. Kethel moved,—"That the Committee proceed to consider the evidence on the proposed Breakwater on the northern side of the entrance to the Clarence River, as recommended by Sir John Coode, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. Hawthorne, and passed.

The Committee further considered the expediency of constructing a Breakwater on the southern side of the entrance to the Clarence River, as recommended by Sir John Coode.

Mr. Kethel (with concurrence) moved,—"That, in the opinion of the Committee, it is not expedient the proposed Southern Breakwater at the entrance to the Clarence River, as referred to them by the Legislative Assembly, be carried out to the full extent submitted; but they recommend that it be constructed a further length of 1,350 feet, at a cost not exceeding £77,440.

Mr. McFarlane seconded the motion.

The debate was adjourned.

The Committee adjourned at 4 o'clock, until 11 o'clock a.m., on Friday, the following day.

FRIDAY,

FRIDAY, 17 *JULY*, 1903.

The Committee met at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Railway from Eden to Bega.

The Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee adjourned at 12·45 p.m., until half-past 10 o'clock a.m. on Saturday, the following day, at West Maitland.

SATURDAY, 18 *JULY*, 1903.

The Committee having, in relation to their inquiries respecting the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, and a line of Tramway from Wallsend to West Wallsend, left Sydney by the 5·10 p.m. train on Friday, 17 July, for West Maitland, met at the Court-house, West Maitland, on Saturday, 18 July, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Oliver Kay Young, Chairman, East Greta Coal-mining Company, Ltd.; Frank Liddell, Mayor, West Maitland; John Enwright, auctioneer, West Maitland; William Richmond Sullivan, draper, West Maitland; Azariah Thomas, General Manager, East Greta Coal-mining Company, Ltd., were sworn, and examined.

Oliver Kay Young, Chairman, East Greta Coal-mining Company, Ltd., was sworn, and further examined.

William Bell, Honorary Secretary, East Greta Progress Association; Edward Davis, Assistant Engineer, Stanford Merthyr Colliery; Henry Morgan Williams, colliery manager, East Greta; Charles Edward Crutch, Secretary, Maitland Gas Company, West Maitland; Thomas Bible, colliery blacksmith, Kurri Kurri; Rudolph St. Vincent Heyes, mechanical engineer, West Maitland; William Parker, blacksmith, and member of the Progress Committee, East Greta; and Henry John Adams, grazier, and colliery-owner, West Maitland, were sworn, and examined.

The Committee adjourned at 5 minutes past 4 p.m., until half-past 10 o'clock a.m., on Monday, 20th July, at Wallsend.

MONDAY, 20 *JULY*, 1903.

The Committee met at Wallsend at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accompanied by Mr. J. I. Haycroft, Assistant Engineer, Railway and Tramway Construction Branch, Department of Public Works, and in connection with their inquiry respecting the expediency of constructing a line of Tramway from Wallsend to West Wallsend, the Committee then left Wallsend for West Wallsend, inspecting on the way the route of the tramway and the country and population centres to be served by it, and to take local evidence.

At 11·30 a.m., the Committee met in the School of Arts, West Wallsend.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

James Lindsay Gray, late storekeeper, West Wallsend; John Wilson Stenhouse, miner, West Wallsend; John Simpson, miner, Teralba, and Secretary of the Progress Association, Boolaroo; Daniel Smith, miner, Seaham; Daniel Howie, miner, Seaham; William Hodge, miner, West Wallsend; Andrew Henderson, miner, Seaham; John Godfrey Bentley, miner, Seaham, and Secretary of the Holmesville Progress Association; Robert Horne, miner, Killingworth; John Nelson, hotelkeeper, Young Wallsend; and James Preston Hocken, medical practitioner, West Wallsend, were sworn, and examined.

The Committee adjourned at 3·30 p.m., until half-past 10 o'clock a.m., on Tuesday, the following day, at Wallsend.

TUESDAY, 21 *JULY*, 1903.

The Committee met at the Court-house, Wallsend, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Robert Maddison, Mayor, Wallsend; Thomas Rees Davis, miner, and alderman, Wallsend; Adam Cook, council clerk, Wallsend; William Thomas Johnson, storekeeper, Wallsend; Daniel William Jones, alderman, Wallsend; and Thomas Abel, council clerk, Plattsburg, were sworn, and examined.

The Committee adjourned at 12·45 p.m., and returned by the 3·8 p.m. train to Sydney, reaching there at 6·35 p.m., and adjourning until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY, 22 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

An account amounting to £2 11s. 8d. was passed.

The Committee further considered the expediency of constructing a Breakwater on the southern side of the entrance to the Clarence River, as recommended by Sir John Coode.

The adjourned debate on the motion of Mr. Kethel, seconded by Mr. McFarlane,—"That, in the opinion of the Committee, it is not expedient the proposed Southern Breakwater at the entrance to the Clarence River, as referred to them by the Legislative Assembly, be carried out to the full extent submitted; but they recommend that it be constructed a further length of 1,350 feet, at a cost not exceeding £77,440"—was resumed.

The motion was passed on the following division:—

Ayes, 6.	Noes, 1.
Mr. McFarlane,	Mr. McGowen.
Mr. Campbell,	
Mr. Kethel,	
Mr. Hughes,	
Mr. Hawthorne,	
Mr. Moore.	

The Committee further considered the expediency of constructing a Breakwater on the northern side of the entrance to the Clarence River, as recommended by Sir John Coode.

Mr. Moore (with concurrence) moved,—"That, in the opinion of the Committee, it is not expedient the proposed Breakwater on the northern side of the entrance to the Clarence River, as referred to them by the Legislative Assembly, be carried out."

The motion was seconded by Mr. Hughes, and passed.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 23 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and examined.

The Committee adjourned at ten minutes past 4, until 2 o'clock p.m., on Friday, the following day.

FRIDAY,

FRIDAY, 24 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from the Clerk of the Legislative Assembly, informing the Committee of the passing by the Assembly of a resolution referring to them for consideration and report the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Letter from the Newcastle Chamber of Commerce, with reference to Members of the Chamber giving evidence in the Committee's inquiry respecting the proposed Railway from Maitland to South Grafton.

The correspondence was received.

Accounts amounting to £15 5s. were passed.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

Arthur Willoughby Aston, farmer, and Secretary, Railway League, Boree Creek, was sworn, and examined.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Leslie Augustus Burton Wade, Principal Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at ten minutes past 4, until 2 o'clock p.m., on Monday, 27th July.

MONDAY, 27 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Leslie Augustus Burton Wade, Principal Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 28 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes.
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.,

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £1 3s. 3d. were passed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umbermuberka Creek, in connection with the Water Supply for the town of Broken Hill.

Edward Fisher Pittman, Under Secretary and Government Geologist, Department of Mines and Agriculture; Gerald Harnett Halligan, Hydrographic Surveyor, Harbours and Rivers Branch, Department of Public Works; and Edward Johnstone Sievers, Government Land Valuer, were sworn, and examined.

The Committee adjourned at ten minutes to 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 29 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from Mr. A. W. Aston, Honorary Secretary, Boree Creek Railway League, with reference to the evidence given by him in the Committee's inquiry with reference to the proposed Railway from Lockhart to Clear Hills.

The correspondence was received.

The

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

John Kneeshaw, Traffic Superintendent, Tramway Department, was sworn, and further examined.

Robert Shaw, hotelkeeper, Sydney, was sworn, and examined.

The Committee further considered the expediency of constructing a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at ten minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 30 *JULY*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

John Gillies, Esq., M.P., was sworn, and further examined.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

Mr. Hawthorne gave notice that he would move at the next meeting of the Committee:—"That the Committee proceed to consider the evidence on the proposed Railway from Lockhart to Clear Hills, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at five minutes past 4, until 11 o'clock a.m. on Friday, the following day.

FRIDAY, 31 *JULY*, 1903.

The Committee met at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

James Robert Miller Robertson, Representative in Australia of the Caledonian Coal Company, Ltd., was sworn, and examined.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connecting with the Water Supply for the town of Broken Hill.

Charles Ormsby Burge, Principal Assistant Engineer, Railway Construction Branch, Department of Public Works, was sworn, and examined.

Mr. Hawthorne's notice of motion for closing the evidence with reference to the proposed Railway from Lockhart to Clear Hills was postponed.

The Committee adjourned at 12·30 p.m., until 2 o'clock p.m. on Wednesday, 5th August, at Broken Hill.

WEDNESDAY, 5 *AUGUST*, 1903.

The Committee having, in relation to their inquiry respecting the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, left Sydney on Friday, 31st July, by the 7·15 p.m. (Melbourne Express) train, for Broken Hill, *via* Melbourne and Adelaide, for the purposes of inspection and the taking of local evidence with reference to the proposed works, met at Broken Hill, on Wednesday, 5th August, at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The Honorable William Robert Campbell left Sydney with the Committee on Friday, 31st July, but returned to Sydney from Melbourne on Monday, 3rd August.

The minutes of the previous meeting were read, and confirmed.

The

The Committee then left Broken Hill by train for Silverton, whence, accompanied by Mr. W. Smith, Resident Engineer, Water Supply and Sewerage Branch, Department of Public Works, they drove to the site of the proposed dam on Umberumberka Creek, 7 miles from Silverton, and inspected the site and the works in progress.

The route for the proposed tramway not having been surveyed, an inspection of it was not practicable, but a general view of the country, over which the survey will be made, was obtained.

The Committee returned to Broken Hill at 9 p.m., and adjourned until half-past 10 o'clock a.m. on Thursday, the following day.

THURSDAY, 6 *AUGUST*, 1903.

The Committee met at the "Freemasons' Hotel," Broken Hill, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, in continuation of their inquiry respecting the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, visited and inspected the service reservoir and filtration works of the Broken Hill Water Supply Company, Ltd., and afterwards witnessed the method adopted in supplying Broken Hill with water brought to the town by railway train.

Subsequently the Committee drove to and inspected the storage reservoir at Stephen's Creek, and the means in operation there for pumping soakage water from a well sunk in the reservoir bed.

The Committee returned to Broken Hill at 5·40 p.m., and adjourned until half-past 9 o'clock a.m. on Friday, the following day.

FRIDAY, 7 *AUGUST*, 1903.

The Committee met at the "Freemasons' Hotel," Broken Hill, at 9·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

Continuing their inquiry respecting the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, the Committee, accompanied by Mr. W. A. Smith, Engineer, Roads and Bridges Branch, Department of Public Works, then left Broken Hill by train on a visit of inspection to Yancowinna Creek and catchment area, in relation to the alternative Yancowinna schemes.

Leaving the train in the vicinity of the site for a dam, which would enable a portion of the flow of water off the Yancowinna catchment to be used for supplementing the supply in Stephen's Creek Reservoir, the Committee visited and inspected the site; and also, as far as practicable, the portion of the catchment area from which the water stored by means of the dam would come.

Thence they drove along the course of Yancowinna Creek to Yanco Glen, where they inspected the site chosen as the most suitable for a dam and storage reservoir in connection with the principal Yancowinna scheme for supplying water to Broken Hill, and also examined the work carried out there by the Broken Hill Co-operative Water Supply Company, Ltd.

During the drive to and from Yanco Glen a general view was obtained of a considerable portion of the Yancowinna catchment area.

The Committee returned to Broken Hill at 5·40 p.m., and adjourned until half-past 10 o'clock a.m., on Saturday, the following day.

SATURDAY, 8 *AUGUST*, 1903.

The Committee met at the Court-house, Broken Hill, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Alexander Hendry, Mayor of Broken Hill; William Maiden, hotelkeeper, Menindie; and John Hugh Gordon, hotelkeeper, Menindie, were sworn, and examined.

The Committee adjourned at 3 p.m. until 10 o'clock a.m. on Monday, 10th August.

MONDAY,

MONDAY, 10 *AUGUST*, 1903.

The Committee met at the Court-house, Broken-hill, at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Ernest Hjalmar Frederick Fromen, produce merchant, Broken Hill; Jabez Wright, undertaker, Broken Hill; John Dunstan, architect, Broken Hill; George Urquhart, drover, Broken Hill; William Russell, carpenter and builder, Broken Hill; Frederick Robe Hamilton, manager, Mount Gipps station; Hugh James White, senior-constable, Silverton; Charles Thomas Hyde, water and fuel merchant, Broken Hill; William Francis Du Rieu, grocer and produce merchant, Broken Hill; William Harry, contractor, Broken Hill; John Raven, miner, and representative of the Miners' Association, Broken Hill; Peter Scully, miner, and representative of the Miners' Association, Broken Hill; William John Retallick, storekeeper, and alderman, Broken Hill; and William Robert Nairn, draper, Broken Hill, were sworn, and examined.

The Committee adjourned at 4.40 p.m., until 10 o'clock a.m., on Thursday, the following day.

TUESDAY, 11 *AUGUST*, 1903.

The Committee met at the Court-house, Broken Hill, at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Vernon Forster Stanley Low, manager, Block 10 Mine, Broken Hill; James Hibbard, manager, Central Mine, Sulphide Corporation, Broken Hill; Alexander Mackenzie Wilson, accountant, Broken Hill South Mine; Guillaume Daniel Delprat, manager, Broken Hill Proprietary Mine; Charles Robert Murphy, manager, Mundi Mundi station, Umberumberka Creek; Robert Eldridge, engine-driver, Broken Hill; Joseph Goldsworthy, miner, Broken Hill; James Booth, medical practitioner, Broken Hill; Thomas William Brown, medical practitioner, Broken Hill; John Gilbert Mackay, medical practitioner, Broken Hill; Richard Watson English, surveyor, Broken Hill; Richard Williams Dunstan, produce merchant, Broken Hill; William Compton Davies, draper, and member of the Chamber of Commerce, Broken Hill; and Jonathan Richard Bowering, agent, and alderman, Broken Hill, were sworn, and examined.

Jabez Wright, undertaker, Broken Hill, was sworn, and further examined.

The Committee adjourned at 4·40 p.m., until 10 o'clock a.m., on Wednesday, the following day.

WEDNESDAY, 12 *AUGUST*, 1903.

The Committee met at the Court-house, Broken Hill, at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Edwin Atkinson Whitehead, engineer and manager, Broken Hill Water Supply, Ltd.; Charles Eley, general manager, Silverton Tramway Company, Broken Hill; and Robert Scobie, Esq., M.P., were sworn, and examined.

Alexander Hendry, Mayor of Broken Hill, was sworn, and further examined.

The Committee adjourned at 12·50 p.m., and at 7·15 p.m., after visiting the Broken Hill Proprietary mine, where they witnessed the method now adopted there of increasing the water supply by the condensation of steam, left Broken Hill for Melbourne, *via* Adelaide, and arrived at Melbourne on Friday, 14th August, at 9·55 a.m.

FRIDAY, 14 *AUGUST*, 1903.

The Committee met at the Town Hall, Melbourne, at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

George Swinburne, Chairman, Broken Hill Water Supply, Ltd., Melbourne; and John McGregor, civil engineer, Melbourne, were sworn, and examined.

The Committee adjourned at a quarter to 5 p.m., and on the following day, Saturday, 15th August, left Melbourne by the 3·30 p.m. express train for Sydney, which was reached on Sunday, 16th August, at 9·5 a.m.

MONDAY, 17 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £49 were passed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Southern Breakwater, entrance to the Clarence River.

Clauses 1 to 9 were passed.

Clause 10—Trade expansion.

Mr. Hawthorne moved,—"That the clause be amended by the omission of the words 'and if the harbour works were completed, it is pointed out, there would be an inducement for ocean-going vessels of large size to visit the river and take away the meat direct to England.'"

The amendment was negatived on the following division, upon the question "that the words proposed to be omitted stand part of the clause":—

Ayes, 6.	Noes, 1.
Mr. McFarlane,	Mr. Hawthorne.
Mr. Campbell,	
Mr. Kethel,	
Mr. Hughes,	
Mr. McGowen,	
Mr. Moore.	

The clause, and the remaining clauses of the Report were passed, the Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 18 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and further examined.

Cecil Aubrey Coghlan, solicitor, Sydney; and William John Williams, Esq., M.P., were sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 19 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

William John Williams, Esq., M.P., was sworn, and further examined.

John Henry Cann, Esq., M.P., was sworn, and examined.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 20 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.,

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the water supply for the town of Broken Hill.

John Henry Cann, Esq., M.P., was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

FRIDAY,

FRIDAY, 21 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Leslie Augustus Burton Wade, Principal Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and further examined.

Walter Alexander Smith, Metropolitan District Engineer, Roads and Bridges and Public Watering-places Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Monday, 24th August.

MONDAY, 24 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Walter Alexander Smith, Metropolitan District Engineer, Roads and Bridges and Public Watering-places Branch, Department of Public Works, was sworn, and further examined.

Charles Frazer O'Hanlon, accountant and agent, Sydney, was sworn, and examined.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 25 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and examined.

Mr. Hughes gave notice that he would move at the next meeting of the Committee,—"That the Committee proceed to consider the evidence on the proposed Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, with a view to reporting on the subject to the Legislative Assembly."

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

William Bethel Sharp, President, Chamber of Commerce, Newcastle, was sworn, and examined.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 26 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.,

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works; and Robert Scobie, Esq., M.P., were sworn, and further examined.

Mr. Hughes' notice of motion for closing the evidence in the inquiry was postponed.

The Committee adjourned at ten minutes past 4, until 2 o'clock p.m. on Thursday, the following day

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THURSDAY,

THURSDAY, 27 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and further examined,

Harry Stockdale, journalist, Sydney; and William John Ferguson, Esq., M.P., were sworn, and examined.

Leslie Augustus Burton Wade, Principal Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and further examined.

Mr. Hughes moved,—"That the Committee proceed to consider the evidence on the proposed Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. McGowen, and passed.

The Committee adjourned at twenty minutes past 4, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 28 *AUGUST*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, and a general discussion took place on the evidence given in the inquiry.

The Committee adjourned at five minutes past 4, until 10 o'clock a.m. on Saturday, the following day.

SATURDAY, 29 *AUGUST*, 1903.

The Committee met at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Mr. McGowen (with concurrence) moved,—"That, in the opinion of the Committee, it is not expedient that the proposed Dam and tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, as referred to them by the Legislative Assembly, be constructed; but they recommend that the dam be carried out as proposed, and a rising main be laid therefrom into the town of Broken Hill for the purpose of connecting with the present water supply service from Stephen's Creek, which should be purchased from the Broken Hill Water Supply Company, Limited, at a valuation."

Mr. Moore seconded the motion.

Mr. Kethel moved,—"That the motion be amended by omitting all the words after the word 'recommend,' with a view to inserting the following words:—'that the Yancowinna diversion scheme be carried out by the Broken Hill Water Supply Company on the terms stated in No. 4 of their proposals, viz., that the company retain possession of their works until the expiration of their present lease, and construct the Yancowinna diversion, for the carrying out of which the company to be granted such extension of lease as may be necessary, based on actuarial computation, to enable them to recoup the outlay.'"

The Committee divided on the question "That the words proposed to be omitted stand part of the motion," with the following result:—

Ayes, 3.	Noes, 4.
Mr. Hawthorne,	Mr. McFarlane,
Mr. McGowen,	Mr. Campbell,
Mr. Moore.	Mr. Kethel,
	Mr. Hughes.

On

On the question "That the words proposed to be inserted be so inserted," the Committee divided, with the following result:—

Ayes, 4.	Noes, 3.
Mr. McFarlane,	Mr. Hawthorne,
Mr. Campbell,	Mr. McGowen,
Mr. Kethel,	Mr. Moore.
Mr. Hughes.	

The motion as amended—"That, in the opinion of the Committee, it is not expedient that the proposed Dam and tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, as referred to them by the Legislative Assembly, be constructed; but they recommend that the Yancowinna diversion scheme be carried out by the Broken Hill Water Supply Company on the terms stated in No. 4 of their proposals, viz., that the company retain possession of their works until the expiration of their present lease, and construct the Yancowinna diversion, for the carrying out of which the company, to be granted such extension of lease as may be necessary, based on actuarial computation to enable them to recoup the outlay,"—was passed on the following division:—

Ayes, 4.	Noes, 3.
Mr. McFarlane,	Mr. Hawthorne,
Mr. Campbell,	Mr. McGowen,
Mr. Kethel,	Mr. Moore.
Mr. Hughes.	

The Committee adjourned at 1 p.m., until 2 o'clock p.m. on Monday, 31st August.

MONDAY, 31 *AUGUST*, 1903.

The Committee met at 2 p.m,

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Clauses 1 to 5 were passed.

The further consideration of the Report was postponed.

The Committee adjourned at 4·35 p.m., until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 1 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered their Report to the Legislative Assembly on the proposed Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Clause 6—Position of the Broken Hill Water Supply, Limited, or Stephen's Creek Company—was postponed.

Clause 7—The evidence.

Mr. Hughes moved,—"That the clause be amended by the insertion after the words 'not one of figures' of the words 'on the other hand, as will be seen by Mr. Wade's detailed estimate in the evidence, none of the proposals put forward by the Mayor can be carried out under the provisions of the Country Towns Water Supply Act, either on the 30, 50, or 100 years basis, without leaving a heavy annual deficiency.'"

The amendment was passed on the following division, upon the question "that the words proposed to be inserted be so inserted":—

Ayes, 5.	Noes, 2.
Mr. McFarlane,	Mr. McGowen.
Mr. Campbell,	Mr. Moore,
Mr. Kethel,	
Mr. Hughes,	
Mr. Hawthorne.	

The clause, as amended, was passed.

The further consideration of the Report was postponed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

John Richard Hall, merchant, Newcastle, was sworn, and examined.

The Committee further considered their Report to the Legislative Assembly on the proposed Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Clause 6—Position of the Broken Hill Water Supply, Limted, or Stephen's Creek Company.

Mr. Hawthorne moved,—"That the clause be amended by the omission of the following words after the word 'Limited,' in the first line of the clause:—'or Stephen's Creek Company, claim to have done everything in their power to supply Broken Hill with water of good quality, and, under the circumstances, at a reasonable price.'"

The

The amendment was negatived on the following division, upon the question "that the words proposed to be omitted stand part of the clause":—

Ayes, 4.	Noes, 3.
Mr. McFarlane,	Mr. Hawthorne,
Mr. Campbell,	Mr. McGowen,
Mr. Kethel,	Mr. Moore.
Mr. Hughes.	

The clause was passed on the following division:—

Ayes, 5.	Noes, 2.
Mr. McFarlane,	Mr. McGowen,
Mr. Campbell,	Mr. Moore.
Mr. Kethel,	
Mr. Hughes,	
Mr. Hawthorne.	

Clauses 8 and 9 were passed.

The further consideration of the Report was postponed.

The Committee adjourned at 5·32 p.m., until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 2 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered their Report to the Legislative Assembly on the proposed Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

The Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Railway from Tenterfield to Casino.

Clauses 1 to 7 were passed.

The further consideration of the Report was postponed.

The Committee adjourned at 4 o'clock until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 3 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered their Report to the Legislative Assembly on the proposed Railway from Tenterfield to Casino.

Clauses 8 to 12 were passed.

The further consideration of the Report was postponed.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

Mr. Kethel gave notice that he would move at the next meeting of the Committee,—"That the Committee proceeded to consider the evidence on the proposed Railway from Lockhart to Clear Hills, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Friday, the following day.

FRIDAY, 4 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Robert William Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of completing the Southern Training-wall, and constructing the Eastern Training-wall and portion of the Northern Breakwater, in connection with the Hastings River Improvements.

Robert Davidson, Esq., M.P., was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Robert Davidson, M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Monday, 7th September.

MONDAY,

MONDAY, 7 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered their Report to the Legislative Assembly, on the proposed Railway from Tenterfield to Casino.

The remaining Clauses of the Report were passed, the Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee adjourned at 4·15 p.m., until 2 o'clock p.m., on Tuesday, the following day.

TUESDAY, 8 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

Mr. Kethel moved,—"That the Committee proceed to consider the evidence on the proposed Railway from Lockhart to Clear Hills, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. McGowen, and passed.

Mr. Kethel (with concurrence) moved,—"That, in the opinion of the Committee, it is expedient the proposed Railway from Lockhart to Clear Hills, as referred to them by the Legislative Assembly, be carried out at a cost not exceeding £2,000 per mile."

Mr. McGowen seconded the motion.

The debate was adjourned.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY, 9 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Frederick Thomas Matthews, late of Bellingen, was sworn, and examined.

The Committee adjourned at ten minutes to 4, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 10 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Camden Haven Harbour Improvement Works.

The Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee further considered the expediency of constructing a line of Railway from Lockhart to Clear Hills.

The adjourned debate on the motion of Mr. Kethel, seconded by Mr. McGowen:—"That, in the opinion of the Committee, it is expedient the proposed Railway from Lockhart to Clear Hills, as referred to them by the Legislative Assembly, be carried out at a cost not exceeding £2,000 per mile," was resumed.

The motion was negatived on the following division:—

Ayes, 3.	Noes, 4.
Mr. McFarlane,	Mr. Campbell,
Mr. Kethel,	Mr. Hughes,
Mr. McGowen.	Mr. Hawthorne,
	Mr. Moore.

Mr. Hughes moved,—"That, in the opinion of the Committee, it is not expedient the proposed Railway from Lockhart to Clear Hills, as referred to them by the Legislative Assembly, be carried out."

The motion was seconded by Mr. Hawthorne, and passed on the following division:—

Ayes, 4.	Noes, 3.
Mr. Campbell,	Mr. McFarlane,
Mr. Hughes,	Mr. Kethel,
Mr. Hawthorne,	Mr. McGowen.
Mr. Moore.	

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 11 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Walter Alexander Smith, Metropolitan District Engineer and Inspecting Engineer for the North Coast districts, Roads and Bridges and Public Watering Places Branch, Department of Public Works, was sworn, and examined.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Northern Breakwater, entrance to the Clarence River.

The Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee adjourned at ten minutes to 4, until half-past 10 o'clock a.m. on Monday, 14th September.

MONDAY, 14 *SEPTEMBER*, 1903.

The Committee met at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to 17s. 9d. were passed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Honorable James Henry Young, was sworn, and examined.

The Committee adjourned at a quarter to 1 p.m., until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 15 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Thomas Kennedy, Assistant Engineer, Railway Construction Branch, Department of Public Works; and Donald McFadyen, General Manager, New South Wales Fresh Food and Ice Company, Ltd., were sworn, and examined.

Charles Henry Caswell, Assistant Engineer, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at five minutes to 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY,

WEDNESDAY, 16 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letters from Mr. Percy Waddy, West Maitland, with reference to accommodation for railway passengers on the East Greta Coal Mining Company's railway between West Maitland and Stanford Merthyr, in relation to the Committee's inquiry respecting the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

The correspondence was received.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Francis Clarke, Esq., M.P., was sworn, and examined.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 17 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of completing the southern training-wall, and constructing the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements.

Francis Clarke, Esq., M.P., was sworn, and examined.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Railway from Glen Innes to Inverell, and discussed clause 1.

The further consideration of the Report was postponed.

The Committee adjourned at 4 o'clock, until 11 o'clock a.m. on Friday, the following day.

FRIDAY, 18 *SEPTEMBER*, 1903.

The Committee met at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Alfred Ashley Atkinson, Chief Inspector of Coal Mines, Department of Mines, was sworn, and examined.

The Committee further considered their Report to the Legislative Assembly on the proposed Railway from Glen Innes to Inverell.

Clause 1—History of the proposal—was postponed.

Clauses 2 to 9 were passed.

The further consideration of the Report was postponed.

The Committee adjourned at a quarter to 1 p.m., until a quarter past 10 o'clock a.m. on Saturday, the following day, at West Maitland.

SATURDAY, 19 *SEPTEMBER*, 1903.

The Committee having, in connection with their inquiry respecting the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, left Sydney by the 5·10 p.m. train on Friday, 18th September, for West Maitland, met at West Maitland on Saturday, 19th September, at 10·15 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, in order to inspect the arrangements on the East Greta Coal Mining Company's railway for the conveyance of passengers between West Maitland and East Greta, Aberdare Junction, Heddon, and Stanford Merthyr, under improved conditions not in existence at the time of their previous visit to the district, travelled by ordinary train from West Maitland to Stanford Merthyr and back again to West Maitland.

A further inspection was also made of Kurri Kurri township, to ascertain the progress since the Committee's last visit, in the erection of buildings.

The Committee returned to Sydney by the 3·8 p.m. train from Newcastle, reaching there at 6·35 p.m., at which hour they adjourned until 2 o'clock p.m., on Monday, 21st September.

MONDAY, 21 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Training-wall along the eastern side of Stewart's Island, and a Breakwater on the southern side of the entrance, Nambucca River.

George Stuart Briner, Esq., M.P., was sworn, and examined.

The Committee further considered their Report to the Legislative Assembly on the proposed Railway from Glen Innes to Inverell.

The remaining clauses of the Report were passed, the Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Mr. Kethel gave notice that he would move at the next meeting of the Committee—"That the Committee proceed to consider the evidence on the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Tuesday, the following day.

TUESDAY, 22 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

John Wheeler, Secretary, Newcastle-Wallsend Coal Company, was sworn, and examined.

The Committee further considered the expediency of completing the Southern Training-wall, and constructing the Eastern Training-wall and portion of the Northern Breakwater, in connection with the Hastings River Improvements.

The Honorable James Henry Young, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

Mr. Kethel moved,—"That the Committee proceed to considered the evidence on the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. Campbell, and passed.

Mr. McGowen (with concurrence) moved,—"That, in the opinion of the Committee, it is expedient the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, as referred to them by the Legislative Assembly, be carried out."

Mr. Hawthorne seconded the motion.

The debate was adjourned.

The Committee adjourned at five minutes to 4, until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY, 23 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

An account amounting to £3 was passed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

John Estell, Esq., M.P., was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Michael John MacMahon, Esq., M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY,

THURSDAY, 24 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Memorandum from the Engineer-in-Chief for Railway Construction, with reference to the value of private land required in connection with the proposed Railway from Carlingford to Dural.

The correspondence was received.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

The adjourned debate on the motion by Mr. McGowen, seconded by Mr. Hawthorne—"That, in the opinion of the Committee, it is expedient the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, as referred to them by the Legislative Assembly, be carried out"—was resumed.

The debate was adjourned.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Friday, the following day.

FRIDAY, 25 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

The adjourned debate on the motion by Mr. McGowen, seconded by Mr. Hawthorne,—"That, in the opinion of the Committee, it is expedient the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries, as referred to them by the Legislative Assembly, be carried out,"—was resumed.

The motion was passed on the following division:—

Ayes, 4.	Noes, 3.
Mr. McFarlane,	Mr. Campbell,
Mr. Hawthorne,	Mr. Kethel,
Mr. McGowen,	Mr. Hughes.
Mr. Moore.	

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

David Watkins, Esq., M.P., was sworn, and examined.

Hugh McLachlan, Secretary to the Railway Commissioners, was sworn, and further examined.

The Committee adjourned at ten minutes past 4, until 9·33 a.m., on Saturday, the following day.

SATURDAY, 26 *SEPTEMBER*, 1903.

The Committee met at 9·33 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, in connection with their inquiry respecting the expediency of constructing a line of Railway from Carlingford to Dural, and in company with Mr. C. McD. Stewart, Assistant Engineer, Railway Construction Branch, Department of Public Works, left Sydney to inspect the route of the proposed railway, and the districts the railway would serve.

Proceeding by ordinary train to Carlingford, they travelled thence by vehicle to Dural, in close proximity to the route of the railway, and from Dural to Kenthurst and Glenorie. From Glenorie they returned to Dural, and thence drove through Castle Hill and Baulkham Hills to Parramatta, in order to see the Baulkham Hills-Parramatta Tramway.

Leaving Parramatta by the 4·25 p.m. train, the Committee reached Sydney at 5·7 p.m., and adjourned until 9·5 a.m., on Monday, 28th September.

MONDAY,

MONDAY, 28 *SEPTEMBER*, 1903.

The Committee met at 9·5 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, in connection with their inquiry respecting the expediency of constructing a line of Railway from Carlingford to Dural, left Sydney to further inspect the districts to be served by the proposed railway.

Proceeding to Hornsby by ordinary train, they drove from Hornsby to Galston and Arcadia where, under the guidance of a number of the local residents, they made an extended inspection of those districts.

From Galston they travelled *via* Dural and Pennant Hills to Pennant Hills railway station.

The Committee left Pennant Hills by the 3·10 p.m. train, and reached Sydney at 4·5 p.m., at which hour they adjourned until 2 o'clock p.m., on Tuesday, the following day.

TUESDAY, 29 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Jeremiah Joseph Doyle, D.D., Bishop of Lismore, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

John Charles Hunt, fruit-grower, Dural, was sworn, and examined.

The Committee adjourned at fifteen minutes past 4, until 2 o'clock p.m., on Wednesday, the following day.

WEDNESDAY, 30 *SEPTEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

John Charles Hunt, fruit-grower, Dural, was sworn, and further examined.

Samuel James Moore, fruit-grower, Dural; and William Rudlan Hawkins, fruit-grower, Dural, were sworn, and examined.

The Committee adjourned at six minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 1 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

Samuel Fagan, fruit-grower, Galston; and Luke Gallard, fruit-grower, Kenthurst, were sworn, and examined.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m. on Friday, the following day.

FRIDAY,

FRIDAY, 2 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

James Edward Dale, fruit-grower, Glenorie; Francis Alexander Nicholson, fruit-grower, Five-mile Forest; Ephraim King, fruit-grower, Glenorie; and Arthur Rae, fruit-grower, Glenorie, were sworn, and examined.

The Committee adjourned at six minutes past 4, until 2 o'clock p.m. on Tuesday, 6th October.

TUESDAY, 6 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman,

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £1 8s. were passed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

James Edwin Lewis, general storekeeper, Galston; and James Purser, fruit-grower, Castle Hill, were sworn, and examined.

Samuel Fagan, fruit-grower, Galston, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 7 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

Alfred Trethowan, fruit-grower, Arcadia; and Henry Albert Best, fruit-grower, Dural, were sworn, and examined.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 8 *OCTOBER*, 1903.

The Committee met t 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	James Sinclair Taylor McGowen, Esq.,
The Hon. Alexander Kethel,	Samuel Wilkinson Moore, Esq.
John Stuart Hawthorne, Esq.,	

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £12 6s. 3d. were passed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

Broughton Barnabas O'Conor, Esq., M.P., was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Walter Scott Targett, journalist, Penshurst, was sworn, and examined.

The Committee adjourned at five minutes past 4, until half-past 10 o'clock a.m. on Friday, the following day.

FRIDAY,

FRIDAY, 9 *OCTORER*, 1903.

The Committee met at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Charles Paladus McDonell, was sworn, and examined.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

The Honorable Jacob Garrard, President, Metropolitan Board of Water Supply and Sewerage; and Sobey Lyne Vivian, soft goods salesman, were sworn, and examined.

The Committee adjourned at twenty minutes past 12 p.m., until 10 o'clock a.m. on Monday, 12th October, at Brisbane.

MONDAY, 12 *OCTOBER*, 1903.

The Committee having, in connection with their inquiry respecting the proposed Railway from Murwillumbah to the Tweed Heads, left Sydney by the 5·10 p.m. train on Friday, 9th October, for Brisbane, met in the Brisbane Town Hall, on Monday, 12th October, at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

James Forsythe Thallon, Commissioner for Railways, Queensland; George Henry Collin, manager for William Collin & Son, Brisbane; and John Leahy, Esq., M.P., late Minister for Railways, Queensland, were sworn, and examined.

The Committee adjourned at a quarter past 12 p.m., until 10 o'clock a.m. on Wednesday, 14th October, at Murwillumbah.

WEDNESDAY, 14 *OCTOBER*, 1903.

The Committee having, in relation to their inquiry respecting the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads, completed the taking of evidence in Brisbane, left Brisbane by train at 7·45 a.m. on Tuesday, 13th October, to travel over the newly-constructed railway from Nerang, Queensland, to the Tweeds Heads, to take evidence at Murwillumbah, Tumbulgum, and Tweeds Heads, and to inspect the route of the railway.

On Wednesday, 14th October, at 10 a.m., the Committee met at the Court-house, Murwillumbah.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

Frederick William Salmon, farmer, Murwillumbah; Peter Street, mayor, Murwillumbah; Russell Dowling, cane inspector, Colonial Sugar Company, Murwillumbah; William Henry Cliffon, secretary, Byron Bay Butter Factory, Byron Bay; Arthur Alleyne Loder, farmer, grazier, and cane-grower, Duranbah; William Mackay Gray Charles, grazier, Murwillumbah; Louis Solomons, auctioneer, Murwillumbah, were sworn, and examined.

The Committee adjourned at 4 o'clock, until half-past 9 o'clock a.m. on Thursday, the following day.

THURSDAY, 15 *OCTOBER*, 1903.

The Committee left Murwillumbah at 9·30 a.m. to inspect the route of the proposed Railway from Murwillumbah to the Tweed Heads, and the country in its vicinity.

At 10·45 a.m. the Committee met at the Hall, Tumbulgum.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

James

James Purcell, farmer, Terranora; Thomas Fraser, cane-grower, Terranora; Sydney Letchford Dearberg, cane-grower, publican, and baker, Tumbulgum; James Waldron, cane-grower, Tumbulgum; and Eric Oswald Loder, cane-grower, Terranora, were sworn, and examined.

Arthur Alleyne Loder, farmer, grazier, and cane-grower, Duranbah, was sworn, and further examined.

Elijah Caleb Job Marks, cane-grower and dairyman, Tumbulgum, was sworn, and examined.

The Committee then left Tumbulgum, and continued their inspection of the route of the proposed railway and the country in its vicinity to Tweed Heads, where they arrived at 5 p.m., and adjourned until a quarter past 10 o'clock a.m. on Friday, the following day.

FRIDAY, 16 *OCTOBER*, 1903.

The Committee met at the School of Arts, Tweed Heads, at 10·15 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Murwillumbah to the Tweed Heads.

Joseph Kirkwood, drogher master, Tweed Heads; Timothy O'Sullivan, cane-grower, Terranora; John Dobson Cullen, cane-grower, Terranora; Reuben Poyser, farmer, Bilambil Creek; William Henry Ducat, butcher and dairy farmer, Tweed Heads; and Richard Waller Dodds, cane-grower, Terranora, were sworn, and examined.

Elijah Caleb Job Marks, cane-grower and dairyman, Tumbulgum, was sworn, and further examined.

Stanley Hope Pierce, farmer, Piggabeen Creek, was sworn, and examined.

Joseph Kirkwood, drogher master, Tweed Heads, was sworn, and further examined.

At 2·30 p.m., the Committee left the Tweeds Heads to return to Sydney, *via* Brisbane, and reached Sydney on Tuesday, 20th October, at 11·8 a.m.

TUESDAY, 20 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

John Charles Hunt, fruit-grower, Dural; and Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, were sworn, and further examined.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Mr. Kethel gave notice that he would move at the next meeting of the Committee,—"That the Committee proceed to consider the evidence on the proposed Tramway from Wallsend to West Wallsend, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 3·20 p.m., until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 21 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Walter Scott Targett, journalist, Penshurst, was sworn, and further examined.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

Walter Scott Targett, journalist, Penshurst, was sworn, and examined.

Mr. Kethel's notice of motion with reference to the closing of the evidence in the inquiry respecting the proposed Tramway from Wallsend to West Wallsend, was postponed.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY,

THURSDAY, 22 OCTOBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £36 were passed.

The Committee further considered the expediency of constructing a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 5 minutes to 4, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 23 OCTOBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Mr. Kethel's notice of motion for the closing of the evidence in the inquiry was withdrawn.

John Sydney Cargill, Solicitor for Railways, was sworn, and examined.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 25 minutes to 4, until 2 o'clock p.m. on Monday, 26th October.

MONDAY, 26 OCTOBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from the Honorary Secretary, Baulkham Hills Progress Association, with reference to the Committee's inquiry respecting the proposed Railway from Carlingford to Dural.

The correspondence was received.

The Committee proceeded to consider the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

Joseph Davis, Under Secretary, Department of Public Works; and Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, were sworn, and examined.

The Committee adjourned at 5 minutes past 4, until half-past 1 o'clock p.m. on Tuesday, the following day.

TUESDAY, 27 OCTOBER, 1903.

The Committee met at 1·30 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	The Hon. John Hughes,
The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,

James Sinclair Taylor McGowen, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £3 0s. 9d. were passed.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour, and accompanied by the Principal Engineer, Harbours and Rivers Branch, Department of Public Works, proceeded to Hen and Chicken Bay, where they inspected the foreshores and swamps it is proposed to reclaim.

The Committee returned to Sydney at 4·40 p.m., and adjourned until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY,

WEDNESDAY, 28 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 29 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

William Archer, Esq., M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 30 *OCTOBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane Esq., Chairman.

The Hon William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

Cecil Purser, medical practitioner, Petersham, was sworn, and examined.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

Michael Sheppard, Mayor of Burwood, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Monday, 2nd November.

MONDAY, 2 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Tramway from Wallsend to West Wallsend.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

Charles James Hill, alderman, Five Dock; and John Hector Lucas, licensed surveyor, Five Dock, were sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY,

TUESDAY, 3 NOVEMBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

Harold Francis Norrie, Secretary, Sydney Harbour Trust; Henry Deane Walsh, Engineer-in-Chief, Sydney Harbour Trust; and Thomas Obed Correy, Mayor of Concord, were sworn, and examined.

The Committee adjourned at half-past 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 4 NOVEMBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carring out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

Percy Allan, Acting Principal Assistant Engineer, Water Conservation and Sewerage Branch, Department of Public Works; Oliver Howard Watts, alderman, Five Dock; James Henry Bolster, Council Clerk, Concord; and James Casey, overseer, Municipality of Concord, were sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 5 NOVEMBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay.

Thomas Henley, Mayor of Drummoyne; and Arthur McLaughlin, clerk, Darlinghurst, were sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Friday, the following day.

FRIDAY, 6 NOVEMBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, in connection with their inquiry respecting the carrying out of Reclamation Works at Hen and Chicken Bay, Sydney Harbour, proceeded to the bay by way of Burwood, and further inspected the swamps and low-lying land it is intended to reclaim, and the surrounding localities.

The Committee returned to Sydney at 5 p.m., and adjourned until 2 o'clock p.m., on Tuesday, 10 November.

TUESDAY, 10 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Railway from Lockhart to Clear Hills.

The Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee adjourned at 6 minutes past 4, until 2 o'clock, p.m., on Wednesday, the following day.

WEDNESDAY, 11 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Tramway from East to West Maitland, and on to the Stanford Merthyr and Pelaw Main Collieries.

The Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee further considered the expediency of constructing a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

Mr. Hughes gave notice that he would move at the next meeting of the Committee,—"That the Committee proceed to consider the evidence on the proposed construction of a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 12 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River.

Mr. Hughes moved,—"That the Committee proceed to consider the evidence on the proposed construction of a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River, with a view to reporting on the subject to the Legislative Assembly.

The motion was seconded by Mr. Hawthorne, and passed.

Mr. Kethel (with concurrence) moved,—"That, in the opinion of the Committee, it is not expedient the proposed construction of a training-wall along the eastern side of Stewart's Island, and a breakwater on the southern side of the entrance, Nambucca River, as referred to them by the Legislative Assembly, be carried out; but they recommend that the southern breakwater be constructed to a length of 2,100 feet, at a cost not exceeding £26,000, such amount to be provided by applying to the carrying out of the southern breakwater the unexpended balance of the amount authorised for the construction of the works recommended by the Public Works Committee in 1898."

The motion was seconded by Mr. McGowen, and passed.

The Committee further considered the expediency of completing the southern training-wall, and constructing the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements.

Mr. Kethel gave notice that he would move at the next meeting of the Committee,—"That the Committee proceed to consider the evidence on the proposed completion of the southern training-wall, and construction of the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

FRIDAY,

FRIDAY, 13 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of completing the southern training-wall, and constructing the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements.

Thomas William Keele, Principal Engineer, Harbours and Rivers Branch, Department of Public Works, was sworn, and further examined.

Mr. Kethel moved,—"That the Committee proceed to consider the evidence on the proposed completion of the southern training-wall, and construction of the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. Campbell, and passed.

Mr. Kethel gave notice that he would move at the next meeting of the Committee,—"That, in the opinion of the Committee, it is not expedient the proposed completion of the southern training-wall, and construction of the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements, as referred to them by the Legislative Assembly, be carried out."

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Monday, 16th November.

MONDAY, 16 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Carlingford to Dural.

John Harper, Chief Traffic Manager, Department of Railways, was sworn, and further examined.

James Tamsett, orchardist, and Honorary Secretary, Baulkham Hills Progress Association, was sworn, and examined.

The Committee further considered the expediency of completing the southern training-wall, and constructing the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements.

Mr. Kethel moved,—"That, in the opinion of the Committee, it is not expedient the proposed completion of the southern training-wall, and construction of the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements, as referred to them by the Legislative Assembly, be carried out."

Mr. McGowen seconded the motion.

The debate was adjourned.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 17 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Charles Nicholson Jewel Oliver, Chief Commissioner for Railways, was sworn, and examined.

The Committee adjourned at half-past 4, until 2 o'clock, p.m. on Wednesday, the following day.

WEDNESDAY,

WEDNESDAY, 18 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

Edward Johnstone Sievers, Goverment Land Valuer, was sworn, and examined.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

William Keep Chapman, ironmonger, Concord; and Arthur Gilbert Friend, general merchant, Five Dock, were sworn, and examined.

The Committee adjourned at five minutes past 4, until 2 o'clock p.m., on Thursday, the following day.

THURSDAY, 19 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider the expediency of constructing a line of Railway from Liverpool to Mulgoa.

Joseph Davis, Under Secretary, Department of Public Works; and Henry Deane, Engineer-in-Chief, Railway Construction Branch, Department of Public Works, were sworn, and examined.

The Committee further considered the expediency of completing the southern training-wall, and constructing the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements.

The adjourned debate on the motion by Mr. Kethel, seconded by Mr. McGowen,—"That in the opinion of the Committee, it is not expedient the proposed completion of the southern training-wall, and construction of the eastern training-wall and portion of the northern breakwater, in connection with the Hastings River Improvements, as referred to them by the Legislative Assembly, be carried out," was resumed.

The motion was passed.

The Committee adjourned at a quarter to 4, until 10 o'clock a.m. on Friday, the following day.

FRIDAY, 20 *NOVEMBER*, 1903.

The Committee met at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from the Acting Clerk of the Legislative Assembly, informing the Committee of the passing by the Legislative Assembly of a resolution referring back to them for further consideration and report, on the ground that the matter requires further investigation, the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

The correspondence was received.

The Committee further considered the expediency of constructing a line of Railway from Liverpool to Mulgoa.

John Harper, Chief Traffic Manager, Department of Railways, was sworn, and examined.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and further examined.

The Committee proceeded to consider the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and examined.

The Committee adjourned at 12 o'clock, noon, until 2 o'clock p.m. on Monday, 23rd November.

MONDAY,

MONDAY, 23 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out Reclamation Works at Hen and Chicken Bay, Sydney Harbour.

William George Armstrong, Medical Officer of Health, Metropolitan Combined Districts, was sworn, and examined.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill, and deliberated as to the order of their proceedings in the inquiry.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 24 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson, Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to 16s. 6d. were passed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and further examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 25 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and further examined.

John Henry Cann, Esq., M.P., was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 26 *NOVEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

John Henry Cann, Esq., M.P., was sworn, and further examined.

William John Williams, Esq., M.P., was sworn, and examined.

The Committee adjourned at 5 minutes past 4, until 10 o'clock a.m. on Friday, the following day.

FRIDAY,

FRIDAY, 27 *NOVEMBER*, 1903.

The Committee met at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £11 were passed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Walter Alexander Smith, Metropolitan District Engineer, Roads and Bridges Branch, Department of Public Works; and William Henry Hall, Assistant Statistician, Government Statistician's Department, were sworn, and examined.

William John Williams, Esq., M.P., was sworn, and further examined.

The Committee adjourned at 5 minutes past 12, until 11 a.m., on Monday, 30th November, at Wyalong.

MONDAY, 30 *NOVEMBER*, 1903.

The Committee having, in connection with their inquiry respecting the proposed Railway from Wyalong to Hillston, left Sydney by the 8·50 p.m. train on Friday, 27 November, to inspect the route of the railway and alternative routes, and to take local evidence, met in the Municipal Council Chambers, Wyalong, on Monday, 30 November, at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Ernest Alfred Neeld, Mayor of Wyalong; Michael Cusack, commission agent, Wyalong; and William Fealy, carrier, Wyalong, were sworn, and examined.

The Committee adjourned at 12·20 p.m., until 9 o'clock a.m. on Tuesday, the following day.

TUESDAY, 1 *DECEMBER*, 1903.

The Committee met at the "Commercial Hotel" Wyalong, at 9 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee, in continuation of their inquiry respecting the expediency of constructing a line of Railway from Wyalong to Hillston, then left Wyalong to inspect the country along the route of the proposed railway, and to take further evidence, and, travelling in close proximity to the route, reached Yalgogrin at 1·30 p.m.

Arrangements were made for the attendance of witnesses for examination, and the Committee adjourned until 11 o'clock a.m. on Wednesday, the following day.

WEDNESDAY, 2 *DECEMBER*, 1903.

The Committee met at the Police Station, Yalgogrin, at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Theophilus Frederick Smith, general storekeeper, Yalgogrin; Dugald Smart, miner, Yalgogrin; Joseph Henry Morrison, miner, Yalgogrin; Henry Roberts, police constable, Yalgogrin; Patrick O'Gorman, farmer and grazier, Narriah; and Walter Barnett, hotelkeeper, Yalgogrin, were sworn, and examined.

The Committee adjourned at 3·40 p.m., until 8 o'clock a.m. on Thursday, the following day.

THURSDAY,

THURSDAY, 3 *DECEMBER*, 1903.

The Committee met at the "Royal Hotel," Yalgogrin, at 9 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting was read, and confirmed.

The Committee, having completed the taking of evidence at Yalgogrin, with reference to the expediency of constructing a line of Railway from Wyalong to Hillston, left Yalgogrin to continue their inspection of the country along the route of the railway, and travelled to Rankin's Springs.

At 8·30 p.m. the Committee met at the "Rankin's Springs Hotel," and further considered the proposed railway.

Roger Hale Sheaffe, station manager, Conapaira, Narriah, and Narradhan; Thomas Herbert Templeton, selector, Narradhan; Thomas Shields, selector, Narradhan; and John Hannen, hotelkeeper, storekeeper, and farmer, Rankin's Springs, were sworn, and examined.

The Committee adjourned at 10 p.m., until 10 o'clock a.m. on Friday, the following day.

FRIDAY, 4 *DECEMBER*, 1903.

The Committee met at the "Rankin's Springs Hotel," Rankin's Springs, at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Continuing their inspection and inquiry respecting the expediency of constructing a line of Railway from Wyalong to Hillston, the Committee then left Rankin's Springs, and at 6·15 p.m. reached Monia Gap.

The Committee adjourned until 7 o'clock a.m. on Saturday, the following day.

SATURDAY, 5 *DECEMBER*, 1903.

The Committee met at Monia Gap Out-station on Merri-Merrigal Holding, at 7 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then resumed their journey through the country in the vicinity of the route of the proposed Railway from Wyalong to Hillston, and, reaching Hillston at 2 p.m., adjourned until 11 o'clock a.m. on Monday, 7th December.

MONDAY, 7 *DECEMBER*, 1903.

The Committee met at the Court-house, Hillston, at 11 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Robert Walter Stewart, Mayor of Hillston; Alfred James Cashmere, farmer, Hillston; Denis Dunn, farmer, Hillston; Thomas Cadell, Stock Inspector, Hillston; Donald Macpherson Mackay, grazier, Mooral; James Thomas Witcombe, storekeeper, Hillston; Frederick Milthorpe, grazier and farmer, Hillston; Harry Hurley Torr, postmaster, Hillston; and Isidore Louis Gallard, storekeeper, Mossgiel, were sworn, and examined.

The Committee adjourned at 4·20 p.m., and met again at 7·30 p.m.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Richard Cappar Webb, grazier, Roto; and Richard Ogle Moore, station manager, Coan Downs, were sworn, and examined.

The Committee adjourned at 8·52 p.m., until 8·30 a.m. on Tuesday, the following day.

TUESDAY,

TUESDAY, 8 *DECEMBER*, 1903.

The Committee met at the "Club House Hotel," Hillston, at 8·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee having, with reference to the proposed Railway from Wyalong to Hillston, completed the taking of evidence at Hillston, then left Hillston for Gunbar, to acquaint themselves with the nature of the country which would be served by the alternative route Temora to Hillston, *via* Gunbar, or its vicinity, and to take further evidence.

At 7·30 p.m. the Committee met at the "Gunbar Hotel," Gunbar.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Samuel Nixon, farmer, Gunbar, was sworn, and examined.

The Committee adjourned at 8·15 p.m., until half-past 9 o'clock a.m. on Wednesday, the following day.

WEDNESDAY, 9 *DECEMBER*, 1903.

The Committee met at the "Gunbar Hotel," Gunbar, at 9·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meetin were read, and confirmed.

Continuing their inspection and inquiry with reference to the proposed Railway from Wyalong to Hillston and the alternative route from Temora to Hillston, *via* Gunbar, or its vicinity, the Committee then left Gunbar for Mount Ida, travelling for most of the distance on or close to the survey from Barellan to Gunbar.

At 8·45 p.m. the Committee met at "Dumossa," Mount Ida, and further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Arthur William Colls, station manager, Merool Creek; and Hugh John MacInnes, were sworn, and examined.

The Committee adjourned at 9·35 p.m., until 7 o'clock a.m. on Thursday, the following day.

THURSDAY, 10 *DECEMBER*, 1903.

The Committee met at "Dumossa," Mount Ida, at 7 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, continuing their inspection in connection with the proposed Railway from Wyalong to Hillston and the alternative route Temora to Hillston, *via* Gunbar, or its vicinity, left "Dumossa," Mount Ida, and travelled to Mount Elliott where they arrived at 7·15 p.m., and adjourned until 10 o'clock a.m. on Friday, the following day.

FRIDAY, 11 *DECEMBER*, 1903.

The Committee met at the "Mount Elliott Hotel," Mount Elliott, at 10 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Leaving Mount Elliott the Committee then, in relation to their inquiry respecting the expediency of constructing a Railway from Wyalong to Hillston, travelled to Lake Cudgellico, *via* Rankin's Springs, for the purpose of inspecting the country along the alternative route Wyalong to Hillston, *via* Ungarie and Cudgellico.

MONDAY, 14 *DECEMBER*, 1903.

The Committee met at the Court-house, Lake Cudgellico, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel, | John Stuart Hawthorne, Esq.,
The Hon. John Hughes, | James Sinclair Taylor McGowen, Esq.,
Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

John Knight, managing storekeeper, Lake Cudgellico; Ewen MacRae, selector, Lake Cudgellico; Dugald MacInnes, farmer and dealer, Lake Cudgellico; George Francis Evans, farmer and grazier, near Lake Cudgellico; Farquhar MacRae, selector and contractor, Lake Cudgellico; and Robert George Jamieson, senior constable, Lake Cudgellico, were sworn, and examined.

The Committee adjourned at 1 p.m., until 7·45 a.m. on Tuesday, the following day.

TUESDAY, 15 *DECEMBER*, 1903.

The Committee met at the "Royal Mail Hotel," Lake Cudgellico, at 7·45 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel, | John Stuart Hawthorne, Esq.,
The Hon. John Hughes, | James Sinclair Taylor McGowen,
Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee then, in connection with their inquiry respecting the proposed Railway from Wyalong to Hillston, and in order to acquaint themselves as far as practicable with the nature of the country along the alternative route Wyalong to Hillston, *via* Lake Cudgellico, left Lake Cudgellico and travelled to Ungarie, reaching there at 5 p.m., at which hour they adjourned until half-past 10 o'clock a.m., on Wednesday, the following day.

WEDNESDAY, 16 *DECEMBER*, 1903.

The Committee met at the "Wollongough Hotel," Ungarie, at 10·30 a.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel, | John Stuart Hawthorne, Esq.,
The Hon. John Hughes, | James Sinclair Taylor McGowen, Esq.,
Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Wyalong to Hillston.

Thomas Phelan, grazier, Ungarie; William Ridley, farmer and grazier, Bena; George Hounsom Ridley, grazier and farmer, Bena; Charles Maurice Johns, grazier, Wollongough station, Ungarie; William Ridley, junr., grazier and farmer, Bena; and Charles William Ridley, settlement lessee, Bena, were sworn, and examined.

The Committee adjourned at 10 minutes past 12 p.m., and then left Ungarie for Wyalong and Sydney, reaching Sydney on Friday, 18th December, at 10·50 a.m.

MONDAY, 21 *DECEMBER*, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell, | John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel, | James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes, | Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Statement from residents of North Barellan, with reference to the proposed Railway from Wyalong to Hillston, and the alternative route *viâ* Barellan.

The correspondence was received.

Accounts amounting to £63 were passed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Mr. McGowen moved,—"That the Committee proceed to consider the evidence on the proposed Railway from Maitland to South Grafton, with a view to reporting on the subject to the Legislative Assembly."

The motion was seconded by Mr. Campbell, and passed.

The evidence taken in the inquiry was then submitted to a general discussion.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY,

TUESDAY, 22 DECEMBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,

Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

The general discussion in relation to the evidence given in the inquiry was continued.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 23 DECEMBER, 1903.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	Jame Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a line of Railway from Maitland to South Grafton.

Mr. McGowen moved,—"That, in the opinion of the Committee, it is expedient the proposed Railway from Maitland to South Grafton, as referred to them by the Legislative Assembly, be carried out, provided that, in accordance with the recommendation of the Railway Commissioners, a betterment tax be imposed upon the alienated lands within the area benefited by the railway until the line becomes self-supporting, and, in addition, a moiety of the revenue, whether from sale or lease, derived from the area of land still in possession of the Crown within the same radius, be devoted to writing down the capital cost of the railway."

The motion was seconded by Mr. Hughes, and passed on the following division:—

Ayes, 5.	Noes, 2.
Mr. McFarlane,	Mr. Campbell,
Mr. Kethel,	Mr. Moore.
Mr. Hughes,	
Mr. Hawthorne,	
Mr. McGowen.	

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Monday, 4th January, 1904.

MONDAY, 4 JANUARY, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Ernest Macartney de Burgh, Principal Assistant Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at a quarter past 4, until 2 o'clock p.m. on Tuesday, the following day.

TUESDAY, 5 JANUARY, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor M'Gowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of carrying out reclamation works at Hen and Chicken Bay, Sydney Harbour.

George Pile, estate agent, Sydney, was sworn, and examined.

The

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Robert Newby Kirk, representative in Sydney of the Broken Hill Proprietary Company; and William John Ferguson, Esq., M.P., were sworn, and examined.

The Committee adjourned at 10 minutes past 4, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 6 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumbera Creek, in connection with the Water Supply for the town of Broken Hill.

William John Ferguson, Esq., M.P., was sworn, and further examined.

The Committee adjourned at 10 minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 7 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider the expediency of constructing Water Supply Works for the city of Grafton and South Grafton.

Joseph Davis, Under Secretary, Department of Public Works, was sworn, and examined.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Friday, the following day.

FRIDAY, 8 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. Alexander Kethel,	John Stuart Hawthorne, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing Water Supply Works for the city of Grafton and South Grafton.

Ernest Macartney de Burgh, Principal Assistant Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Monday, 11th January.

MONDAY, 11 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing Water Supply Works for the city of Grafton and South Grafton.

Theodore Pridham, Assistant Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m., on Tuesday, the following day.

TUESDAY, 12 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the expediency of constructing Water Supply Works for the city of Grafton and South Grafton.

Edward Fisher Pittman, Under Secretary and Government Geologist, Department of Mines and Agriculture, was sworn, and examined.

Theodore Pridham, Assistant Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and further examined.

The Committee further considered the expediency of constructing a Dam and Tramway at Umberumberka Creek, in connection with the Water Supply for the town of Broken Hill.

Theodore Pridham, Assistant Engineer, Water Supply and Sewerage Construction Branch, Department of Public Works, was sworn, and examined.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 13 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further proceeded to consider their Twenty-First General Report to His Excellency the Governor.

Clauses 1 and 2 were passed.

The further consideration of the Report was postponed.

The Committee adjourned at 5 minutes to 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 14 *JANUARY*, 1904.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

John McFarlane, Esq., Chairman.

The Hon. William Robert Campbell,	John Stuart Hawthorne, Esq.,
The Hon. Alexander Kethel,	James Sinclair Taylor McGowen, Esq.,
The Hon. John Hughes,	Samuel Wilkinson Moore, Esq.

The minutes of the previous meeting were read, and confirmed.

Accounts amounting to £1 15s. 3d. were passed.

The Committee further considered their Twenty-First General Report to His Excellency the Governor.

Clause 3—Completed Inquiries.

Mr. McGowen moved,—"That the clause be amended by the insertion after the word 'resolved' in the paragraph relating to Southern and Northern Breakwaters, entrance to Clarence River, of the words 'by a majority of 6 to 1.'"

The amendment was negatived on the following division upon the question "that the words proposed to be inserted be so inserted":—

Ayes, 3.	Noes, 4.
Mr. Hawthorne,	Mr. McFarlane,
Mr. McGowen,	Mr. Campbell,
Mr. Moore.	Mr. Kethel,
	Mr. Hughes.

Mr. Hawthorne moved,—"That the clause be amended in the paragraph relating to Tramway from East to West Maitland and on to the Stanford Merthyr and Pelaw Main Collieries, by the omission of the following words:—'As it is not likely the tramway will be constructed within the next two years the line, according to this opinion, should pay from the time the trams commence running.'"

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The amendment was negatived on the following division upon the question, "That the words proposed to be omitted stand part of the clause" :—

Ayes, 6.	Noes, 1.
Mr. McFarlane,	Mr. Hawthorne.
Mr. Campbell,	
Mr. Kethel,	
Mr. Hughes,	
Mr. McGowen.	
Mr. Moore.	

The clause was then passed.

The remaining clauses of the Report were passed, the Report was adopted, and the Chairman was authorised to sign it for presentation to His Excellency the Governor.

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Harbour Improvements, Nambucca River.

Clause 1 was passed.

Clause 2—Inquiry in 1898—was postponed.

Clauses 3 to 6 were passed.

The further consideration of the Report was postponed.

The Committee adjourned at 4 o'clock, until 2 o'clock p.m. on Friday, the following day.

Sydney: William Applegate Gullick, Government Printer.—1904.