1908.
NEW ZEALAND.

SCHOOLS AND OTHER EDUCATIONAL INSTITUTIONS IN EUROPE AND AMERICA

(REPORT OF THE INSPECTOR-GENERAL'S VISIT TO).

Presented to both Houses of the General Assembly by Command of His Excellency.

Wellington, 24th September, 1908.

SIR,—

I have the honour to submit to you the following report of my visit last year, 1907, to certain schools and other educational institutions in Europe and America.

I have, &c.,
G. HOGBEN.

The Honourable George Fowlds,
Minister of Education.

In comparing the educational systems of various countries it is necessary to take into consideration the aims or ideals that the leaders of national educational movements set before themselves, the machinery by which they attempt to reach those aims—that is, the system of administration, and the range and the methods of teaching—the cost of education, and by whom it is paid, and the national character of the people, which often, but not always, determines the aims and ideals of the national system of education.

In any particular country the ideals of public education may be vague, and, indeed, may not even find expression; or they may be in a process of gradual change, and, if the country is a large one, may at any given time differ widely in different localities. This is distinctly the case in Great Britain, which, accordingly, in spite of great advances during the last thirty or forty years, cannot yet be said to have a national system of education. Many obstacles, such as sectarian and class feeling, have retarded the progress of the nation towards this desirable result; and, indeed, the existence of a large body of people in the community who are not yet convinced of the national advantages to be reaped from a complete and efficient national system still prevents the provision of the money without which the best education must remain the privilege of only a part of the people. Even in Germany, where the standard reached in many departments of education is so high, and where many States and cities have made very complete provision for vocational and technical training in addition to a sound substratum of popular instruction, there is far from equal opportunity for all classes; still less is there equal opportunity for women to obtain the same advantages of education as men. The United States of America, again, have no national system, nor are the State systems sufficiently alike or all so efficient as to produce the same result as a national system would produce. In spite of the excellence of the common schools in most parts of the Union, and of the high schools and universities in many cities, in spite of the large sums of money spent in building and equipping many of the excellent institutions for technical and special education, and in spite of the democratic character of all their institutions there are notable gaps in the scheme —in particular, the provision for trade-training for the great mass of the workmen is wofully scant. The ideals of the men who control the public instruction in Italy are probably as high as those of the directors of education in any other country; but the large amount of ignorance among the mass of the people, and the meagreness of what has so far been accomplished in their vocational or professional training is not counterbalanced by the excellence of the work done in many of the primary and secondary schools, and in many universities and other higher institutions. The comparative backwardness of Italy, educationally, may probably be said to be an almost direct result of the burden of taxation imposed upon the country by the military system that it feels itself compelled to maintain. Even that burden, it may be, would be felt less by a nation whose individual members were better trained, and whose aggregate productiveness accordingly was greatly increased. It may be remarked that in Italy the public revenue per head of the population is less than one-third of that of New Zealand.

It does not follow that we have not much to learn from the thoroughness of the average German teacher, or from the excellence of the best schools in Great Britain, or from the high ideals and the intensely practical outlook of the leaders of education in America. But we may have more to learn from one of the smaller countries such as Switzerland, where many of the conditions are so like our own, where the teaching is as thorough, the ideals are as high, and the practical adaptation of education to the needs of life is as great as in any other country, and where, moreover, there is practically a complete national system, consistently and sucessfully carried out.

It is true that in countries like England, Germany, and the United States the conditions are so complex, and in the first two countries, at all events, the vested interests and the mass of prejudices due to causes bound up with their previous history are so vast, that it would be vain to expect a simple logical system to be evolved. The difficulties in the way of progress are, however, being gradually overcome even in the case of England, where they appear in their intensest form.

So far as it is possible to formulate the ideals of the men who are responsible for the direction of educational matters in Germany, it would not perhaps be unfair to sum them up in the phrase "national efficiency," and this description might not be very different from the ideal, if it is a conscious one at all, of the official leaders in the educational world of Great Britain; but the aim of national efficiency, although in a broad view not

inconsistent with the American ideal of "social efficiency," often in practice becomes merged in that of national predominance or imperialism; indeed, in Germany it may be said that in the popular mind the ideal of national efficiency is more or less confused by the fact that so much of the education system is directed towards the army as its immediate goal.

But, even if we succeed in striking roughly an average estimate of the national ideals of education, we may be led astray if we do not allow sufficient weight to the local influences that modify such ideals both in spirit and in practice. Enlightened communities like Birmingham, Manchester, and Glasgow, or even London, in Great Britain; Geneva and Zürich Cantons, in Switzerland; Stuttgart, Munich, Frankfurt, Berlin, &c., in Germany; New York and Chicago, in the United States, may be in their educational policy in advance of the average standard reached by the nation. This is especially the case in countries like those mentioned, where schools are largely supported out of local taxation, and where accordingly the local control is not only substantial, but is more or less closely associated with the municipal authorities—so that the school and the school committee are not things apart, but form an organic feature in the civic life of the community. As teaching should be real, having direct relation to the practical needs of life, so should the control of educational affairs be not merely the function of special officials, but the business of every citizen, and thus, so to speak, in vital contact with the heart of the nation. Whether the theory enunciated be approved or not, it is, in my judgment, almost indisputable that it is in such a country as Switzerland, where the conditions I have described are most fully observed, that we find the most complete national system of education—high in standard, thoroughly efficient, and natural and smooth in operation.

It is for this reason among others that I have selected the Swiss system for a somewhat more detailed description than others which are in many respects no doubt almost equally good, but which did not fall so fully within my personal observation.

Generally speaking, in those districts of Great Britain which have the best organized systems of education the conditions of life are so different from our own that it would be undesirable, if not impossible, to transplant into New Zealand any of the chief features belonging to those systems, unless it be the method of control and administration introduced into England and Wales by the Education Act of 1902, when the special School Boards elected *ad hoc* were replaced by Education Committees of the city or borough councils, or of the county councils. These committees consist half of members of the councils, and half of outside members. They may have control of all local education—primary, secondary, and technical; they have, subject to certain limitations, the power of rating for educational purposes, which is exercised through the councils with which they are associated. The unification of all local education is certainly an end to be desired in New Zealand, and if there were in New Zealand local bodies with such general powers as those possessed by the county councils in England, there would probably be little objection to making the Boards of Education education committees of such local bodies, with limited rating-powers, and control of all education. The plan has worked admirably in England. The London County Council has continued and improved upon the policy of the London School Board, and is now endeavouring to supply the gaps in the secondary education of the Metropolis.

The systems of Wales and of the cities of Birmingham and Glasgow particularly attracted my attention; no money has been spared to make them as good as possible—and the money has practically been voted by the people themselves. Still, even there the ladder of education, from the kindergarten to the university, is by no means so complete as it is in the United States, or Switzerland, or New Zealand. Probably the chief lesson to be learnt from the Mother-country is the great emphasis that is laid in the great public (secondary) schools on the training of character. The undoubted failure of most of these schools to reach the average boy intellectually, of which Mr. A. C. Benson has written so much lately, does not detract materially from the force of the remark, especially as a reform of educational curriculum and methods would assist rather than impede the efforts made to form strong, fearless, capable, and honest men.

The other lessons we have to learn relate mainly to details of the methods used in the best schools, which often reach a standard of excellence and thoroughness not surpassed elsewhere in the world. For this reason, except where they are needed for purposes of comparison, any remarks I have to make on the schools of Great Britain will find their appropriate place in the Appendix to this report.

In order to make clear the comparisons that may be drawn in the following pages between the cost of the several branches of education for various items of expenditure in New Zealand and elsewhere, I append below in Tables I and II an analysis of the expenditure on education in New Zealand, actual and per head of population, for the financial year 1906–7.

TABLE I.—ANALYSIS OF EXPENDITURE ON EDUCATION IN NEW ZEALAND FOR THE YEAR 1906–7.

Figures given in every case to the nearest thousand pounds.)

Branch of Education.	Out of Public Funds.			Out of Income from Reserves.	Total for all Items from all Public Sources.
	Maintenance.	New Buildings and Additions.	Total.		
	£	£	£	£	£
A. I. Primary (including Native Schools and Training Colleges)	668,000	49,000	717,000	48,000	765,000*
II. Secondary (including Secondary Schools and Secondary Departments of District High School)	60,000	8,000	68,000	34,000	102,000
III. Continuation and Technical	33,000	21,000	54,000	..	54,000
IV. Higher (including University and Higher Technical)	20,000	21,000	41,000	23,000	64,000
Totals (A I–IV)	781,000	99,000	880,000	105,000	985,000
B. Industrial Schools ..	..	..	36,000	..	36,000
C. Special Schools (Deaf and Blind)	..	..	5,000	..	5,000
D. Superannuation and Miscellaneous	..	..	5,000	..	5,000
Totals (A, B, C, D)	..	..	926,000	105,000	1,031,000

* Teachers' salaries and allowances, £499,000; repairs and rebuilding, £72,000; new buildings, &c., £49,000; all other expenses, £145,000: total, £765,000.

TABLE II.—EXPENDITURE PER HEAD OF POPULATION ON EDUCATION IN NEW ZEALAND FOR THE YEAR 1906–7.

(Figures given in every case to the nearest penny.)

Branch of Education.	Out of Public Funds.			Out of Income from Reserves.	Total for all Items from all Public Sources.
	Maintenance.	New Buildings and Additions.	Total.		
	s. d.	s. d.	s. d.	s. d.	£ s. d.
A. I. Primary (including Native Schools and Training Colleges)	14 0	1 0	15 0	1 0	0 16 0*
II. Secondary (Secondary Schools and Secondary Departments of District High Schools)	1 3	0 2	1 5	0 9	0 2 2
III. Continuation and Technical	0 9	0 5	1 2	..	0 1 2
IV. Higher (University and Higher Technical)	0 5	0 5	0 10	0 6	0 1 4
Totals (A I–IV)	16 5	2 0	18 5	2 3	1 0 8
B. Industrial Schools ..	..	..	0 9	..	0 0 9
C. Special Schools (Deaf and Blind)	..	..	0 1	..	0 0 1
D. Superannuation and Miscellaneous	..	..	0 1	..	0 0 1
Totals (A, B, C, D)	..	..	19 4	2 3	1 1 7

* Teachers' salaries and allowances, 10s. 5d.; repairs and rebuilding, 1s. 6d.; new buildings, &c., 1s.; all other expenses, 3s. 1d.: total, 16s.

I propose to take Switzerland as a text for what I have to say about the schools of Europe, adding such details from other countries as may confirm and extend the lessons to be learnt by us from the former country.

SWITZERLAND.

Switzerland is educationally a most interesting country. Of all those that came within the range of my inquiries, it has probably the most complete educational system. Moreover, although it is a fully settled country, it in many respects resembles New Zealand closely. The spirit of the people is strongly democratic, the wealth is widely distributed, the extremes of poverty and riches are almost unknown, and there is practically no plutocracy. The industries of the people are both manufacturing and agricultural, although in Switzerland manufactures predominate, while in New Zealand, at present, agriculture is by far our most important industry. An attempt has been made to obtain a complete education system, the aims being: (1) to open a career to all citizens; (2) to fit all citizens for a career —that is, for the work they are to do in the State. In this attempt the little republic has succeeded to a most remarkable extent, and hence can give the lessons of example in practical work to many other States that in common estimation are of greater importance. There is much that we can learn in New Zealand from what Switzerland has done and is doing.

Although the system is not in all its details precisely the same in all the cantons, that is really owing to the fact that even within the narrow limits of Switzerland conditions vary sufficiently to make some modification in the educational arrangements necessary—for instance, institutions that are required in the cantons where the watchmaking industry thrives are not needed in a purely agricultural canton.

In the official reports the system is divided into four parts, namely,—

I. Folk Schools or Volksschulen, including Primary and Secondary (Primarschulen and Sekundarschulen);

II. Continuation Schools and Professional or Vocational Schools (Fortbildungsschulen and Berufsschulen);

III. Middle Schools (Mittelschulen), or Secondary Schools proper as we understand the term;

IV. Higher Schools (Hochschulen), or institutions of University rank.

Each canton has its own Department of Public Instruction, and controls in a general way all the schools within its own area, though in the case of the folk schools (volksschulen) the communes or municipalities, which find more than half the money, exercise most of the real control. In the government of the continuation and vocational schools the communes have also a voice, but the canton has greater powers.

In the middle schools the share of control possessed by the communes is comparatively small, and in the higher institutions their share is limited to representation on the advisory or controlling bodies.

With the exception of the Federal Polytechnikum at Zürich, and a few other Federal institutions, all the institutions of every rank are subjected to cantonal regulations, and the terms of admission, courses of study, examinations, and certificates are prescribed by the cantonal Departments.

In order that the character of the several kinds of institutions and their relations to one another may be more clearly understood, it may be as well to give an outline of them in a single canton—for instance, in the Canton of Geneva. This canton has an area of about 110 square miles, three-quarters of which is productive; and a population of 150,000. Of the latter, 110,000 live in the city and suburbs of Geneva. The canton consists, in fact, of a compact rural area, grouped around the City of Geneva, an area which is, no doubt, comparatively easy to work educationally. It is safe to say that the utmost has been made of its natural advantages. Its principal manufacture is that of clocks, watches, and chronometers, which it exports to the value of £400,000 annually; but the making of automobile cycles, furniture, electrical apparatus, and illustrated books supplements its leading staple. The large amount of available water-power, now converted to a great extent into electrical force, gives it great advantages in manufacture; but, besides being, next to Basle, the richest town in Switzerland, it is preeminently a centre of culture in art, science, and literature. It has a Commission Scolaire, or School Commission, which gives advice on all questions concerning public instruction, and is composed of delegates from the different institutions of public instruction—primary, secondary, and higher—and of a certain number of parents. It is presided over by the Chief of the Department of Public Instruction.

I. Folk Schools.

The Folk Schools of the canton consist of,—

(*a.*) The Infant Schools (Écoles Enfantines or Kleinkinderschulen), for children of three to seven years of age. There are 80 of these schools in the canton (all figures given are for 1905), one in each quarter of Geneva and in every other commune in the canton. These schools are taught by 177 mistresses, and contain 5,430 pupils, or not quite 70 pupils per school, the average number of pupils to each teacher being 31.

(*b.*) Primary Schools, for children from the age of seven to fifteen. Instruction is compulsory for all children in the canton from the age of six to the age of fifteen. As will be seen later on, children may leave the primary schools before reaching the age of fifteen in order to attend certain other schools, but children who have completed the primary course before the age of fifteen must attend continuation or other schools until they reach that age. There are primary schools in all quarters of the City of Geneva, and in all the communes of the canton. There is separate instruction for boys and girls. Instruction in sewing is given by special mistresses. The total number of primary schools is 52, and the total number of pupils 11,299, including 142 in special classes for weak-minded children. There are 130 masters and 247 mistresses, the average daily attendance per teacher being 29. The infant schools are inspected by a lady who is an expert in that kind of work; the primary schools are subject to the inspection of one lady inspector and four male inspectors, besides special inspectors for gymnastics, singing, and sewing, the last being, of course, a lady.

With the primary schools are grouped the Complementary Schools or Classes, which are held in the evening during the winter months at the various schools, and are intended for those who are apprentices or for military recruits who have not satisfied the education test, and for others who desire or are compelled to complete their primary education.

The programme of instruction in the primary schools includes,—

The Mother-tongue (French in Geneva), the time given to it varying from 15 hours a week for boys and 14 for girls in the lowest class to 10 for boys and 9 for girls in the sixth or highest class.

Arithmetic: 5 hours a week (girls 4) first year; 6th year, boys 4 hours (girls 3).

Drawing and Handwork: All years, 3 hours a week (2).

Geometry: 2 hours a week (1) in the last three years.

German: 1 hour a week in the fourth year and 2 hours a week in the fifth and sixth years for both boys and girls.

Geography: 2 hours a week in the last four years for both boys and girls.

History: 2 hours a week (boys and girls) in the last two years.

Music and Gymnastics: Each 2 hours a week throughout the whole course for both boys and girls.

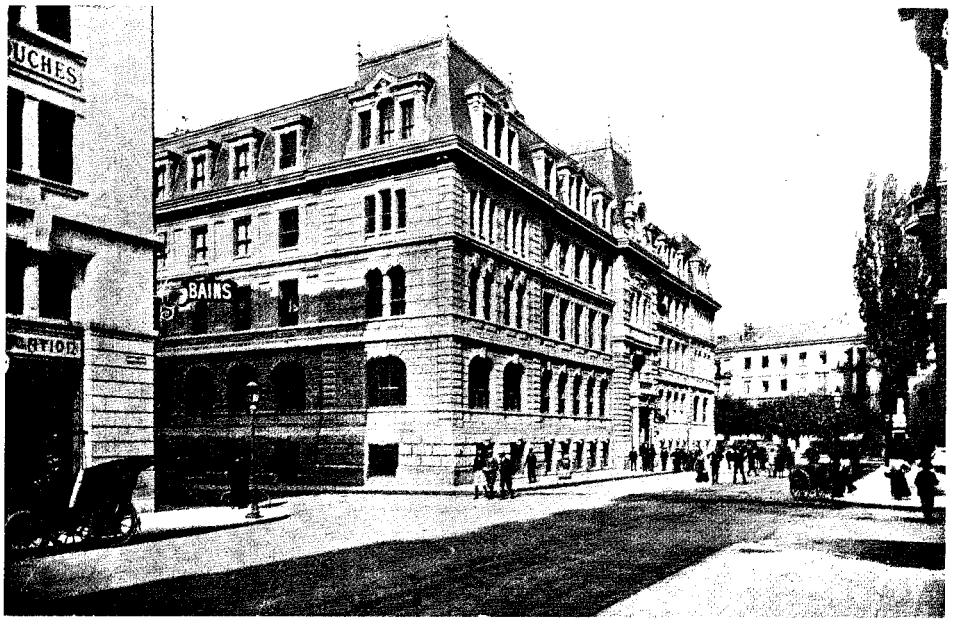
Writing also receives time varying from 3 hours in the first year to 1 hour in the fifth year. It is not taught in the sixth year.

Boys in the sixth year receive civic instruction for 1 hour per week, and girls of all years receive 4 hours' instruction a week in needlework—namely, knitting, sewing, cutting-out, fitting, &c.; in the last year, 5 hours a week. The total number of hours per week spent in school is 30. The detailed programme is given in the appendix. It may be remarked, however, that the instruction in the mother-tongue includes lessons upon things (*leçons de choses*), it being an essential feature of the instruction in language that the oral composition should be closely linked with observation.

In connection with both infant and primary schools there are special funds maintained partly by the teachers, partly by the cantons, and partly by the communes, out of which sick and superannuation allowances are payable.

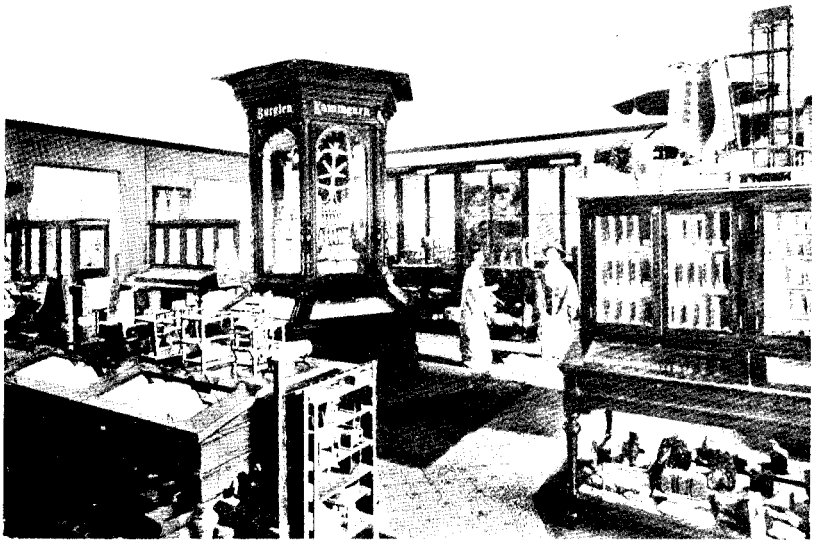
(*c.*) Sekundarschulen, or so-called Secondary Schools, form the third group of the volksschulen, and in the Canton of Geneva these are all rural schools, 11 in number. The total number of pupils is 276, or an average of 25 pupils per school. There are 12 teachers, all masters, but there are special mistresses who act as instructors in sewing. The course is a two-year one for boys and girls of the ages 13 or 14 to 15 or 16. The instruction corresponds in standard approximately to that of the secondary departments in our country district high schools, but is essentially practical and agricultural in character.

The "Professional School" for boys in Geneva takes the place of the rural Secondary Schools in the country districts. Its work follows that of the Sixth Class of the primary schools. The course is one of two years, and prepares pupils for trades, not by specific trade instruction, but by the teaching of science, drawing, and manual work in addition to the mother-



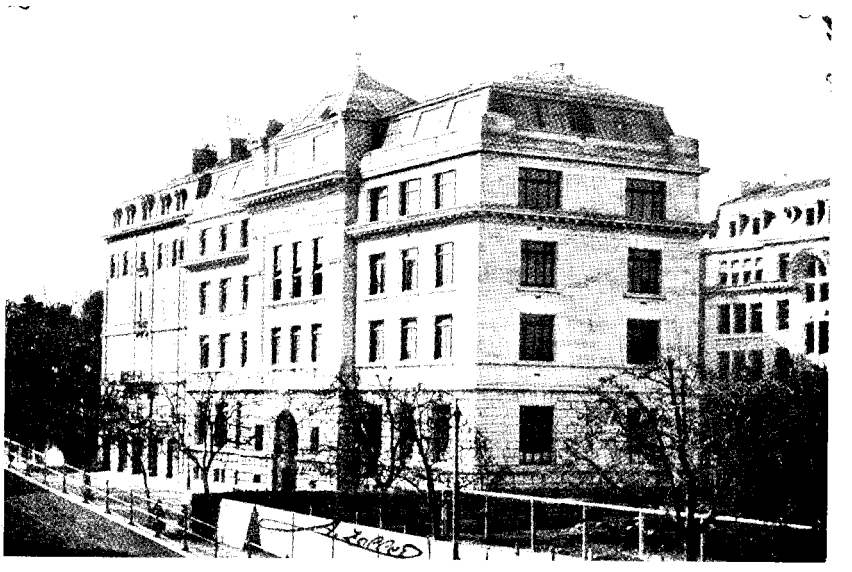
High School of Commerce, Geneva.

A specialized school, open to pupils who have passed through a secondary school, or a preparatory professional school.

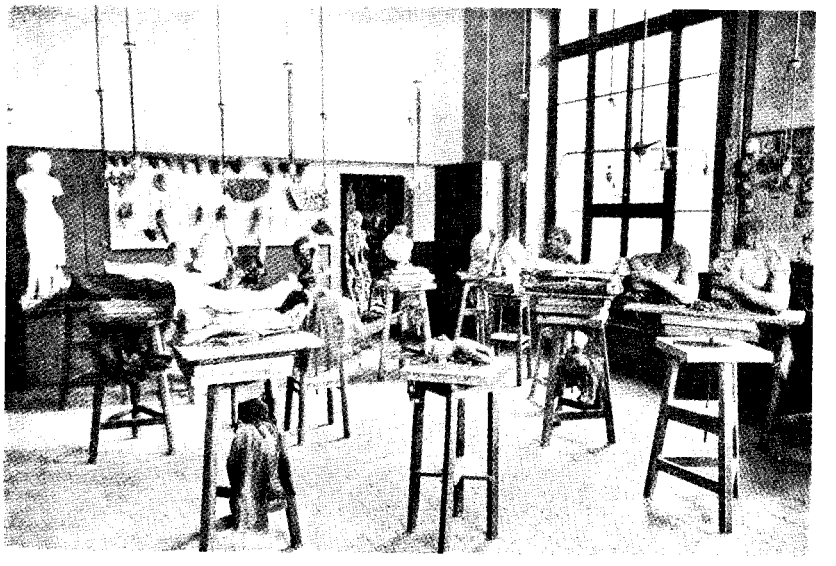


High School of Commerce, Geneva Museum.

The sectional models of factories, warehouses, &c., form a special feature



School of Fine Art, Geneva.
Exterior.



School of Fine Art, Geneva.
Modelling-workshop.

tongue. The school has a staff of 20 teachers, and an average of about 12 pupils per teacher. There is a somewhat similar school, called a "Drawing School," for boys at Carouge, with 47 pupils. There are two girls' household schools which may be classed with these—viz., at Geneva and Carouge, having 45 pupils in all, the instruction being directed towards domestic science.

II. Continuation Schools and Vocational Schools.

These are varied in kind. The simplest form of Continuation School is that already mentioned—the Complementary School. The attendance at schools of this kind is not compulsory except for children under 15 in the Canton of Geneva and in four other cantons, but it is compulsory in the remaining cantons, although one or two of them allow communes the option of exercising compulsion. The continuation schools in Geneva have 743 pupils—namely, 496 boys and 247 girls, besides 245 recruits, for whom attendance is compulsory.

There is also at Geneva a Commercial Continuation School for boys, with 413 pupils and 24 masters, and, in connection with the School of Horticulture mentioned below, there are shorter continuation classes for gardeners' apprentices.

Besides the continuation schools there are in the Canton of Geneva several kinds and grades of vocational schools :—

(i.) The École de Métiers, or Trade School, which "has for its aim the training for the building trade of workmen possessing theoretical and practical knowledge necessary to enable them to exercise their trade under the best possible conditions." It comprises four sections : carpentry and joinery ; brick and stone masonry ; tin-work, plumbing, and other metal-work ; furniture-making. The programme includes 16 hours a week of theoretical instruction, and 32 to 42 hours a week in the workshop. The ordinary duration of the apprenticeship is three years. During the last year pupils can be placed in the workshops or workyards of private employers, but they remain under the supervision of the school, and have to attend the theoretical lessons regularly. The age of admission is fourteen. The school is free for Swiss, 50 francs (£2) a year being charged for foreigners. At the end of the third year a diploma is granted to pupils who pass through the course satisfactorily. This is recognised as carrying a right of admission to the trade.

(ii.) The Mechanical School (École de Mécanique) is also an apprenticeship school ; it is intended for the training of engineer workmen.

There is also an École d'Horlogerie, or Watchmakers' School, but part of its work has been recently diverted to training workers in the making of motor-cycles.

(iii.) The "Technikum" provides a course following on the last two, and is intended for the training of contractors, foremen, inspectors, draughtsmen, clerks of works, &c., connected with the building and engineering trades. In the words of the prospectus, "the instruction in the technikum is to be such that those trained therein may be able to grasp easily the projects of the engineer or the plans of the architect, and to direct their execution with intelligence ; such also that those who feel that they have special aptitudes and the will to go forward may be able by personal efforts to acquire knowledge that will enable them to aspire to positions still higher." There are two sections—namely, the section of building and civil engineering, and the mechanical and electrical section. Each course lasts for three years, and the programme in each case is one of forty-four hours a week, by far the greater part being practical even in the early years, and the last year being almost entirely practical.

(iv.) Rural work is represented by the Cantonal School of Horticulture at Châtelaine, with 47 pupils. This gives a theoretical and practical course of three years in arboriculture, fruit and ornamental ; floriculture ; market-gardening ; landscape gardening ; viticulture ; bee-culture ; and forestry : with such practical drawing, mensuration, chemistry, physics, and meteorology as is necessary.

In other cantons the schools of agriculture occupy a more prominent place than in the Canton of Geneva, and are concerned not only with horticulture and arboriculture, but with agriculture proper, dairy-work, cheese-making, &c.

(v.) Geneva has also a higher Commercial School with 169 pupils. It may be remarked that not included in the above are the Technical and Commercial Departments of the Collège and of the Girls' Secondary and Higher School (École Secondaire et Supérieure des Jeunes Filles).

(vi.) École des Arts Industriels, or School of Arts and Crafts, which is free and under the direction of the Council of State, the latter delegating

one of its members to preside over the Committee of Control. The school is open from the second or third week in August until the end of June. Pupils are admitted at fourteen or a later age. Courses last for four or five years, and train the pupils for the following industries :—

(1.) Decorative sculpture in building;
(2.) Moulding and retouching of plaster-work;
(3.) Sculpture in stone and marble;
(4.) Wood-carving;
(5.) Artistic working in gold and silver;
(6.) Artistic working in bronze;
(7.) Artistic forge-work in iron;
(8.) Decorative painting, and painting on china and pottery;
(9.) Painting on enamel.

Pupils who have completed a course are entitled to the diploma of the school—Diplôme de l'École des Arts Industriels (first-class)—or to a Certificat de Capacité (second-class).

(vii.) École des Beaux Arts, or School of Fine Art.

(viii.) The Normal Schools, or Training Colleges for Teachers, may be counted either with the vocational schools or with the secondary or higher institutions. This work is performed for men in Geneva by the Pedagogic Section of the Collège or Gymnasium, and for girls by a corresponding section of the École Supérieure. The diplomas of these departments give the right to teach in the primary schools. But there is an increasing tendency throughout Switzerland, and especially in Geneva and some other cantons, to give all teachers the benefit of University training.

III. Middle Schools (Mittelschulen).

There are two schools in Geneva that come under the heading of "Middle Schools"—one for boys, the Collège de Genève with 547 pupils, and one for girls, the École Supérieure with 938 pupils. Each of these schools has a seven-year course, and is intended for pupils from twelve to nineteen years of age. The fees are very low, being 40 francs (32s.) a year for the lower division, or first three years, and 50 to 60 francs (40s. to 48s.) for the upper division, or last four years, and there are many bursaries or free places, the tendency being to increase the number of bursaries and make the secondary education, like the primary, free. Even for foreigners the fees are very low.

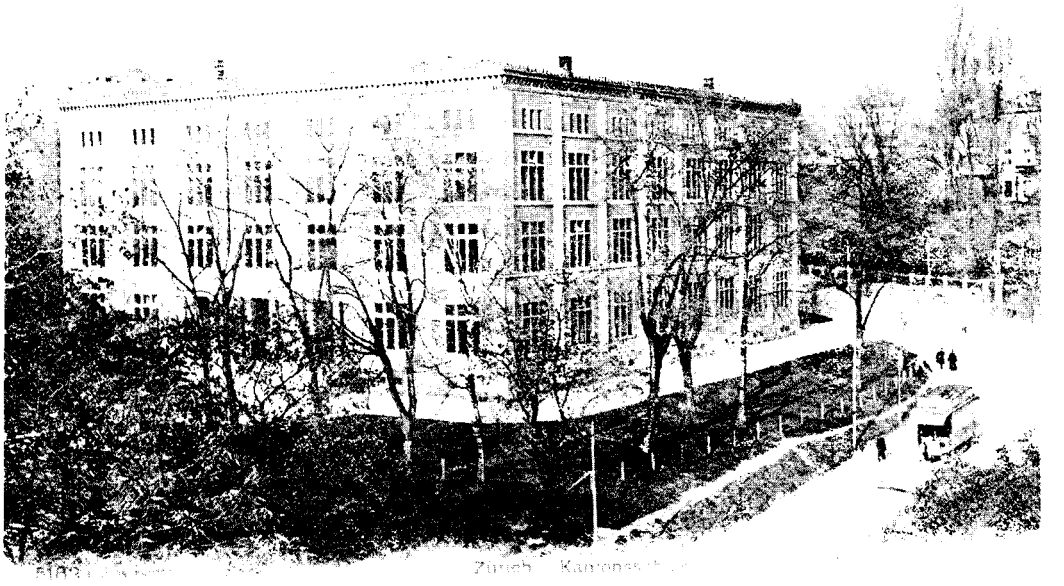
The Collège has great historic interest, having been founded by Calvin in 1558, five years after the Academy, out of which was developed the present University of Geneva. It has a lower division, of three years or classes, which are again subdivided according to the attainments of the pupils. The subjects of instruction are: French, 6 hours a week; Latin, 6; German, 4; History, 2; Geography, 2; Mathematics, 4; Natural History, 2; Drawing, 2; Music, 1; Gymnastics, 2. In the third year Natural History is replaced by Elementary Physics and Chemistry. The total number of hours per week in the lower school is therefore 31. The upper school is divided into four sections :—

(1.) The Classical Section, in which Latin and Greek are compulsory—12 to 14 hours a week; likewise, French (the mother-tongue), German, History, Geography (replaced in the last two years by "Cosmography"), Mathematics, Drawing, Gymnastics, "Diction" (Public Speaking), Natural and Physical Science, and, in the last two years, Philosophy—*i.e.*, Elementary Logic and Psychology; while English, Italian, Commercial Arithmetic and Book-keeping, and Law are optional. Compulsory subjects alone occupy 33 hours a week.

(2.) The Real Section, in which Greek disappears, the time devoted to Latin is reduced, that given to French and German is increased, English becomes compulsory, Italian remains optional, the amount of Geography is increased, the amount of History is reduced, and the amount of Science is doubled. Laboratory work in Chemistry and Physics, which is optional in the Classical Section, is compulsory in the last year of the Real Section.

(3.) The Technical Section, in which neither Latin nor Greek is taken. The time devoted to German and English is the same as in the Real Section, that devoted to French one hour a week less. The amount of Mathematics and Science is still further increased, and the amount of Drawing is more than doubled, while Descriptive Geometry is added.

(4.) The Pedagogic Section. Here Latin and Greek are not required, and English and Italian are optional. The amount of time devoted to French and German (the mother-tongues of Switzerland) is much larger than in any of the other sections. The amount required in the other subjects is about the same as that required in the Real Section, but with more laboratory work in Science. Hygiene, Commercial Arithmetic and Book-



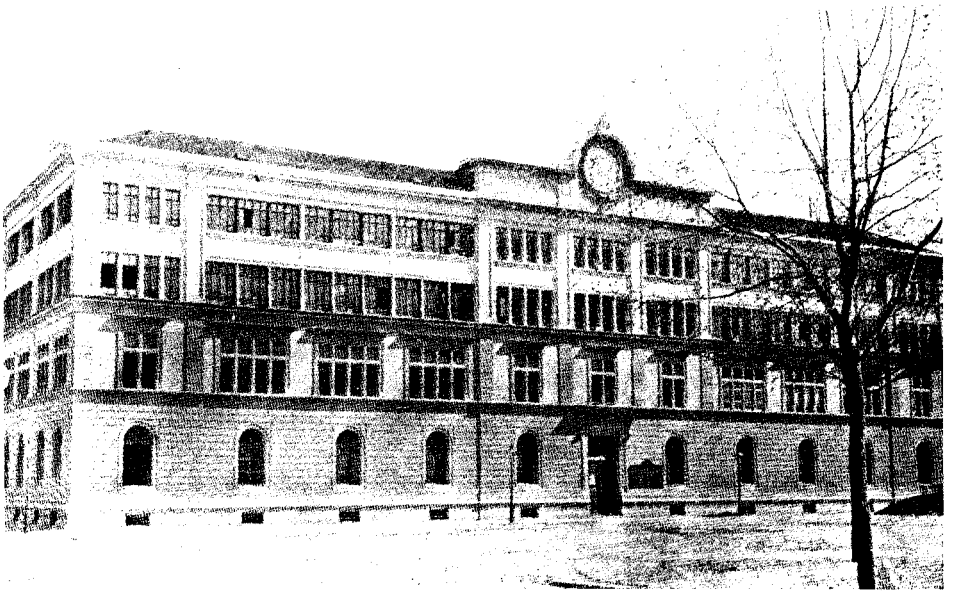
KANTONSSCHULE, ZURICH.

Contains the Gymnasium, or classical high school, and the Realschule, or modern high school.

HIRSCHENGRABEN SCHOOL, ZURICH.

An elementary school (for girls); cost, about £52,000.

University of Geneva.
Part of buildings.



Trade School, Geneva.
Clockmaking and watchmaking

keeping, and Pedagogy—viz., Psychology and the History and Methods of Education—are added subjects. In the last year one hour a week is spent in teaching-practice in the associated Primary Schools.

All modern languages are taught on the direct method. Geometry is taught by the method of experiment and observation. Great attention is given to General History (as well as to National History) and to Economic Geography.

The reading in Latin is wide, and great attention is given to Roman Institutions and Literature. Similar work is being done in the Greek classes.

Mathematics includes not only arithmetic, plane geometry, algebra to binomial theorem (positive integral exponent), and trigonometry to the solution of triangles, but also solid geometry, elementary plane analytical geometry, and conic sections. Graphics are largely employed.

Physics includes general notions and principles of the several parts of the subject and practical developments of electricity. Most of the experiments are, however, only demonstrated. Individual laboratory-work in physics and chemistry is done only in the last year of the Real, Technical, and Pedagogic Sections.

Natural Science is taught by means of lectures and good demonstrations. The only laboratory-work done in the subject is done in the Pedagogic Section (two hours a week during the second term of the highest class, Class IV).

"Cosmography" (taken in the last two years of all divisions) is the name given to the portion of physiography dealing with the earth and its movements, treated more fully than in the course of elementary mathematical geography, universal direction, fixed stars, sun, moon, planets, comets, meteors, nebulas.

Philosophy includes elementary psychology; formal and applied logic; method of the exact sciences; method of physical and natural sciences; method of moral science; errors and fallacies; logical exercises; reading and explanation of Descartes (Discours sur la Méthode), Malebranche (De la Recherche de la Vérité, Book II), D'Alembert (Discours Préliminaire de l'Encyclopédie).

Law includes elementary notions of the law relating to individuals and the family, the Federal "Code of Duties."

"Diction," the theory and practice of speaking and writing, with impromptu exercises, is a feature of the work in all the senior classes. It occupies one hour a week, and may be considered as the finishing touch to the work in oral composition that is looked upon as so important a part of the teaching of the mother-tongue.

Entrance to the University is given from the Classical or Real Sections of the school, and to the Federal Polytechnikum at Zürich from the Technical Section.

The Girls' High School has two divisions, like the Collège. The upper division has only three sections—viz., the Literary Section, the Pedagogic Section, and the Commercial Section. In this school Latin and Greek are not compulsory subjects. A large part of the time thus gained is devoted to more modern subjects, even girls in the Literary Section being required to learn Book-keeping, Law, Needlework, Hygiene, Domestic Economy, &c. Stenography, Latin, Italian, the General History of Civilisation, and the History of Art are optional subjects in the Literary and Pedagogic Sections; but in the Commercial Section Stenography and Typewriting are compulsory, while Commercial Arithmetic, Book-keeping, and Business Methods occupy seven hours a week in each of the three years.

Girls who wish to enter the University must take special courses in separate classes from special instructors.

IV.—The University of Geneva.

This sketch of education in the Canton of Geneva would not be complete without some notice of the University. The Academy founded by Calvin in 1553 was transformed into a University in 1872, and was completed by the formation of the Faculty of Medicine in 1876.

The buildings, lecture-rooms, laboratories, and general equipments are of the first order. There are 141 professors and privat-docents. Women are admitted in all faculties on the same conditions as the men. There are a large number of scholarships, bursaries, and prizes. The funds are administered by a Committee of five professors with the Rector of the University as president. There are courses for teaching French to foreigners.

The ordinary fees are—For Matriculation, 20 francs; for courses, 5 francs per semester for each hour per week of instruction. The University has the following divisions:—

(1.) Faculty of Science.
(2.) Faculty of Letters and Social Science, including ancient and modern languages, literature, and philology; pedagogy; economics; history; geography; comparative civil law.
(3.) Faculty of Law.
(4.) Faculty of Protestant Theology.
(5.) Faculty of Medicine.

Besides extensive laboratories, there are also attached to the University a surgical and medical hospital, a dental school and hospital, an observatory, and various museums.

The arrangements of the University and other State and City museums, which are also open to the public, are such as to render them of the greatest benefit to students, who have free access at all reasonable hours; moreover, in many cases there are skilled experts to give them information and guidance. Among these museums can be named the Museum of Natural History; the Musée Rath, with a fine educational collection of pictures and sculptures; the Museums of Decorative Arts, of Archæology, of Ethnography, of Clocks and Watches, of Arms, of Numismatology, of Photographs of Swiss National Documents (for the study of history). There are several other institutions whose aims are chiefly educational, *e.g.*, the Zoological Gardens, with an old museum giving a general idea of the progress of civilisation; a laboratory of bacteriology and serotherapy; a public library with a fine collection of maps (among others there are here all the maps made by the celebrated geographer M. Élysée Reclus while he was writing at Geneva his Universal Geography).

All study at the University is specialised. It is recognised that the University does not exist for general education, the essentials of which have been satisfied before entrance, evidence thereof being given by a leaving certificate of the College or an equivalent. (This certificate secures a completer training in languages and mathematics than is secured in the pass degree course of the University of New Zealand.) There are two terms or semesters—from the 15th October to the 22nd March, and from the beginning of April to the beginning of July. The number of students in 1905 was 1,417, many of whom were foreigners. The contribution of the Canton of Geneva towards the expenses of the University was as follows :—

	£
For salaries of professors	14,912
For salaries of professors' assistants	1,935
For maintenance of laboratories	1,972
For other expenses	2,560
Total	£21,379

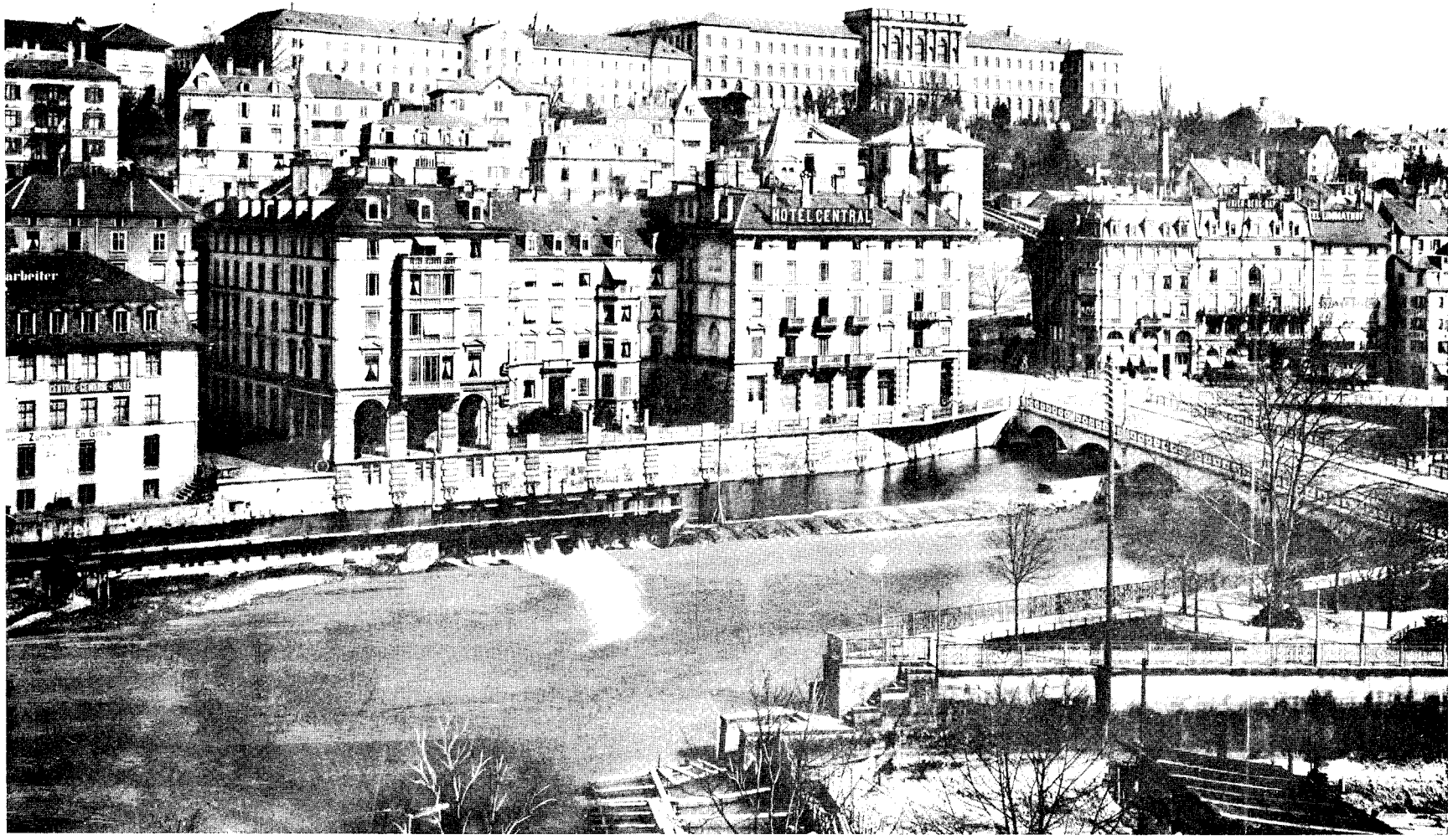
Other sources of income were fees and endowments.

The Federal Polytechnikum at Zürich.

This is a technical university of worldwide fame, maintained by the Confederation of Switzerland, in the same rank as the Technical High School at Charlottenburg, near Berlin, and the Massachusetts School of Technology at Boston, and in some respects probably superior to either of these institutions. Among British institutions which aspire, with good hope of success, to a similar position may be mentioned the Manchester School of Technology, and the Technological Departments of the University of Birmingham (I have named only institutions the working of which I was able to observe).

The Polytechnikum is well staffed: in 1905 it had 65 professors, 5 assistant professors, 39 lecturers, 70 laboratory demonstrators and assistant lecturers, and 40 other assistant teachers not on the regular staff. It is thoroughly well equipped with laboratories and workshops of every kind, including laboratories for the following branches (in many cases, several laboratories for each branch) :—

General Physics,
Research Physics,
Industrial Chemistry,
Thermo-chemistry,
Pharmaceutical Chemistry,
Photography,
Hygiene,
Machinery (laboratories and workshops),
Botany,
Pharmacy,
Astronomical Observatory,
Electrotechnics,
Analytical Chemistry,
Electro-chemistry,
Physico-chemistry,
Agricultural Chemistry,
Bacteriology.
Agriculture.
Industrial Mechanics (laboratories and workshops),
Zoology,
Analysis of Foods and Drinks.



Federal Polytechnikum (or Technical University), Zurich, Switzerland.
The buildings on the hill, at the back of the picture, form one side of the Polytechnikum.

There are also two associated Federal stations—one for the testing of building-materials, and the other for experiments in forestry; at the first there were carried out in 1904 no fewer than 42,324 tests, three-fourths of which were for immediate practical purposes, and the remainder for research or instruction. Further, connected with the school there are—workshops for modelling in plaster and clay, and for working in metals; experimental farms; a splendid library containing upwards of sixty thousand technical works in all languages; collections of drawings (portraits and landscapes), of engravings, of architectural plans, of building-models, and of tools, also collections to illustrate mechanical technology, geodesy, technological chemistry, pharmaceutical chemistry, astronomy, mineralogy, botany, zoology, entomology, forestry, agriculture; a special station for testing explosives; a botanical garden; a museum of plaster models illustrating the history and principles of sculpture; an archeological museum; and four other museums containing respectively engineering models, models of machinery and mechanism, geometrical and other mathematical models, and physical instruments. In short, whatever branch of engineering or applied science a student wishes to follow, he has access to everything in the way of laboratories, workshops, or museums that he can desire for his course of study.

Admission as a regular student may be obtained on presentation of a leaving certificate from a Swiss higher secondary school (Mittelschule) or from a foreign school of equal standing, or of a certificate of the completion of a University course. About three-fourths of the students are admitted in this way without examination; the remainder enter by passing an examination: 74 per cent. of those who take the examination are foreigners. The numbers of students in the six regular sections in 1905 are shown below, those of native and foreign birth being given separately:—

	Swiss.	Foreign.	Total.
I. School of Architecture	55	12	67
II. School of Civil Engineering	225	61	286
III. School of Mechanical Engineering	261	287	548
IV. School of Applied Chemistry—			
(*a.*) Technical Section	123	107	230
(*b.*) Pharmaceutical Section	5	3	8
V. (*a.*) School of Forestry	30	..	30
V. (*b.*) School of Agriculture	40	11	51
V. (*c.*) School of Agricultural Engineering	18	7	25
VI. Normal School—			
(*a.*) Mathematics, Section of	18	3	21
(*b.*) Natural Sciences, Section of	23	4	27
	798	495	1,293

Besides the regular students there were in the same year 735 external students (*auditeurs*) who for the most part took one or other of the general courses (mathematics, physics, natural science, technology, philosophy, social sciences) belonging to Section VII; the total number of students in 1905 was therefore 2,028. Section VIII consists of courses in Military Science, which are open to students attending any other section.

The institution is especially good in Engineering and Technical Chemistry; the work in the latter and in Hydraulical Engineering (with special reference to the production of electrical power) appeared to me better than anything of the kind I saw elsewhere. The fees are low and living is cheap; so that a New Zealand student who wished to do advanced work in engineering or chemistry might do worse than take a course at Zürich. Many of the lectures are given both in French and German, and a student can attend which course he pleases. He would meet with many English-speaking students and professors, and would not feel himself to be so much an exile as he would at Charlottenburg. In this last respect, no doubt, an English higher technological college, or the Massachusetts School of Technology would be better still, but the fees and cost of living would amount to more than if he were at the Zürich Polytechnikum.

The programme of work in the several sections will be given in the Appendix.

General Remarks.

As far as my observation went, methods in Switzerland seemed to be of the best. In all the schools, elementary, secondary, and professional schools (that is, schools with short courses leading up to technical or trade instruction), great stress is laid on the mother-tongue. Pupils are taught to express themselves clearly in continuous speech on subjects which have fallen under their observation, things which are connected with daily life or nature-study. These subjects are prevented from becoming hackneyed,

as the ordinary experience of the children is widened by school visits to factories and workshops, by school walks into the country, and by the use of objects in the school museums, which are generally very good. The lessons are such as to call forth from the pupils carefully reasoned-out conclusions suited to their ages, and these are expressed clearly in natural language.

The training in the schools is such as to make thoroughly intelligent workmen and citizens; culture is not sacrificed, the training of artistic taste being a special feature in the Swiss schools; a high and not a narrow patriotism is fostered; there is careful attention to hygienic conditions in the schools as concerns both buildings and children; boys and girls receive training in the laws of health, and almost everywhere an opportunity is given for girls to learn all that relates to their health and the management of homes. Arithmetic and geometry, which are apt to be treated too abstractly in British schools, are treated in a concrete manner. Handwork receives full treatment in all the primary schools, and in secondary schools of the modern type.

Every calling in life followed by the people, whether it be that of a market-gardener, or a watchmaker, or postman, clerk, merchant, telegraph operator, engineer, surgeon, or civil administrator, has some school or institution in which the future citizen can receive full training, and, up to a certain point, at all events, he is compelled in most cantons to undergo such training. The Swiss people as a whole are evidently earnest in their belief that education is a most important factor in the national life. The standard of regularity of attendance in all their schools is very high indeed. For the year 1905 the ratio of the average attendance in the primarschulen (primary schools) to the number on the roll is represented by 97·2 per cent., and more than nine-tenths of the absences are "with excuse"—that is, are due to sickness or other unavoidable causes.

The communes readily tax themselves for buildings and for the maintenance of their schools. The school-site is generally one of the best sites in the district, and, although the buildings are not, as a rule, pretentious, and are not so elaborate, say, as school buildings often are in America, they are always a credit to the community, and no pains are spared to bring them in all respects, from the point of view of education and hygiene, up to date. The great majority of communes, too, have readily voted for compulsory attendance at continuation or vocational schools and classes, and in many cases have provided expensive buildings for carrying on special technical or trade classes. In addition, the cantons generally give assistance towards the building of technical schools. In conversation, one soon discovers how proud the ordinary Swiss citizen is not only of the common schools, but of the higher institutions in his own and other cantons.

The total number of people under instruction in Switzerland is 743,745 out of a population of 3,463,609. The figures given are for the year 1905. In other words, 21·5 per cent. of the Swiss people are at school. In New Zealand the proportion is 19·4 per cent., or 185,468 out of a population of 956,457 (1906). These figures are striking enough in themselves, but the contrast is still more marked when we inquire into the cause of the difference. In New Zealand the number receiving instruction in public schools or colleges above primary grade is 26,289, or 2·74 per cent. of the population; in Switzerland, on the other hand, the number of such persons is 199,533, or 5·76 per cent. of the population—that is, more than twice as great a proportion as in our own country. Evidently New Zealand has a long way to go before her people reach as high a general standard of education as Switzerland.*

In the totals, account has been taken in New Zealand of the number returned by the Registrar-General as attending private schools and (under Secondary Education) of those attending Maori secondary schools as Government scholars, and in Switzerland of those attending a small group of private schools partly recognised by Government; but in the case of Switzerland none of the numerous boarding-schools, used indeed to a large extent by foreigners, have been included in either the larger or smaller total. Further, the roll-numbers have been quoted, and not the average attendance. If the latter had been used, as the attendance is so good in Switzerland, the advantage in favour of that country would have appeared even higher than it is in the figures given above.

Details are given in Tables A1 and A2.

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*I am not unaware that the conditions differ somewhat in Switzerland and New Zealand, and some allowance must be made for the fact that a large proportion of our pioneer population is on the outskirts of civilisation.

TABLE A1.—NUMBER OF PERSONS UNDER INSTRUCTION IN SWITZERLAND DURING 1905: POPULATION, 3,463,609.

		Actual Number.	Number per 10,000 of Population.
I. Primary Schools		544,212	1,571·2
II. Secondary Schools,—			
(a.) "Sekundarschulen"	46,904		
(b.) "Mittelschulen"	23,466		
		70,370	203·1
III. Continuation and Technical Schools,—			
(a.) General Continuation Schools	47,076		
(b.) Vocational Continuation Schools	40,963		
(c.) Lower Technical Schools	14,474		
(d.) "Techniken"	3,026		
		105,539	304·8
IV. "Hochschulen" (Universities, Polytechnikum, &c.)		9,880	28·5
Total in public institutions		730,001	2,107·6
V. Private Schools, Secondary (included in Government returns) ..		13,744	39·7
Total		743,745	2,147·3
Number of persons receiving instruction other than primary (all above except I)		199,533	576·0

TABLE A2.—NUMBER OF PERSONS UNDER INSTRUCTION IN NEW ZEALAND DURING 1906: POPULATION, 956,457.

		Actual Number.	Number per 10,000 of Population.
I. Primary Schools (including Native and Special Schools, excluding secondary departments of District High Schools) ..		142,657	1,491·5
II. Secondary Schools,—			
(a.) Secondary departments, District High Schools	2,594		
(b.) Secondary Schools proper	4,359		
		6,953	72·7
III. Continuation and Technical Schools and Classes (average attendance)		17,992	188·1
IV. University Colleges (including Higher Technical)		1,344	14·0
Total in public institutions		168,946	1,766·3
V. Private Schools (not included above, principally primary) ..		16,522	172·8
Total		185,468	1,939·1
Number of persons under public instruction other than primary..		26,289	275·0

A large number of the 17,992 pupils in continuation or technical classes in New Zealand are attending classes in one subject only, whereas nearly all the corresponding 105,539 persons in Switzerland are taking courses of subjects.

FINANCE.

It is by no means easy to make a proper and accurate comparison of the cost of education per head of the population in the various countries of the world, for the items included under the several heads are not always the same, and often to some special item of expenditure in one country there is nothing exactly corresponding in another. Sometimes inquiry upon the spot is a considerable aid in unravelling the problem, and I think it will be found that the figures given below are approximately correct.

Tables B1 and B2 show the amount spent by the State and public authorities in Switzerland and out of public moneys in New Zealand on four branches of education, namely,—

(1.) Primary Schools, including in New Zealand the Maori Village Schools, and in both cases (New Zealand and Switzerland) including the Normal Institutions or Teachers' Training Colleges.

(2.) Secondary Schools, including, in New Zealand, District High Schools and Secondary Schools proper; in Switzerland, the Sekundarschulen and Mittelschulen.

(3.) Continuation and Technical Schools, including General and Vocational Continuation Schools, also Technical Schools, higher Technical Schools, and Trade Schools.

(4.) Higher institutions, including Universities and other institutions of University rank (such as the Federal Polytechnikum at Zürich, and the Canterbury School of Engineering and the Otago School of Mines).

The expenditure is shown separately for buildings and for all other purposes except buildings, under the head of Buildings being included expenditure for repairs as well as that for new buildings, as these items are

not clearly separated in the accounts of some of the cantons. Income from endowments and reserves is omitted, the figures representing merely the expenditure out of public revenue, as I have no means of knowing what this is in the case of Switzerland—in several of the universities and secondary schools it is, I believe, by no means inconsiderable.

TABLE B1.—SWITZERLAND (1905).—EXPENDITURE OUT OF PUBLIC SOURCES PER HEAD OF POPULATION (exclusive of Expenditure met by Income from Endowments, and exclusive of Expenditure on Reformatory Schools and Schools for Neglected Children): Population, 3,463,609.

Kind of Education.	Actual Expenditure.			Expenditure per Head of Population.		
	Buildings (including Repairs).	All other Expenses.	Total.	Buildings.	All other Expenses.	Total.
	£	£	£	£ s. d.	£ s. d.	£ s. d.
I. Primary ..	64,000	1,570,000	1,634,000	0 0 4	0 9 1	0 9 5
II. Secondary ..	27,000	383,000	410,000	0 0 2	0 2 3	0 2 5
III. Continuation and Technical	20,000	344,000	364,000	0 0 1	0 2 0	0 2 1
IV. Higher ..	29,000	210,000	239,000	0 0 2	0 1 3	0 1 5
Totals ..	140,000	2,507,000	2,647,000	0 0 9	0 14 7	0 15 4

NOTE.—The figures in the first three columns are given to the nearest thousand pounds. The expenditure on Normal Schools and Teachers' Training Colleges is included under I. Technical Education of University grade is included under IV, Higher Education. The cost of Federal administration is not included.

TABLE B2.—NEW ZEALAND (1906).—EXPENDITURE OUT OF PUBLIC FUNDS PER HEAD OF POPULATION (exclusive of Expenditure met by Income from Endowments, and excluding Expenditure on Industrial Schools and Reformatories): Population, 956,457.

Kind of Education.	Actual Expenditure.			Expenditure per Head of Population.		
	Buildings (including Repairs).	All other Expenses.	Total.	Buildings.	All other Expenses.	Total.
	£	£	£	£ s. d.	£ s. d.	£ s. d.
I. Primary ..	121,000	596,000	717,000	0 2 6	0 12 6	0 15 0
II. Secondary ..	8,000	60,000	68,000	0 0 2	0 1 3	0 1 5
III. Continuation and Technical	21,000	33,000	54,000	0 0 5	0 0 9	0 1 2
IV. Higher	21,000	20,000	41,000	0 0 5	0 0 5	0 0 10
Totals	171,000	709,000	880,000	0 3 6	0 14 11	0 18 5

NOTE.—The figures in the first three columns are given to the nearest thousand pounds. The expenditure on Teachers' Training Colleges is included under I. Technical Education of University grade is included under IV, as Higher Education. The cost of administration, local and departmental, is included. Maori schools are included.

It will be seen at once that the total annual expenditure out of public moneys per head of the population for education, exclusive of the expenditure on buildings, is nearly the same in Switzerland and New Zealand—14s. 7d. and 14s. 11d. respectively; but the proportions spent in the several branches of education are very different in the two countries. Switzerland spends 9s. 1d. per head for the maintenance of primary instruction, and New Zealand gives 12s. 6d. for the same purpose. It is easy to point out the chief causes of this difference: The average salary of an adult public-school teacher in New Zealand was, in the year 1906, £139 2s. 2d. (including teachers in schools of Grade 0); the average salary of teachers (all adults) in Switzerland was, in 1905, £44 16s.: the average number of pupils in a primary school in Switzerland is 115, and in New Zealand 76 (roll) or 66 (average attendance), and the number of small schools is very large, 1,171 out of 1,847 schools being schools with one teacher, having not more than forty pupils in average attendance. The cost of these schools for salaries, allowances, and incidentals alone is at the rate of £6 5s. 11d. per pupil, which would correspond to an expenditure for all purposes except buildings (if all schools were equally costly) of about 15s. 6d. per head of the population as against 12s. 6d., the actual cost per head of the population in New Zealand. Again, in New Zealand in 1906 there was expended on the conveyance of children the sum of £11,954, which has nothing to correspond to it in the case of Switzerland. The last two items—namely, the cost of small schools and the money spent for the conveyance of school-children—are obviously due to the sparseness of the population in the Dominion; they are inevitable factors in the progress of settlement, and should be looked upon quite as much as part of the cost of settlement of the colony as roads and bridges, rather than as proper charges against education. The

comparatively large amount spent on primary-school buildings, £121,000, is due to two causes—first, most of the schools are of wood, and cost nearly twice as much for maintenance as if they were of brick or stone; secondly, the amount, £49,000 (including Native schools), spent on new buildings and additions is, again, an element in the progress of settlement of the country. Taking all these facts into consideration the wonder is, not that our expenditure per head for primary education is so high compared with that in Switzerland, but that it is not much higher. The total public expenditure on primary education, per head of population, in the several parts of the United Kingdom is as follows: England and Wales, 12s. 3d., average number in a school, 294; London, 17s., average number in a school, 803; Wales alone, 15s. 5d., average number in a school, 239; Scotland, 12s. 4d.; Ireland, 6s. 7d.

Table C shows the proportion per cent. of the total expenditure on each of the four branches of education in Switzerland and New Zealand respectively.

TABLE C.—PROPORTIONS PER CENT. OF PUBLIC MONEY SPENT ON THE SEVERAL BRANCHES OF EDUCATION IN SWITZERLAND AND NEW ZEALAND RESPECTIVELY (CALCULATED FROM TABLES B1 AND B2).

	Switzerland.	New Zealand.
I. Primary	61·7	81·5
II. Secondary	15·5	7·7
III. Continuation and Technical	13·8	6·1
IV. Higher	9·0	4·7

The former country spends upon each of the branches other than primary about twice as large a proportion as is spent in New Zealand. If we wish to bring our standard up to that of the Swiss republic, we must, in short, be prepared to spend far larger sums on secondary, technical, and higher education than we are spending now, and at the same time not curtail, but rather increase, our expenditure upon primary education. As special reference has already been made to education in the Canton of Geneva, it may be of interest to note that the total expenditure out of public funds on education was, in 1906, £197,000, or £1 6s. 3d. per head of the population —namely, for buildings £52,000, or 6s. 11d. per head; and for all other purposes £145,000, or 19s. 4d. per head. Only £10,000 out of the total consisted of grants from the Federal Government, the remainder being provided by the canton and the communes (£131,000 and £56,000 respectively). (The largeness of the amount spent on buildings was occasioned by the erection of several new university buildings and of one or two large primary schools in Geneva.)

TABLE D1.—EXPENDITURE OUT OF PUBLIC FUNDS PER HEAD OF AVERAGE ROLL FOR THE VARIOUS BRANCHES OF EDUCATION.

Switzerland (1905).

—	Cost per Pupil.		
	Buildings.	Other Expenses.	Total.
	£ s. d.	£ s. d.	£ s. d.
I. Primary	0 2 4	2 17 9	3 0 1
II. Secondary	0 7 8	5 8 10	5 16 6
III. Technical, &c.	0 3 10	3 5 2	3 9 0
IV. Higher	2 18 8	21 5 2	24 3 10
All branches except primary ..	0 8 1	5 0 11	5 9 0
All branches	0 3 10	3 8 8	3 12 6

TABLE D2.

New Zealand (1906).

—	Cost per Pupil.		
	Buildings.	Other Expenses,	Total.
	£ s. d.	£ s. d.	£ s. d.
I. Primary	0 17 1	4 2 10	4 19 11
II. Secondary	1 0 2	7 12 5	8 12 7
III. Technical, &c.	1 3 4	1 16 8	3 0 0
IV. Higher	15 12 6	14 2 9	29 15 3
All branches except primary ..	1 17 3	4 0 0	5 17 3
All branches	1 0 3	4 2 5	5 2 8

NOTE.—Expenditure on buildings in Tables D1 and D2 includes the cost of repairs and rebuilding as well as the cost of new buildings and additions, so far as any of these are provided out of public funds.

Tables D1 and D2 show the cost per pupil in each branch of education in Switzerland and New Zealand; they display in another way the facts already dwelt on above, but they also bring out the important fact that in Switzerland the cost per pupil in the continuation and technical schools and in the universities and other higher institutions is greater than in New Zealand—that is, notwithstanding lower salaries and lower cost of living, the Swiss nation spends annually on each technical student £3 5s. 2d. as against our £1 16s. 8d.; and on each university students £21 5s. 2d. as against our paltry £14 2s. 9d.; or, again, it spends £5 0s. 11d. on each of the students in the branches other than primary, as against our £4. Not only has our European model twice as many persons in proportion undergoing some form or other of higher instruction as we have, but it is willing to pay more per head for it.

The total net revenue of the Bund (or Federal Government) and the cantons was about 246 million francs; out of this they spent 35,000,000 francs, or 14·2 per cent., on education; the Bund's share was 5,600,000 francs, and the contribution of the Cantonal Governments was 29,400,000 francs, which formed 22 per cent. or two-ninths of their total disbursements. (The Canton of Geneva spent more than one-third of its income on education.) In addition, the communes or municipalities of Switzerland contributed 32,300,000 francs.

Tables E1 and E2 show the amounts contributed towards the cost of education by the Federal Government (or Bund), the cantons, and the communes respectively, and the percentage proportions.

TABLE E1.—AMOUNTS SPENT BY THE BUND, THE CANTONS, AND THE COMMUNES RESPECTIVELY ON THE SEVERAL BRANCHES OF EDUCATION. (The contributions of the Cantons for teachers' pensions, not included in previous tables, are included here. The share of the Communes also includes the following items, which were included in previous tables: Teachers' sick-allowances, £14,000; Bursaries in Secondary Schools, £4,000; allowances to students in Training Colleges, £48,000.)

——	Bund.	Cantons.	Communes.	Total.
	£	£	£	£
I. Primary	84,000	585,000	1,001,000	1,670,000
II. Secondary—				
(*a.*) Sekundarschulen ..	Nil	115,000	134,000	249,000
(*b.*) Mittelschulen	Nil	141,000	26,000	167,000
III. Continuation and Technical ..	84,000*	174,000	109,000	367,000
IV. Higher	56,000†	159,000	24,000‡	239,000
Total	224,000	1,174,000	1,294,000	2,692,000

* None for Continuation Schools, all for Technical Schools. † For the Polytechikum in Zürich. ‡ For Buildings only.

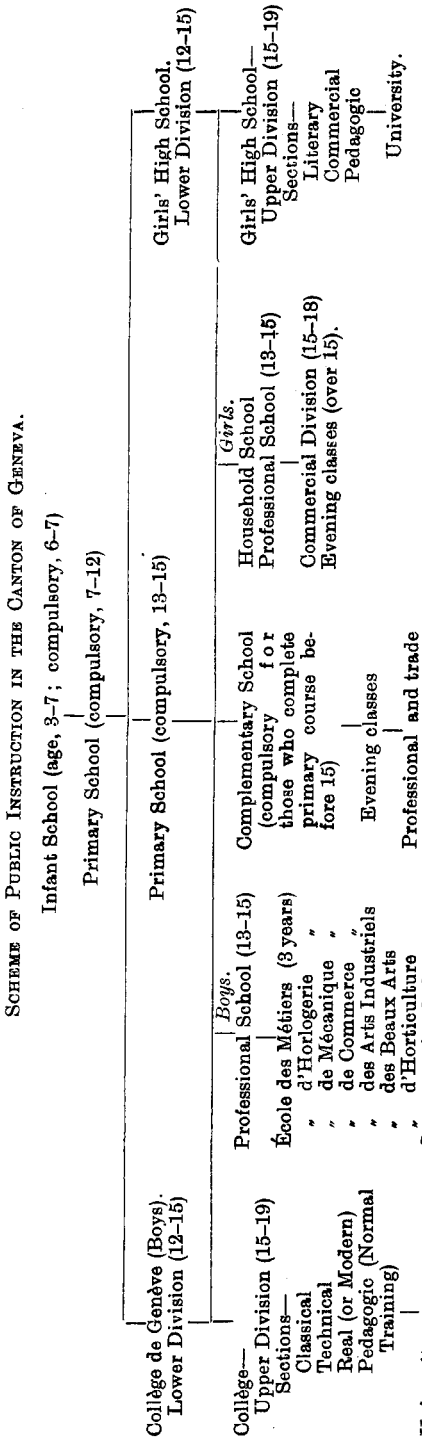
TABLE E2.—PERCENTAGE OF THE COST OF THE SEVERAL BRANCHES OF EDUCATION BORNE BY THE BUND, THE CANTONS, AND THE COMMUNES RESPECTIVELY.

Source of Contributions.	Primary.	Secondary.	Technical.	Higher.	All Branches.
Bund	5·0	..	22·9	23·4	8·3
Cantons	35·0	61·5	47·4	66·5	43·6
Communes	60·0	38·5	29·7	10·1	48·1
	100·0	100·0	100·0	100·0	100·0

It will be seen that the Federal Government bears only one-twelfth of the total cost, while the communes or municipalities pay nearly half, the remainder being the contribution of the cantons. Further, the Bund paid in 1905 nothing for secondary education or for continuation schools; nor did it make any grant for higher education except for the Polytechnikum at Zürich, which is a Federal institution.

Certain towns gave subsidies towards the cost of their University buildings; but the burden of maintaining the Universities falls entirely on the cantonal exchequers. The communes found the greater part of the money for the volksschulen (primar- and sekundar-schulen); but their contribution to the mittelschulen (which correspond to the New Zealand "secondary schools") was less than a sixth of the total cost of these schools to the State, the cantons providing over 84 per cent. of the money required.

It may be of interest to note that no part of the cost of any school or college buildings was provided by the Bund; of the total £140,000, the sum of £64,000 was paid by the cantons, and £76,000 by the communes.



VOCATIONAL SCHOOLS.

Switzerland does not stand alone in Europe in having an almost complete ladder of education for all its citizens. Several of the States of Germany have reached a similar position; the system of Wuerttemberg, for instance, is particularly well organized; but it is scarcely so comprehensive or so well balanced as the Swiss system, the tendency being to make better provision for technical and trade education than is made for the general education of the average citizen. I fancy, too, that the higher grades are not so open to all as they are in Switzerland or in New Zealand; this is certainly the case as we go north in Germany—in Prussia, for example—despite the excellence of most of the methods of teaching and the ample provision made for continuing instruction beyond the years that we count as the proper school age.

The extension of the school age is one of the lessons we have to learn from Europe; all progressive countries are practically agreed in this: the education of the citizen must not cease at the age of thirteen, fourteen, or fifteen, when his mind is still unformed, but must be carried on into the

years when he is beginning to look at the world with the maturer eyes of manhood and when his interests are no longer those of the child, but more nearly identical with those of the majority of the earnest toilers around him. In fact, we must extend our "school age" for all individuals—not merely for the professional students—from fourteen or fifteen to eighteen at least. This does not imply that none are to go to work until that age; but, even if the necessity of earning a living makes such a course inevitable (as it undoubtedly does in the majority of cases), still we must so modify our ideas and our practice as to give the apprentices in the workshops, the junior clerks in our shops and offices, the boys on the farms, and the girls in their homes, that instruction which will make them more efficient in their several callings, give them a wider outlook on the world, and therefore make them better citizens. The instruction should go on side by side with their daily work—if possible in the daytime when their energies are fresh, but, if not, in the evening. Employers in other parts of the world have found it to their benefit to have their apprentices educated, and have willingly given up six or seven hours a week for this purpose, and the workers' unions in Switzerland, Wuerttemberg, and elsewhere have cordially co-operated with the employers in voting, in most of the communes, for the legal enforcement of such attendance. In any case, whether the instruction is given in the day time or in the evening, whether attendance is enforced by legal enactment or by mutual agreement, it is absolutely certain that unless we in New Zealand take steps to imitate the example set by older countries, not only shall we fall behind Switzerland, Germany, Denmark, Sweden, and the United States, but we shall by no means keep pace with the more advanced communities in England and Scotland, where the principle I am pleading for is beginning to be recognised.

We might begin with a moderate standard for the young worker between fourteen and eighteen years of age, say, 200 hours of instruction per annum; half the time might be given by the employer (wages being paid for full time), and half by the worker out of his own time. In organized trades, a rule might be made that, in future, admission to a union of skilled workmen should be conditional upon the possession of a certificate that the candidate for admission had followed diligently the full course of instruction as an apprentice to the trade (*i.e.*, a certificate corresponding to the "Certificat de Capacité" in a Geneva trade school). It might even be possible to classify workmen on such a basis; and as membership of a union would be the evidence of a trained artisan, the question of preference to unionists would solve itself, for no sane employer would dream of employing a man who was not a member of a union.

Wherever vocational training (as it has been called) has been systematically established, the efficiency of workmen (and among them we must include the managers and foremen of the various industries) has been vastly increased; competent judges, indeed—not educationists, but employers—have declared that in some cases—notably in certain mechanical trades in Germany, and in farming in America—the value of the output has been doubled in consequence of the awakened intelligence of the workers. Such men would have a just claim to higher wages; but, what is more, the increase of production would probably afford ample means of paying such higher wages, for the needs of the civilised world are by no means satisfied yet.

The importance of the subject justifies somewhat fuller reference to the present law in Wuerttemberg.

Vocational Schools in Wuerttemberg.

In Wuerttemberg and Bavaria there has been a great development during the last twenty or thirty years in the matter of vocational schools. Wuerttemberg now leads all German States in the extent of the development of its "Industrial Improvement Schools" (Gewerbliche Fortbildungsschulen) or Industrial Continuation Schools. (The word "industrial" has here nearly the meaning of the word "technical," as commonly used by us). In 1905 it had 243 Industrial and Commercial Improvement Schools, Public Drawing Schools, and "Women's Work" Schools, scattered throughout the kingdom, with a total of 28,574 students (the population of Wuerttemberg is 2,300,000); 150 of the institutions were Industrial Improvement Schools for young men—22 compulsory by local option, and 128 non-compulsory—attended by 18,535 students (1,349 + 17,186); 4 were Commercial Improvement Schools—2 compulsory and 2 non-compulsory—with a total enrolment of 1,245 (225 + 1,020); 42 were Industrial Drawing Schools, with 894 pupils; 15 were Industrial Improvement Schools for girls, with 1,042 in attendance; and 32 were Trade Schools for girls and women, with 6,858 on the lists. Industrial drawing was taught in these schools by 654 specialists, and the remaining subjects by 952 instructors.

Continuation Classes in Wuerttemberg date from 1559, when they were held on Sunday after morning service. In 1818 some of these classes became industrial or technical in character; in 1854 there were 45 industrial improvement schools having both Sunday and evening classes. "The increased efficiency of those workers who attended the fully equipped schools was so marked as to win for all time the influence of industrial employers and unions in favour of the improvement schools. Communes began to exercise compulsion, but results were not always satisfactory, because of the dearth of qualified instructors."

The progress of these schools is shown by the following table :—

Year.	Number of Schools.	Number of Students.
1846	69	4,500
1861–62	84	7,273
1871–72	155	9,763
1881–82	153	10,225
1891–92	188	17,250
1901–2	239	21,054
1907	over 250	over 30,000

It must be remembered that these schools are independent of the general continuation schools (Allgemeine Fortbildungsschulen) and of the special trade and technical schools, as also of the higher Techniken and the Technical College at Stuttgart.

Evening instruction having for many years to a large extent replaced Sunday instruction (the form first taken by these classes), the last step has been to substitute, as far as possible, attendance at day classes for attendance at evening classes, and the establishment of industrial school classes is to be made compulsory. On the 1st January, 1907, an Act came into force, the chief provisions of which are as follows :—

Every locality, or commune, in which for three successive years an average of at least forty male workmen under eighteen years of age are engaged in commercial or industrial pursuits, is obliged to provide an industrial improvement school for their reception and instruction, and to maintain the same so long as the number of workmen of the stated age does not fall below an average of thirty for three years. The ordinary school under the law will be an "industrial school," but, if necessary, a "commercial school" is to be erected in addition.

Every young man in a commune who is engaged in an industrial or commercial pursuit, and is of the required age, under eighteen (boys are usually through the common schools at fourteen) is obliged to attend the school for three years, or until the end of the semester (half-year) in which he reaches eighteen. Communes which establish a four-year course may make the attendance compulsory for the fourth year also. Those may be freed from the compulsory-attendance requirement who attend a guild, or trade school, or other recognised equivalent. Those not of the compulsory age may attend the schools as heretofore. The communes may erect industrial schools for girls, and in accordance with the Imperial law of 1900 may make attendance at these schools compulsory for employed girls under eighteen years.

The communes may collect tuition fees from the pupils, or may compel employers to advance the amount of the fees. The State pays half of the amount required for maintenance after the fees and gifts are applied towards it.

The minimum number of hours of instruction is 280 per year. Employers must make it possible for the young workers to attend, and penalties are provided against employers and parents who fail to observe the law. The law will come into operation gradually in order to allow time for the training of qualified teachers.

Attendance at the option of the communes has been compulsory for some time in other States of Germany besides Wuerttemberg—for instance, in Baden attendance was in 1904 compulsory in 157 schools out of 160; in Prussia (1903), compulsory in 1,082 out of 1,209 industrial improvement schools, and in 182 out of 273 commercial improvement schools; Bavaria (1904) has compulsory attendance for 217 out of 301 industrial improvement schools.

These facts relating to Wuerttemberg are taken from a report by Albert A. Snowden, of the Teachers' College, Columbia University, New York, who, further, in discussing the effects of the system, says,—

"The question of the increase in efficiency through attendance at an industrial or commercial school has long ago been placed beyond the pale of doubt in Wuerttemberg. It is now accepted as a matter of course, and some statistics gathered at first hand from employers, apprentices, and parents by the present writer confirm the soundness of this belief. In a word, the employers are uniformly enthusiastic over the results obtained, and the workers are similarly minded. The institutions make it possible

for all, who are willing, to obtain employment. The higher quality of the work that is done enables the manufacturers to compete successfully in the markets of the world, and, even in times of general depression, to keep their workers employed at a wage which, for Europe, is very good, and advances according to skill. For years it has been extremely difficult for the few young men who have not had the advantages of a vocational-school training, and who do not show a disposition to avail themselves of its opportunities, to obtain work from intelligent employers. As final proof, we must remember that the vocational laws of Wuerttemberg have ever been chiefly instigated by business men, and that the recent advanced legislation in this direction is mainly the work of employers."

That the workers have been in favour of it all along is shown by the fact that most of the communes in which they form a majority have voted for compulsory attendance under the Imperial law of 1900.

It will be interesting to compare the following analysis of the school state of Wuerttemberg (population, 2,300,330) with the figures given in Tables A1 and A2 for Switzerland and New Zealand respectively :—

		Actual Number.	Number per 10,000 of the Population.
I. Primary (including preparatory classes of the Gymnasien and Realschulen		341,924	1,486·4
II. Secondary (exclusive of preparatory classes)		16,477	71·6
III. Continuation and Technical—			
(a.) General Continuation (evening and Sunday)	73,234	102,637	446·2
(b.) Technical Continuation (viz. Industrial, Commercial, Industrial Drawing, Industrial for Girls and Women, "Women's Work")	28,574		
(c.) Higher Art Schools	829		
IV. University and Higher—			
(a.) Special Agricultural Schools (including Veterinary College)..	946	6,521	28·3
(b.) Special and higher Technical Colleges ..	3,388		
(c.) State University at Tübingen	2,187		
V. Other special schools of varying grade		5,277	23·0
Totals..		472,836	2,055·5
Receiving public instruction higher than primary		130,912	569·1

It will be seen from the above that 20·56 per cent. of the population of Wuerttemberg were under instruction, and 5·69 per cent were receiving public instruction of a grade higher than primary, which, though scarcely so high as the proportion for Switzerland, is yet more than twice what we can boast.

FURTHER NOTES ON THE SWISS AND OTHER CONTINENTAL SYSTEMS.

Methods of Teaching.

If I were asked what is the key to the success of Swiss and German methods of teaching, I should undoubtedly have to reply that the chief element to which their success seems to be due is the thoroughness with which all their work is done. It may be a prosaic quality, perhaps; but teachers and pupils seem to be alike completely imbued with it. The thoroughness of the teacher is due not only to his earnest belief in the supreme value of education, but to his skill acquired by training; in all these countries there is no place for the untrained teacher.

In Germany there are two strong motives urging the individual to thoroughness in work—(1) the possibility, by diligence and good progress through the periods of primary and secondary education, of reducing the term of compulsory military service to one year; (2) the national idea—not as something external, foisted on, but as an essential part of the whole system—the profound conviction that without education a man cannot be a good member of his commune or a good citizen of the empire.

To the thorough teaching of the mother-tongue I have already borne witness. Its literature serves, moreover, as the vehicle for stimulating the feeling of patriotism. But in the teaching of foreign languages the methods are equally thorough. In the case of modern languages, the method adopted in all the schools I visited was invariably the "direct" or "natural" method. In fact, when I asked a Swiss teacher whether this method was employed in all their schools, he replied with some surprise, "Certainly; there is no other method. But are there any schools in your country where they do not use this method?" There is no doubt whatever about the success of the method when used in the thorough manner characteristic of German secondary schools.

[As one example among many that might be quoted, I may take the teaching of English and French in the Erste Realschule of Berlin, whose Rector, Dr. Pohle, was exceedingly courteous in affording me opportunities of seeing the work in his school. Here, as everywhere in Germany, foreign languages are taught by German masters, never by English or French masters. Some of these had been for a time in England or in France; but, generally speaking, the pronunciation of the pupils was not particularly good, the French pronunciation being no better than may be heard in an average New Zealand secondary school. But, as regards the knowledge of the foreign language taken up and the ability to use it, there can be no two opinions. I was present through the whole of a lesson in English given to boys of fourteen or fifteen; they had been learning the language for about six months, and had given four or five hours a week to the subject. Towards the close of the lesson I was asked to question the class. I asked them questions about the objects in the room, the parts of the body, the weather, simple actions of daily life, and about one or two pieces of simple literary English that they had been reading in class. Only once or twice had I to repeat a question because I had used some word outside their vocabulary; even then they seemed anxious to appropriate the unknown word, and add it to their vocabulary. The answers were given without hesitation, in good consecutive English sentences; now and then I had to correct an answer, generally not because it was inaccurate, but because it was unusual or pedantic in form. For twenty minutes or more we were able to carry on quite an animated conversation. The class was keenly alive to learn all they could of the pronunciation of English, and when my pronunciation of a word was different from theirs, of their own accord they endeavoured to imitate me by repeating the word after me.]

In Berlin, English is to a large extent replacing French as the first foreign language taken.

In the dead languages there is also a large amount of oral practice—with question and answer in Latin (and even in Greek) in some schools; consequently there is great freedom and rapid progress in the use of the language. Great attention is paid to the history and local circumstances to which the literature refers; the books read are treated as literature, not as mere instruments for teaching grammar. The standard in secondary schools is high: the amount of reading in Latin is far greater than most of our best schools succeed in covering before the pupils reach the age of nineteen.

[As an example of the amount of ground covered in a good Continental school, I may cite the work done in Latin in the lowest class of the Ginnasio Division of the Liceo Visconti, in Rome, where the beginners read through 147 pages of easy Latin prose during their first year, each page containing about half as much again as would be contained on a page of one of Macmillan's Elementary Series. Even with the greater amount of time given to Latin, and the advantage that Roman boys have in acquiring a language so closely akin to their own, amid surroundings that call to their minds the conditions under which that language was the speech of the rulers of the world, the work done is sufficiently astonishing, and if half as much were usually done in our schools we should be abundantly satisfied. Roman history, literature, and institutions receive much more attention than with us, and consequently the pupils have far more chance of obtaining real culture from their Latin lessons, from the point of view of full and intelligent citizenship, than pupils generally receive from such studies in New Zealand, where much of the work resolves itself into a curious apotheosis of Latin Grammar. What may be remarked in passing is that the pupils are not deficient in pure scholarship—for instance, the quality of the Latin prose would by no means suffer by comparison with that in the higher classes of our best secondary schools. In many schools now established in Italy, Latin receives such free treatment in oral lessons that the method really approximates closely to the natural or direct method. It may be remarked here that this method is being employed in an increasing degree in the English public schools—in the Perse Grammar School, Cambridge, for instance, I saw several Latin classes being taught on the direct method, apparently with much success.]

No attempt is made to take all pupils through a programme of work in Geometry that shall be comprehensive, or that shall embrace a complete logical course in plane and solid geometry; fundamental facts are taught, and pupils are taught to apply these facts readily to practical problems. Our adoption of geometrical reform so far is simply, as a distinguished English teacher of mathematics expressed it to me, the substitution of one Euclid for another. Trigonometry and algebra are treated in the same manner as geometry. Pupils have thus time to know something of algebraical geometry, and even of higher branches, so far as they can be applied to easy practical examples. A course of mathematics in a Swiss gymnasium looks far more formidable on paper than a course for the degree in our University; but in reality it is not so, for, while the ground covered is wider, very little attention is paid to the mathematical gymnastics with which our text-books abound. No one can say, however, that the mathematical power acquired is less: the difference is that, whereas with us only the mathematical genius survives the process, under the Continental method most pupils of even average ability can use the mathematical knowledge that they have acquired.

Science generally is not so well taught in Continental schools as in good schools in Great Britain or the United States of America, or even in the best schools in our Dominion. Lectures on physics or chemistry, even accompanied by the best demonstrations explained with the clearness of a trained German teacher or an Italian scientific expert, cannot take the place of individual experiment and observation for the purpose of training pupils in the scientific method. Very few Continental schools have laboratories

for individual work, and even those that are provided with them have not enough to give all or any considerable number of their pupils real scientific training. (It will be remembered that in the Collège de Genève there is no individual laboratory work in the classical division at all, and only in the last year is there any in the other divisions.)

The secondary schools of Berlin have already recognised this weakness, and last year (1907) a commission of seven experts was visiting England and Scotland to find out, as the authorities informed me, "why scientific teaching in English schools was so much better than it was in Germany."

I must not omit to say that in the technical secondary schools, and in some technical departments of ordinary secondary schools on the Continent, the teaching of Science is generally better, and approaches the standard of the best schools in Great Britain; for instance, the Director of the Istituto Tecnico, or Technical High School, of Rome (for boys of fifteen to nineteen years of age) informed me that he did not believe in "lectures," but the pupils and teachers discussed and explained what they had observed, and deduced principles therefrom. The course of science is uniform in all the Istituti Tecnici in Italy, and is very similar to that of kindred schools of Switzerland and Germany.

[In these Istituti Tecnici, which have a four-year course, Natural History, as it is called, is taken for three hours a week during the first two years—namely, Zoology and Botany in the first year, Mineralogy and Geology in the second year. As the school museums are well provided with stuffed and bottled specimens, with good models and illustrations, and these are supplemented by living and fresh specimens collected by the professors or sent from public gardens or institutions, there is not lacking material for observation. In the third year, three hours a week is given to Chemistry—that is, in general, to class demonstrations, and discussions based upon them, although a professor of chemistry at the Roman Istituto told me that, having ample laboratory accommodation, he often adopted the "English method" of making the boys do the experiments individually themselves, instead of giving a demonstration. In the same year all pupils give five hours a week to general physics, treated in a similar manner. In the fourth year pupils of the Physico-Mathematical Section take four hours a week in the Chemical Laboratory, and three hours in the Physical Laboratory, but the Agricultural and Commercial Sections drop these subjects, while the Industrial Section takes instead applied mathematics, industrial chemistry, and laboratory work to correspond.

The full science programme of these technical institutes is given in the Appendix. It may be interesting to compare it with the work in Natural History, Natural Science, Physics, and Chemistry in the programmes of the several sections of the Collège de Genève, which are also to be found in the Appendix, and give a fairly representative idea of the work done in these subjects in most German and Swiss Gymnasien and Realschulen. It may be said on behalf of the science-teaching in all these schools that, however short the training in scientific method falls of the best English ideals, this result, at all events, is secured: that no pupil leaves school ignorant of the leading facts in any of the chief branches of natural and physical science.]

In all Continental countries great importance is attached to History; even in America, as we shall see, more attention is given to this subject than here or in England.

"History" is not restricted to National History, but in most cases includes a general view of the history of the world; less attention is given to military history and military events, and more to national, social, and literary movements than in the text-books written for our boys and girls. Even in the highest classes of secondary schools no pupil is allowed to drop either history or geography, but the treatment of these subjects is adapted to the more mature age of the pupils. It is especially worthy of note that these subjects, being regarded as "Humanities," are treated in a way to kindle truly human interest in the pupils, facts being used only to elucidate and emphasize principles.

Drawing, as is well known, receives full attention as a compulsory subject in the secondary schools on the Continent, and its treatment is probably most successful in France. Everywhere there is a tendency to give up drawing from flat copies, drawing from objects and from nature being substituted. (This is now also a marked feature of the best English schools, primary as well as secondary.) In many of the schools, both English and Continental, can be noted too the facility with which pupils make freehand dimension sketches of objects or models placed before them and develop therefrom working plans and sections. This applies to exercises connected with the instruction in science as well as with the manual work done in the schools. The work in design is based not only on conventionalised representations of natural objects, as flowers and the like, but on the principles of art as seen in Greek, Egyptian, Moorish, Italian, and other examples—that is, on the history of ornament (see "Drawing" in the programmes of the Collège de Genève, &c.).

Some of the professional, technical, and trade schools in Switzerland and Germany lay what would at first sight appear to us to be an extravagant emphasis on the importance of drawing in the technical course; but it must be remembered that in a German or Swiss Gewerbeschule the instructor in drawing, in discussing with his pupil the plans, say, of a machine, enters into

all the questions of its construction with a view to its efficient and economical use; and the instruction accordingly embraces so much more than what would seem to be implied in a mere course of drawing, that one goes away with the feeling that the Swiss or German may be right after all.

School Hours.

A slight study of the programmes sketched out above at once directs attention to the amount of time spent in school in countries on the Continent of Europe. In the primary schools of Geneva and Switzerland generally the hours of instruction are 30 per week during the whole of the six-year course; in the Bürgerschulen of Frankfurt the hours for boys begin with 20 per week in the lowest class (Class VIII, six years of age) increasing to 24 hours in the sixth (VI, eight years of age), 30 in the fifth and fourth, 31 in the third, and 33 or 34 in the second and first (II and I, twelve to fourteen years of age). During the last five years of the primary-school course the average duration of school is 31 hours per week for boys and 30·4 hours per week for girls. The great length of school hours is a feature of the secondary schools also. In the Erste Realschule of Berlin the hours vary from 30 to 37 per week, the highest classes having only 30 hours in school, but, on the other hand, their home work is very heavy. In the Collège de Genève we find 33 hours per week in all sections in the upper division of the school, but only 26 hours per week in the three classes of the lower division. In the lower division of the Girls' High School we again find 26 hours per week allotted, but in the upper division this is increased to 28 or 30 hours.

In German secondary schools the hours are generally more than in Swiss schools, but about seven years ago there was a movement in Frankfurt to reduce the school hours by a substantial amount, in consequence of serious medical reports to the effect that the health of the youth of the city was suffering considerably from overwork in school. In the secondary schools of Rome the time varies from 30 to 32 hours per week, with a substantial amount of home work. In the Italian primary schools, however, the hours are shorter, being approximately the same as in New Zealand. In England the hours in secondary schools vary considerably; in boys' schools they generally reach 27 or 28 hours at least, but are considerably less in most girls' secondary schools, which indeed in many cases are held in the morning only, the work, if any, done in the afternoon being not class-work but preparation for the next day, by pupils whose parents prefer that their daughters should do such work at school rather than at home.

I took some pains to observe whether there were any signs of fatigue in the pupils in certain German schools where the hours were long, and came to the conclusion that the evidence of mental fatigue was unmistakable in a large number of cases, although general restlessness, one of the first signs that would be displayed by a class of British boys, did not make itself apparent in a class of German boys, either because they are naturally more docile, or because they are better drilled to habits of implicit obedience and attention. On one occasion, when the class was taking a lesson in English at the end of a long morning (five hours without any long rest), I noted that 60 or 70 per cent. of the class (twenty-five or more out of forty) were so tired out that their work was purely mechanical. Again and again, moreover, I thought I observed signs of fatigue in the teachers, a symptom not unknown in other parts of the world. That being so, I am not inclined to recommend any substantial increase of school hours in New Zealand schools. For the present I leave unanswered the query how we are to include in our programme some of the useful work done elsewhere without increasing the length of the school day. America may have something to say to us on this question.

Education in Italy.

In Italy the elementary schools are under the control of the municipalities, which find most of the money required for their maintenance, the State's contribution being in general only about one-twentieth of the total cost, although a somewhat larger proportion is given in the case of poor and small communities. The standard of education varies considerably, especially in the country districts, being so far as they are concerned much better in the north of Italy than in the south. The schools in the larger cities, such as Rome, Florence, and Milan, are generally very good; many of the ideas current in Germany, France, and Switzerland have been adopted, and some, at least, of the work is not inferior to that done in the best schools in those countries. This is especially true of the teaching of the mother-tongue.

The schools maintained by the Corporation of Rome are the maternal schools or kindergartens, and the primary or public elementary schools. One of these, in which I spent a day, the Scuola Regina Elena, is a new

school with fine buildings, elegant, although not architecturally elaborate, with good spacious classrooms and wide passages, gymnasiums, cloak-rooms, rooms for teachers and the medical officer. This large school has a roll of over 1,900 children; there are 75 or 76 teachers, including the headmaster, the headmistress of the girls' side, and the chief assistant, who is the deputy of the headmaster on the boys' side. The children have single desks, graded according to the heights of the children, but not adjustable. Many of the children evidently came from poor homes, but all were neatly dressed, and they looked very clean and happy. There are six classes, from the Prima to the Sexta, but each of these classes has several divisions on each side of the school, in which, with a few exceptions in the junior classes, boys and girls are entirely separated. The classes are all taught by adults (trained teachers nearly all), and are small in size; of the ten or twelve classes I saw, the largest contained 34 pupils, the smallest 23, and the average number of pupils present per teacher was 27. The work in Italian struck me as particularly good; the answering was clear in enunciation, and evidently great pains are taken to keep the pronunciation pure; it was easier, therefore, to follow the children with their slow, clear utterance than it was to understand the more rapid and idiomatic conversation of the teachers. As in Switzerland and in most of the German elementary schools, one of the first lessons is a lesson in the mother-tongue based upon what the children have observed. The Saturday before my visit (which took place on a Monday morning) the swallows had reached Rome from Africa; I had seen old and young alike standing in the streets and watching the weary wanderers seeking for resting-places in the gardens of Queen Margherita's Palace. Accordingly, I was not altogether surprised to hear the first question asked in one of the sections of the girls' Prima: "What did you see on Saturday afternoon?" But I was somewhat surprised to see a little girl (aged 6 years and 7 months, as I was informed) stand up, and give seven clearly expressed consecutive sentences, telling the class what she had seen and knew about the swallows. She made one little slip (a colloquialism), which was quickly corrected in a kindly manner; several other pupils gave additional details, until we had quite a simple natural history of the swallow. Once or twice a child was checked by the teacher's inquiry: "How do you know that? Did you see it?" One child promised to bring a dead swallow which had fallen into a neighbour's yard, and was allowed to go home to bring it for the other children to see. Pictures of the swallow were then shown, with a map of the Central Mediterranean, showing Italy and North Africa, and the distance was measured by one of the children to see how many times as far it was from Africa to Rome as it is from Naples to Rome. The arithmetic is good, but, as all tables are decimal, the mastery of the first four rules is practically all that has to be taught. Simple mensuration is always taught, generally apparently by actual measurements—the only rational way. "Lavoro"—handwork—is taken by most of the pupils on Saturday morning; in the upper classes of the girls' side, this is nearly always some form of needlework, knitting, crocheting, or sometimes lace-making.

The carton-work in the middle classes is very neatly and accurately done; the work consists largely of geometrical models, trays, boxes, and representations of common domestic objects. In some schools boys learn woodwork and wirework, and do work in two or more materials in combination to designs by themselves. Drawing of the nets, and drawing from the finished objects are always features of the instruction.

The importance of teaching the domestic arts to girls is being more and more recognised in Italy, probably owing to the influence of Switzerland, but at present these studies are "facoltativi" or optional in the primary schools, although the Government makes special grants for this and other forms of manual work. The weak point of the system is the same as that in the majority of French schools—the comparatively early age at which children leave school: in the Scuola Regina Elena none of the pupils were, I believe, more than 13 years old, and many of the sharper ones leave school at 12; in the French rural schools pupils of 11 and 12 often gain the "certificat des etudes," which entitles them to exemption from school attendance. Attendance during the compulsory period is now being tolerably well enforced in Rome, and still more so in Northern Italy; but in the south it is very laxly enforced, and the number of "analfabeti"—persons unable to read—in the population is very large. In one of the southern provinces (Calabria) the number of "analfabeti" above six years of age is 78·68 per cent. of the population; in Rome the proportion is 43·83 per cent. In Lombardy and Piedmont it falls to 21·58 and 17·69 per cent. respectively; while for the whole population of the kingdom above six years of age, the percentage of illiterates is 48·49 per cent. The proportion is

much higher among women than men, but for both sexes there is a gradual improvement, for whereas the number of "analfabeti" for all Italy is 43·85 per cent. of all the men above 21, and 60·39 per cent. of all the women above 21, the percentage of such persons above 12 years of age is for men, 42 per cent.; and for women, 55·5 per cent. The figures are taken from the last available returns—those of the census of 1901 ("Nuovo Manuale Scolastico, 1907," by Dr. Bruto Amante, pp. 16–18). Want of money is at the root of the evil; the immense drain upon the national finances entailed by the vast military system makes a proper expenditure upon education next to impossible. This fact is recognised, even at the Ministry of Education itself; and the great interest taken by the educational authorities in the public-school cadets of New Zealand (about which, without any suggestion from me, they made particular inquiries) was due to the fact that they thought they saw in such a system a key to the solution of the problem of national defence without entailing upon the people burdens too heavy to be borne. "School cadets," said one person in a high position to me, "why, with a few weeks' training in each year afterwards, they would be soldiers!"

The appalling figures given above do not alter the fact that in the large schools of Rome, and even more in those of Milan and other northern towns, the teaching in the elementary schools reaches a very high level. In fact, nowhere, not even in Switzerland, Germany, or America, did I see better teaching of the mother-tongue, linked with the observation of the facts of nature and human life, than I did in some of the best Italian schools. This feature was, perhaps, still more marked in the various classes of the secondary schools. The standard of work reached, for instance, in the Liceo Visconti, with its preparatory Ginnasio, at Rome, was very high; in every class, in every subject, the main idea seemed to be to secure the adequate and clear expression of the pupils' thoughts on that subject in their mother-tongue. The beauties of Virgil, the epigrams of Horace, the narratives of Cæsar, Livy, Sallust, Tacitus, by means of their allusions and the sidelights they throw upon the contemporary history, taken in conjunction with the monuments that every Roman boy sees daily before his eyes, were made the occasion for the intelligent discussion of Latin and Italian literature, and of the political and social institutions of ancient and modern Rome. The standard of pure Latin scholarship was high, but the lessons were quite as much lessons in history and civics, and in the practice of ready speech in modern Italian, as they were lessons in Latin. It was the same with other subjects. I was present at a lecture on modern discoveries in electricity given by Dr. Matti (chief science-master of the school, and a distinguished worker in physics), illustrated by excellent experiments. After the lecture three students stood up and gave without hesitation clear and continuous explanations of the lesson. The first may have prepared his summary; but it was clearly not so with the second and the third (a girl), whom I picked out, and for whom I framed the questions to be answered. The pupils belonged to the two highest classes of the "Liceo," and were from 17 to 19 or 20 years of age. I am convinced that very few of the students in our University Colleges could have passed such a test as well as these young Italians did. The value of such exercises in mental development is, I think, sufficiently obvious.

The salaries in the elementary schools are very low indeed: the minimum legal salaries payable to teachers in primary and infant schools are: City schools—Men, £48 to £64 a year; women, £38 to £48 a year. Rural schools—Men, £36 to £40 a year; women, £30 to £34 a year. Many Communes make additions to these salaries, in some cases more than doubling them; additions are also made in the case of married men, and of men or women having parents or other relatives dependent upon them, and small extra grants are made for manual instruction. Where the commune is too poor to pay the minimum legal salary, the amount is made up by the Government, or the school is closed.

The pensions payable to retiring teachers with 25 years' service or over, and the allowances to widows, orphans, and other dependent relatives of deceased teachers, are comparatively liberal: for instance, a teacher with 25 years' service retiring at the age of 60 would get a little over three-fifths of his average minimum legal salary; if he retired with the same length of service at the age of 65 he would get 48 per cent. of his average minimum legal salary. With 40 years' service if he retired at the age of 60 he would get a trifle more than his average minimum legal salary; and with the same service if he retired at 65 he would get 1·32 of his average minimum legal salary. The additional allowances and the additional salary paid to him (if any) by the commune are not taken into account in assessing the pension. It will be noted that in the assessing of pensions a principle is taken into

account that in our superannuation systems receives no weight—namely, that with the same length of service a teacher retiring, say, at 65 receives a higher pension than one retiring at 60. This is actuarially sound, as the older teacher has presumably a shorter time to live. I am not quite sure, however, whether on grounds of public policy ours is not the better plan; it is not desirable to give extra inducements to worn-out teachers to remain in the service.

NOTES ON FOUR ENGLISH SCHOOLS.

The "Michael Faraday" London County Council Elementary School, Walworth, S.E.

This school is an excellent example of the practical carrying out of the new ideas in education. The headmaster is Mr. Marshall Jackman, whose name is probably known to all in New Zealand who read English educational journals. Comparing its work, class for class and age for age, with that in our New Zealand town schools of similar size, I came to the conclusion that it reached a very high standard. The programme in each subject is well thought out, and thoroughness is a marked characteristic of its execution. Great attention is paid to English, oral and written, emphasis being laid on comprehension and on clear and accurate expression of thought. In arithmetic no paper or slate work is done until after Class 3 (the old Standard IV) is passed; the work is all done either mentally or on the blackboard. The questions are all very practical, and the numbers used are small. I was allowed to test the work in Standard IV, and found it very good. The programme of the instruction in this subject is printed in the Appendix.

Science is taught on the heuristic method, the boys working in pairs. They are encouraged to extend their knowledge by visiting museums and factories, and by consulting books in the excellent school library. The programme is a comparatively simple one, as will appear from the scheme of Practical Science for Standard VII, which is given under the head of the "Teaching of Science" in the Appendix.

One of the features of the school is the method adopted in the highest class of the boys' school. Only a few of the lessons are what may be called formal—namely, a few lessons in arithmetic (including simple book-keeping) and in English; science, as in the programme already referred to, and manual work. All this occupies not more than a third of the school hours. For the rest of the time each boy takes up a special subject chosen by himself, and finds out all he can about it by personal investigation and by use of the class library, which contains many good books of reference. One boy was taking up the subject of the London County Council electric tramway system. He received through his master permission to visit a power-house and a car-factory, to examine the wheels and other fittings, the brakes, and so forth; he read all that he could on the subject, and made notes in a special note-book of all that he saw or learnt from books, or in answer to questions; he made drawings and diagrams to illustrate his notes, and connected the knowledge he gained of electric power with the science lessons. He might, the master said, make, in the manual workshop, models of parts of tramcars, &c., and might even make a small complete working model of an electric tramway. He had to study the cost of manufacture, of installation, and of working. Finally, he had to write a clear, consecutive account of the whole matter. Other boys would take up historical, geographical, literary, commercial, or other technical subjects. The master of the class, which at the beginning of the year contained 27 boys, exercised a right of veto over the subjects chosen, sometimes suggesting questions for investigation. He guided the inquiries of the various pupils, and looked over and corrected their notes and essays. The knowledge gained became the common property of the whole class. It is contended that the boys leave school with the desire and the power to find out things for themselves, and, as they often choose subjects connected with their future trades, really prepare themselves for intelligent work therein. The father of the boy I have referred to was in the service of the London County Council tramways, and the boy's ambition was to be a motorman or to be engaged in the power-house.

Altogether, the method of work adopted in the class was very suggestive. It will be observed that a good reference library for the class is an essential of success; moreover, the class should not be too large. The method is worthy of consideration in our classes Standard VI and Standard VII, especially the latter, even in the country. It has one great advantage that the pupil is kept occupied about some useful work in which he is really interested, and if he has to leave school before the close of the year, leaves it with some definite tasks completed.

OUNDLE GRAMMAR SCHOOL.

This is one of the English public (secondary) schools, which has in a comparatively few years sprung into the first rank. Situated in a quaint little country market-town of Northamptonshire, it is a wealthy school, the value of its endowments having greatly increased lately; of this fact the governing body, acting upon the advice of the vigorous and progressive headmaster, Mr. Sanderson, has taken full advantage. New classrooms, workshops, and boardinghouses have been erected, and new playing-fields laid out. It has the usual classical side, but instead of the modern side found now in most English public schools, it has an engineering department to which a large number of the boys belong. This department is intended to give its members not a professional engineering training, for which they are on account of their age not yet ready, but a general school training with a strong bias towards engineering, especially electrical engineering; while English and modern languages, therefore, are taught in a thorough manner, great stress is laid on mathematics, physical science, drawing, and manual work. All these subjects are studied in a very practical way. The method of teaching chemistry and physics is of especial interest; electricity and magnetism, for instance, are treated in a manner quite different from that in which they are usually dealt with in other good English secondary schools—that is, the method is neither the pedagogic method, in which the individual laboratory experiments illustrate the theories discussed in the classroom, nor is it the ordinary form of the heuristic method, in which the pupils under the guidance of the master perform simple laboratory experiments to rediscover for themselves the main principles of the science under investigation; it resembles, rather, what may be called the American method, as in one form or another it is employed in the science teaching of the high schools of New York, Chicago, and other cities of the United States, more particularly in those secondary schools known as manual-training high schools. Oundle School, it may be remarked, is well equipped throughout all its buildings with electric light, heat, and power; with telephones, electric bells, and so forth; the power being generated in the school workshops. All instruments and machines are accordingly of working-size, not mere laboratory models. The beginners in electricity commence by making themselves familiar with the electric current in actual use; they measure the current, its voltage, its electromotive force, the resistances of various kinds and sizes of wires, the electric units required for various purposes, ascertain the position of breaks in the different systems, and learn how to make and repair electrical apparatus. Their interest is keenly aroused by the practical character of their work, and from time to time they are quite ready to investigate by experiments reduced to the simplest form the reasons for the phenomena they have observed in practice. The laboratory work is directed in their minds not to an end which is more or less abstract, and perhaps only dimly formulated, but to the solution of problems suggested by their observation of the actual behaviour of the electric current. Of the nature and properties of the current they have, too, much clearer ideas than is usually gained in the ordinary laboratory programme taken up in schools. The master who directs the work is not only an expert teacher, he is also a qualified engineer. The method, which was at first adopted only in the case of those belonging to the engineering side of the school, was found so effective that boys of the classical side now do their science work on the same plan. It may be called the analytic heuristic method. The ordinary heuristic method is synthetic in character, as the pupils attempt to build up a science in the same order as that in which its laws were first discovered; whereas at Oundle, and elsewhere where the same system is adopted, the discoveries of modern science are taken for granted, the most perfect instruments are used, and research is then directed to discover the laws on which their working depends. It is obvious that the method can be used in other sciences besides electricity. For example, an approved method in agriculture could be practised first under ordinary conditions, then varied, and finally resolved into its simplest form for the purpose of discovering the laws on which it is based. Similarly with cookery and other branches of domestic science.

Modern languages are taught at Oundle on the direct method; but in this respect and in others which may be named, the school does not call for special mention. It is, in short, one of the best English public schools, faithful to a large extent to the old ideals, but moving forward very rapidly in the new lines along which education to-day is travelling. Above all, it recognises the fact that all boys are not alike—that many for whom Latin and Greek present no attractions should be educated on lines which appeal to their practical instincts, and that the education which they thus receive may be made both real and sound.

Bedales School.

The Bedales School, near Petersfield, Hampshire, is a private secondary school, established for the purpose of making an experimental test of certain reforms which the enthusiastic principal, Mr. Baddeley, thinks desirable in the traditional methods of secondary education.

The new departures may be indicated briefly as follows:—

(1.) Believing that the ordinary public school is defective inasmuch as it removes boys from many of those influences found in every healthy home, the headmaster has adopted the principle of the coeducation of boys and girls, and the attempt is made to train the two sexes together so that there may be between them not so much a feeling of rivalry accompanied often by a woeful ignorance of their respective aims and powers, but a mutual co-operation and natural intercourse in work and, to some extent, in play that is or should be characteristic of family life. It is thought that by making some approach to the conditions of a home the school may succeed in softening without enervating the boys, and in strengthening without unsexing the girls. So far as I saw during the brief visit I made the institution succeeds in its object to a remarkable extent. This part of the experiment is not altogether new, as the coeducation of boys and girls has often been carried out before in boarding-schools established by the Society of Friends. But the idea has rarely been applied before on the scale of Bedales to boys and girls of the class who usually go to separate secondary schools. [Of course, co-education in day schools is common enough in many parts of the world, notably in America, but it stands on a somewhat different footing, inasmuch as day pupils are subject in their homes to many of the conditions sought to be created here. For a partial discussion of coeducation in American High Schools the reader is referred to remarks under this head in the account of the schools of Chicago.]

(2.) Far more time is given to manual instruction and to open-air pursuits than is usually given in either boys' or girls' secondary schools, the object being to bring the education of the growing youth of both sexes into a closer relation with the facts of nature and of human life.

(3.) Although the classics are not neglected, there is far greater choice of programme than is afforded, at all events, to boys in an ordinary English public school, and pupils intended for any profession are enabled to get a training which, while it secures a fair degree of general culture, gives a sound preparation for their future profession, and a strong bias towards it; there is no attempt, however, to give any part of a special professional course.

(4.) In nearly all subjects the teaching is carried on according to the most modern ideas, and there is a great deal of freshness and originality about some of the methods employed. The staff consists of men and women highly qualified in their respective branches, who throw into their work a degree of quiet enthusiasm that cannot but infect their pupils. The master in charge of the work in mathematics and physics, Mr. Garstang, is a well-known writer on the teaching of these subjects. In his view, the recent change in the teaching of geometry is not carried out fully by the mere substitution of one Euclid for another, changing only the order of the propositions, with a little geometrical drawing thrown in. The real reform is the basing of the whole science upon concepts derived from physical facts determined by observation and experience, and the using of those concepts to establish deductively certain general principles of the abstract science, which are to be tested and applied again in practical examples and problems. It is accordingly not so important that the pupils should prove and memorise a large number of geometrical propositions, as that they should acquire the power of dealing with geometrical propositions and their practical applications from first principles. It is somewhat paradoxically said that they might be allowed to forget a proposition as soon as they had proved it, if they had in discovering the proof acquired the power of successfully attacking a similar question when it arose in the course of their work; but, in fact, if their knowledge is based on concrete and practical experience, to forget a leading proposition established in this way is the very last thing they are likely to do.

The experiment as carried out at Bedales raises the suspicion which has for a long time suggested itself to the minds of many teachers of geometry, that the setting of pupils to learn second-hand proofs of propositions is a mistake, that the propositions should be discovered by the pupils for themselves, and that the number of stock propositions might be greatly reduced —might be reduced, namely, to those which may in the strict sense be regarded as fundamental—that is, to less than half the present number. The time gained would be devoted to a really scientific treatment of the subject.

Science is treated on the heuristic method; the range of work covered is

not wide. For the establishment of a natural law the pupils make many experiments, taking the mean of their measurements, and drawing diagrams on squared paper, from which they endeavour to discover the required law—not always successfully. In fact, it appears to me that the limits of graphics are not always recognised, and that especially with young pupils it is necessary to do a large number of direct or natural graphic diagrams (the tracing of actual curves, &c.) before using the method for the solution of problems in which the co-ordinates have a symbolical meaning, and that even then, at first, the examples chosen should be very simple—relating to such elements as the age and height, or the age and weight of boys, temperature and barometric pressure day by day or from hour to hour, population and time (years), space and time, velocity and time, &c. To begin too soon with examples in which x (a *length*) represents *volume*, and y represents *pressure*, for instance, is very confusing to the pupil of average intelligence; if he does succeed in getting a correct statement of Boyle's law, he is apt to miss the real physical significance of his supposed discovery. No doubt, careful questioning upon the diagram will enable the teacher to guard against this; but it is obvious that misconception will be avoided most surely by the pupil who has had a thorough grounding in simpler and more direct applications of the graphic method of representation of quantities. From the evident skill of the teachers, I should judge that the faults referred to are generally avoided at Bedales; but one or two examples of pupils losing their way in a mass of graphics came under my notice, and suggested the remarks already made.

Altogether, the school is a marked success in many ways; at all events, it shows the great advantages of treating secondary education in a more natural and practical way than that which is honoured by the tradition of several generations.

Clifton College.

This well-known school has had a succession of famous headmasters, and under its present head, Dr. A. A. David, it promises to maintain a leading place among the great English public schools. The division into classical and modern sides, which, in common with most other public schools, it has had for many years, has lately undergone some modification, the work of the modern side being much more solid and serious than it formerly was, so that it has ceased to be the "rubbish-heap" of the school. There are now three divisions or "sides" in the school—modern, military, and classical. On the military side great attention is paid to mathematics, drawing, science, and modern languages. All pupils take Latin; but otherwise the work on the modern side is even more modern than in a Berlin realschule, for the science is dealt with in a way calculated to develop individual power of observation and initiative. Equality of status in the modern, military, and classical sides is secured by equality of treatment in regard to promotion into the Sixth Form, with all its privileges. Physics and chemistry are both taught quantitatively and by individual experiment throughout, physics preceding chemistry. Both are taken by all pupils of the Upper School, but neither is taken in the Lower School, where there is substituted an excellent general course of elementary science (nature-study, &c., called at Clifton, on account of its miscellaneous character, "fancy science"). The method of teaching science is different from that at Oundle, as simple laboratory experiments precede, as with us, the use of such apparatus as would be employed by the engineer or other professional man. One very noticeable feature of the changes that are taking place is the fact that in the modern side the teaching of English occupies six to seven hours a week. English schemes are now being drawn up with the following aims in view:—

(1.) To co-ordinate history, regional and social geography, and English literature;

(2.) To cover as much ground as possible, whole works of authors being studied so far as time will allow;

(3.) To secure facility and correctness in composition.

The schemes were originally drawn up for the modern side, but are now largely common to it and the classical side. The number of boys in the school is about 550, of whom 100 are in the Lower School, and 450 in the Upper; the majority of the latter are in the classical side, where Greek is compulsory for admission to the Sixth Form. The school hours are from 8.45 to 12.15, and from 3.45 to 6 on Monday, Wednesday and Friday, Thursday and Saturday—that is, excluding preparation periods and intervals, a total of about twenty-eight to thirty hours a week.

AMERICA.

The rapid progress of settlement in Canada, the movement of population westwards, and the great influx of immigrants, are elements sufficient to try severely and to disturb any education system. The various provinces of the Dominion are striving bravely to cope with the problems that crowd upon them, and will probably succeed in time; but, meanwhile, with the exception of such institutions as the McGill University at Montreal, the Macdonald College at St. Anne's (near Montreal), and the Ontario Agricultural College at Guelph, there are few points that call for mention in this report. These institutions will be dealt with in the Appendix.

One note of warning is sounded in the report of the Minister of Education in the Province of Ontario: he points out the serious facts that qualified teachers are becoming more and more scarce; that the proportion of women teachers to men teachers—already more than three to one—is increasing; that, out of 6,007 teachers in the rural schools, only 1,898, or a little over 30 per cent., are fully certificated, the rest holding only temporary licenses or a lower qualification still; that most of these uncertificated teachers are girls between eighteen and twenty-two years of age, with no intention of remaining longer than the three years for which their temporary certificates are valid. In Ontario the average experience of the male teachers in rural schools is only 6·9 years, of women 4·1 years, and even including the towns and cities the figures rise only to 9·3 and 6·4 respectively. The average experience of all the elementary-school teachers in the province is only 7 years! Obviously, it was not too soon (last year, 1907) that the Macdonald College was opened, with facilities for training four or five hundred rural teachers.

The position is much the same for the majority of the small rural schools in the United States. The country school that manages to secure for its teacher a girl that has "graduated" after a four-year course in a high school is comparatively lucky: although she has had no professional training, she is at all events reasonably well educated. Until the salaries are increased above the miserable pittance that is usually paid (from £6 to £8 a month, paid for ten months only), the small rural schools in Canada and the United States are not likely to get, and perhaps do not deserve to get, better teachers.

The following table may be useful for purposes of comparison:—

AVERAGE SALARIES OF PRIMARY-SCHOOL TEACHERS IN CERTAIN PLACES.

	Average Salary (adults) to the nearest Pound. £	
Switzerland (1905)	45	
England and Wales (1905–6)	92	(men, £128; women, £78).
Scotland (1906)	104	(men, £153; women, £79).
Ontario, Canada (1906) ..	79	(men, £106; women, £72).
United States (all) (1905) ..	126	
Ditto, North Atlantic States	168	
,, South Atlantic States	80	
,, Western States ..	176	
,, Chicago	181	
New South Wales (1906) ..	145	
*New Zealand	150	(men, £193; women, £133).

There is much to be learnt from the education systems of the chief cities of the North Atlantic, North Central, and Pacific States; although dealing with urban populations, they are much more elastic than the systems in vogue in the great centres of population in Europe. Accordingly, I have devoted a good deal of space to a description of the organization and methods of the schools of New York and Chicago. The great movement for agricultural education, seen to most advantage in the middle-west portion of the United States, is worthy of separate attention in the Appendix.

EDUCATION IN NEW YORK CITY.

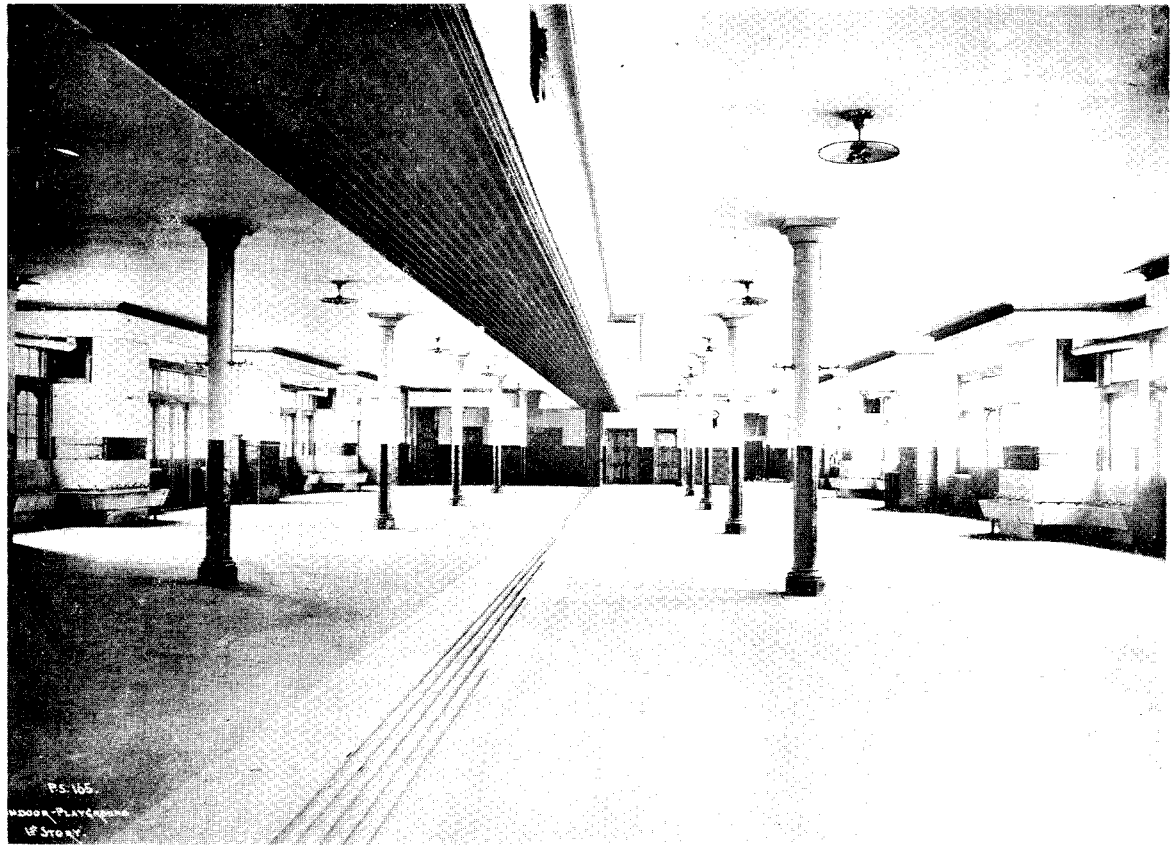
As is well known, public education in the United States is almost entirely the concern of the individual State, not of the Federal Government; it is regulated almost entirely by State laws. The various systems possess much in common, and the similarity between them is very close in most respects in the North Altantic and North Central States. The unit of

* To give a fair basis of comparison I have excluded schools of grade 0—that is, schools with an average attendance of less than 15, in which there is no fixed salary, but a capitation of £6 per pupil.

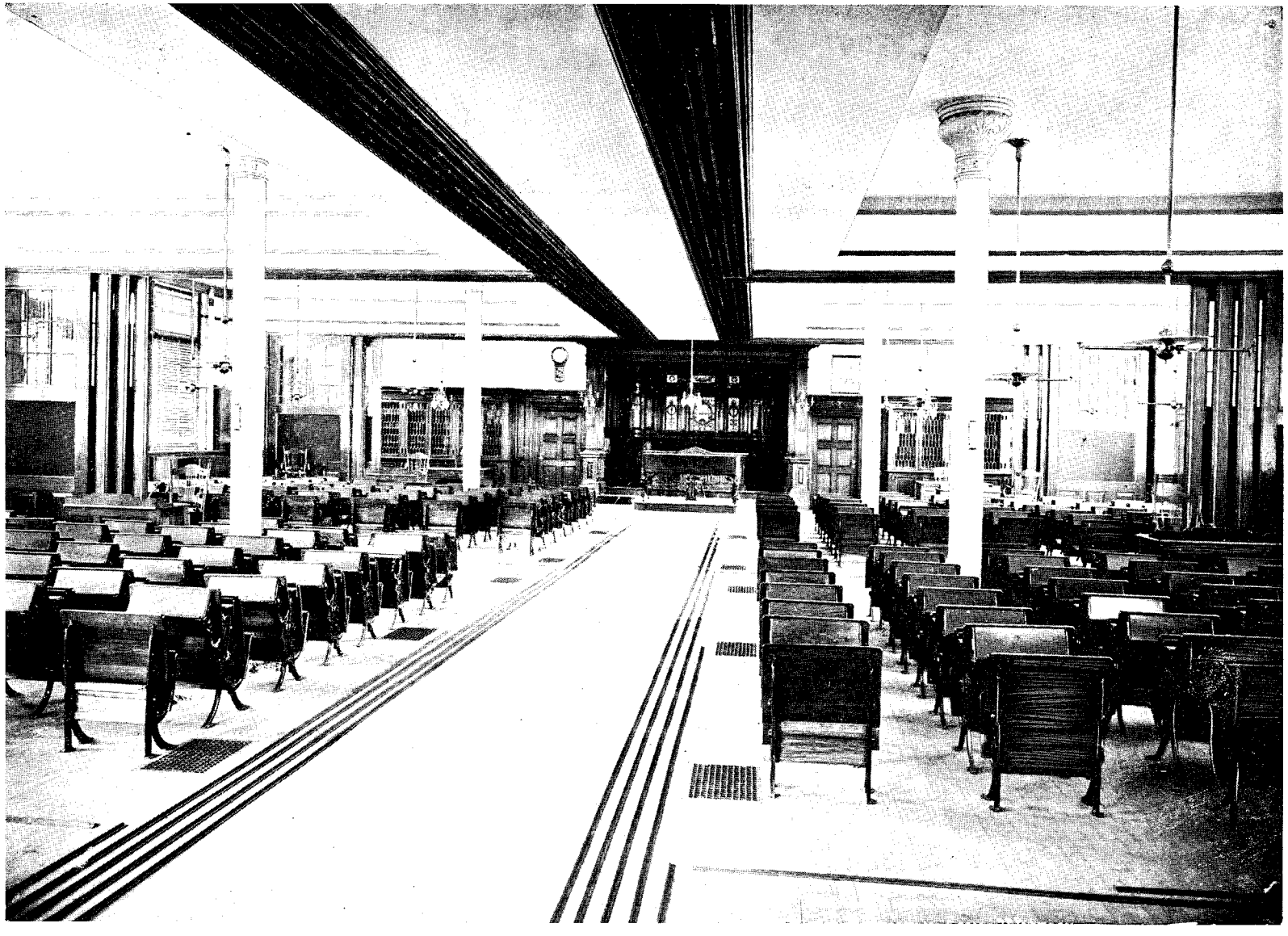
An Elementary School in New York City.

Built on the H plan; the two ends abut on two parallel streets; has roof playground; has 1,824 pupils on register.

Physical Drill on the Roof Playground of a New York Elementary School.



Indoor Playground of a New York Elementary School.
It can be divided into two, for girls and boys respectively.



ELEMENTARY SCHOOL, NEW YORK.
which can be divided into eight class-rooms and a central corridor by means of sliding partitions.

administration for nearly all parts of the system, except university education, is the city or county; and by this local authority most of the cost of education is met. Although an urban area, New York may be taken as a fairly typical example to illustrate the administrative system. The most prominent figure in the New York Board of Education (or in any other city or county) is the Superintendent of Schools. Either by himself, or in conjunction with the Board of Superintendents (which consists of himself and his associate City Superintendents), he possesses most of the powers and duties which in New Zealand are distributed among the Chairman and the Secretary of the Education Board, the Inspectors, and the Inspector-General of Schools; in fact, he exercises some of the powers here belonging to the Minister, or even the Governor in Council. He is appointed for six years, and for that time exercises almost autocratic rule; he assigns the duties of the associate City Superintendents; he allots the District Superintendents to separate districts or to special duties; he is a member of the several Boards and Committees, and chairman of all except the Board of Education and the Board of Retirement; he enforces the compulsory-attendance law; he appoints and dismisses the school-attendance officers and the clerical staff of his office. The Board of Superintendents, of which the Superintendent of Schools is chairman, practically establishes schools, kindergartens, and special departments, increases or decreases the number of classes in schools, determines the licenses and appointments of teachers; it ascertains the fitness of teachers for promotion or increase of salary, and grants leave of absence to teachers; it determines courses of study, issues syllabuses, and prescribes text-books. Many of these acts it performs nominally in the form of recommendations to the Board of Education, and others are subject to the confirmation of the Board, but the practical power rests with the Board of Superintendents, especially with the Chief Superintendent. The District Superintendents, twenty-six in number, are appointed by the Board of Education, on the nomination of the Board of Superintendents, for a term of six years; they perform, under the direction of the Chief Superintendent, duties very similar to those of Inspectors of Schools, except that they enforce the compulsory-attendance laws, and attend the meetings of the Local School Boards, which resemble School Committees. The Board of Examiners consists of the Superintendent and four other persons appointed on his nomination by the Board of Education, for six years; it holds such examinations as the Superintendent may prescribe, and grants licenses to teachers. The salaries of these thirty-nine executive officers, together with those of two medical officers, amount to £44,782 per annum—an average of nearly £1,100 a year.

The population of New York in 1906 was 4,152,860; the net enrolment in all the public schools (kindergartens, elementary schools, high schools, training-schools, truant schools, and nautical school) was 680,322, or 16·4 per cent. of the population. (The corresponding figures for New Zealand are 149,610 or 15.6 per cent.; Switzerland, 614,582 or 17·7 per cent.) The average attendance is 89 per cent. of the roll-number.

There are 510 public schools in the city—namely, 3 training-schools for teachers, 19 high schools and high-school departments, 485 elementary schools (including kindergarten schools and departments), 2 truant schools, and 1 nautical school. The three training-schools have a staff of 71, and 1,217 students.

The elementary schools and kindergartens have an enrolment of 545,420 (kindergartens, 15,609); they are staffed by 13,091 teachers, of whom 12,005 are women. The ratio of women employed as teachers in these schools to the number of men is as 1,105 to 100 (in New Zealand, in all schools, except those of Grade 0, there are 124 women for every 100 men); out of 416 principals of elementary schools, 211 are women. The average number of pupils to a class in the elementary schools is 43, in the kindergartens 28. In the public high schools there is an average register of 21,493 pupils or 51·8 per 10,000 of the population (New Zealand 72·7, and Switzerland 203·1 per 10,000); the staffs consist of 990 teachers—472 men and 518 women; the number of pupils on the register to each teacher is on the average 22 (New Zealand, 21). In addition to the staffs of public schools named above, there are 17 directors and assistant directors, and 344 teachers of special branches, 255 of the latter and 8 of the former being women.

The three training-schools have a total of 1,217 student-teachers (14 men and 1,203 women), with a staff of 68 instructors.

The cost of the education system of New York, including the elementary and high schools, and the training colleges for teachers, but exclusive of special schools such as the parental schools, is £7,149,600, which shows an expenditure for salaries of teachers of 16s. 9d. per head of the population; for other expenses of maintenance of 4s. 10d.: that is, the total cost for the

maintenance of the schools is £1 1s. 7d. per head of the population, while the expenditure for new buildings is 12s. 10d. per head. The figures are those for the year ending 31st July, 1906. The large amount spent on new buildings is due to the efforts made to supply the great deficiency of accommodation in elementary schools, which for many years compelled the authorities to double-bank the schools, using the same buildings for two lots of children each day.

The corresponding figures for New Zealand are, for all expenses of maintenance, 17s., and for new buildings, 1s. 2d. per head of the population.* Taking all the New York schools named, the cost per head of the average roll was £12 11s. 10d., and the cost per head of the average attendance, £14 3s. 2d.; in New Zealand it was £5 15s. 6d. and £6 15s. 5d. respectively.

The compulsory school age in New York is from 8 to 14, the age of beginning the primary-school course being thus very high, two years higher than in Switzerland, and one year higher even than in New Zealand. There is, however, a movement on foot to lower the compulsory age of entrance to seven or six; it will probably be lowered to seven, as the financial and other difficulties involved in providing the additional accommodation that would be rendered necessary by a reduction to six are very great.

The proportion of pupils in the eighth or highest grade is 5·3 of the total roll-number; in New Zealand the number of pupils in class VI forms 8·2 of the roll-number, and, exclusive of those in the secondary departments of district high schools, the pupils in the classes VI and VII together are 10 per cent. of the total roll—nearly twice as high a proportion as is found in the corresponding classes of the New York City schools. It must be remembered, however, that we have not here the constant influx of more or less illiterate foreign immigrants that in the American city lowers the standard reached by so many of the pupils. The serious character of the problem created by the continuous admission of large numbers of alien children may be realised from the fact of which I was informed by the principal of a typical large elementary school in the south-east of Manhattan, that more than half of the new "admissions" last year could not speak English when they entered the school, or could speak only a few words. The difficulty of dealing with such an element has put the teachers on their mettle, and the result is that the skill displayed in most of the schools in the teaching of English would afford an object-lesson to teachers in any part of the world; it has even reacted upon the methods used in teaching children from English-speaking homes, who in all the lower grades are taught in separate classes. The cultivation of oral speech, which is so prominent a feature in all the schools of Continental Europe, is equally emphasized here. Common things coming within the daily observation of the children, simple domestic operations performed by the children in the school kitchen, handwork of various kinds, pictures, toys, and games are all employed as means to make the children speak English clearly and readily, and are also so chosen and arranged as to make them realise the most important domestic and civic duties, and their great privileges as American citizens. The education they receive is not only thorough, but natural, human, and home-like, although perhaps it may be difficult to understand the appropriateness of the last epithet when applied to the methods of a school containing, say, 2,000 to 3,000 children; it is, nevertheless, strictly true. The consequence is that the school-teacher is universally respected, and, indeed, there are quarters in the city where it is said to be scarcely safe for a policeman to venture alone, but where the teacher is welcomed as a ministering angel.

Throughout the whole programme of the school work there is seen the influence of the ideas which are to be seen in their most pronounced form in such schools as the Horace Mann schools, described elsewhere in this report. True, the special methods based on those ideas are not carried out to the same logical extreme in the ordinary elementary schools; but all the teaching is intensely real, practical, natural, and consequently full of interest.

The school buildings are extremely good and often costly, sometimes passing the boundary-line in the direction of extravagance. The influence of the special medical officers of the Board of Education is shown not only in the excellence of the medical inspection of the pupils—so far as it has been possible to carry that out in so vast a population—but in the almost perfect sanitation of the most modern schools. The illustrations will give some idea of the kind of school building most current to-day in New York.

Kindergartens.

"The Kindergarten," says Dr. Maxwell, "gives right direction to the child's self-activity at his most plastic age, and introduces him in a happy

* The cost of the education system of Boston in 1906 was for all expenses of maintenance £1 4s. 6d., and for new buildings 6s. 11d. per head of the population.

way to the discipline of the school. The growth of the kindergarten in our public schools has been both rapid and steady. And yet there are many schools which have as yet no kindergartens . . . . There are thousands of children of kindergarten age who would be much better off in public-school kindergartens than they are on the streets or even in their own homes. ["Kindergarten age" in New York means from five to six.] It is very clearly the duty, therefore, of the educational authorities to provide kindergartens at the earliest possible moment in those schools which are not so provided."

School Excursions, &c.

In many of the schools the regular school exercises are varied from time to time by excursions to parks, gardens, museums, aquariums, manufacturing establishments, and to places and buildings of historic interest. These excursions are usually made after 2 p.m., so that, as the school day generally ends at 3, the pupils lose but one hour of the school session. The purposes of the visits are explained in advance, and suggestions are given as to the best way to utilise time. The teachers accompany their pupils, and direct attention to what is specially worthy of observation. Later, in oral or written form, reports on what has been observed are called for. In this way the work in nature-study, geography, history, and language is made interesting and profitable; the powers of observation and expression are greatly strengthened; and school life is made more real. (Eighth Annual Report of New York Board of Education, 1906.)

Manual Training.

In the schools of New York manual training is well-nigh universal—at least in one form or another; but all schools are not provided with special rooms or appliances. The two main features of the work are (i) that it is not all postponed to the higher grades, but simple exercises in constructive work, and simple domestic operations are used even in the lower grades as affording the means and the opportunity of connecting the rest of the teaching with the concrete facts of life; (ii) that all through the school course, the manual work is used as an adjunct to the language work, which is regarded, as on the Continent of Europe, as the central feature of the school programme. As one of the Directors of Manual Work expresses it, "We have established a conviction that the child not only learns to do by doing, but learns to know by doing." The handwork is taken, not so much as a separate subject, or for the sake of the finished products, but as a road to knowledge, and the knowledge thus gained should be correlated with its other knowledge. In the upper classes, of course, the handwork becomes more specific in character. Of its value Dr. Maxwell has no doubt: "The usefulness of the workshop for boys and the kitchen for girls no longer admits of discussion; it is established by ample experience. The workshop cultivates accuracy, truthfulness, invention, and skill; it gives the boy the use of his hands and the use of tools; it teaches him the inherent dignity of labour, and shows him the abiding satisfaction to be obtained from skilful workmanship; it prepares him for mechanical pursuits if he is so minded; it increases his efficiency in life; and it enables the teacher to discover special aptitudes, if such aptitudes exist. The school kitchen is equally important for girls. Its lessons make for health and economy not of the student alone, but of the household of which she is or of which she may become a member. There is, perhaps, no part of our school machinery which has so great an influence for good in a social way as the teaching of domestic science."

The value of this work is further emphasized in the following extract from the report of Miss Mary E. Williams, Director of Cooking under the New York Board of Education: "The many by-roads of a girl's education lead, in the majority of cases, to the door of the home, and while each path has trained memory, judgment, or hand toward the making of a finer type of woman, we have been able to show and to teach her how those faculties that have become hers may be used and improved in the exercise of the ordinary duties of the usual day, and to inculcate a love and respect for the work which is her own. We realise that some of these girls may never be home-makers, but practically all will be a part of and an influence in some home, and we are sure that the lives and health of the little ones, who are next to make the membership of our schools, depend largely upon the ideals and ability of the pupils leaving us now. Nothing can ever be done later to compensate for the lack of intelligent care during the first five years of life, and as this care alone can lower its fearful death-rate (which the statistics of this city gave for 1905 as 24,539), it is most encouraging to us all to know

that the graduates* have taken with them this knowledge directly applicable to the specialised duty of woman—care of children.

"They have it, further still, in their power to keep or aid in keeping a sanitary, beautiful, and economical home, and a nourishing, dainty, and economical table, that will protect and promote the health and comfort of the members of the household of whatever age they may be. They can deal with emergencies, such as slight or sudden illnesses, in a way made clear by the simple scientific truths they now possess; they can check the spread of contagious diseases, and assist in the prevention and cure of tuberculosis. They have left us, too, with the spirit and the gift of helpfulness to this generation and to those to come.

"In the scheme of correlation which underlies our present school system, we have put before them, in dictations, recitations (*i.e.*, lessons), and notes, English applicable to the needs of their domestic life. The vocabulary to which they have been accustomed with us, and the literature in which they have become interested, we believe will insure their co-operation in the advances developing about them, and will give them the pleasure of keeping intelligently abreast of their time in their own sphere.

"We have used history and geography to teach the evolution of the house and its furnishings, with the comparison of the household customs of the different nations as a background for their point of view in the development of a simple, harmonious taste.

"They have applied mathematics with us to the household details of measurement and expenditure, the latter having become in all reality a problem for the foreigner unaccustomed to our markets, and for every one, under the increased cost of living.

"The study of botany and bacteriology has given them a solid reasoning basis, when dealing with yeasts in bread-making, moulds in canning, malignant germs in uncared-for food, such as lurk in the uncovered milk and soup, even to the disease-danger in a dirty dishcloth, or an unclean refrigerator.

"Physiology and hygiene are the double foundation upon which each meal is planned and cooked, with regard to the age and condition of each partaker.

"Physics determines for us house-location; its plumbing, its heating, its ventilation, down to the economic trifles that as a whole constitute good management, such as the low flame which will keep water boiling.

"Chemistry has become so much a part of the theory back of each practical lesson that it belongs to every department of our work. It enters into the first lessons upon air and water, follows in the lessons upon cleaning, is the explanation of numerous facts in cookery, and in its application to digestion it determines the choice and preparation of food. In laundry-work it is an exponent of the dissolvents to be used or avoided. If our girls utilise all they have learned, we may say that they have become the crowning results of civics—good householders."

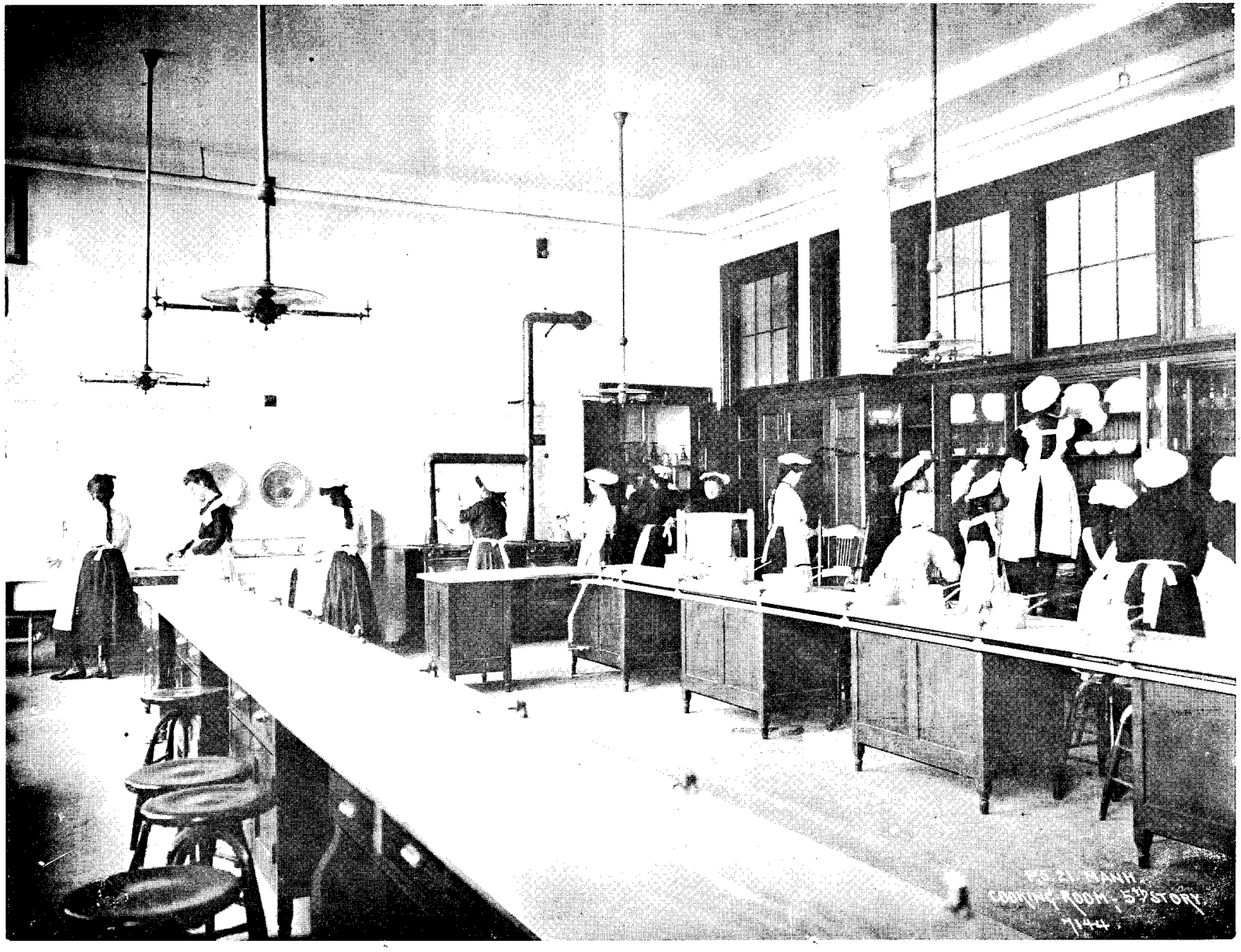
School Libraries.

New York has an excellent system of school libraries; these are generally arranged in departments—namely, school reference library, teachers' library, class reference libraries, and class circulating libraries, each class above the first grade having its own library. In the year 1905–6 four hundred and sixty-eight of the 485 elementary schools of the city had libraries; the total number of volumes was 509,965, and the total circulation was 5,964,442; the cost was borne by an appropriation of £5,544 from the city, and an equal amount from the State, all of which is by law expended for books. The expense of administration of the head library office was £942; in the separate schools the teachers act as librarians gratuitously.

It will be seen that the yearly circulation was nearly twelve times the number of volumes; this, it must be remembered, is for ten months only, the time during which the schools are open. The New York Public Library, with a million and a quarter volumes, had a circulation during the year of a little over four millions. Looking at the facts in another way, it may be said that on the average each adult in New York took out one book during the year, and each child in the elementary schools took out eleven books in ten months. This fact bears witness to the interest taken by the children, and also inferentially to the wise choice exercised in purchasing the books. The cost of the school libraries (for children and teachers) was 4d. per pupil, or a little over ½d. per head of the population.

The children are encouraged to speak and write in school about the books they have read. The Superintendent of Libraries says,—

* Those who have completed the school course.

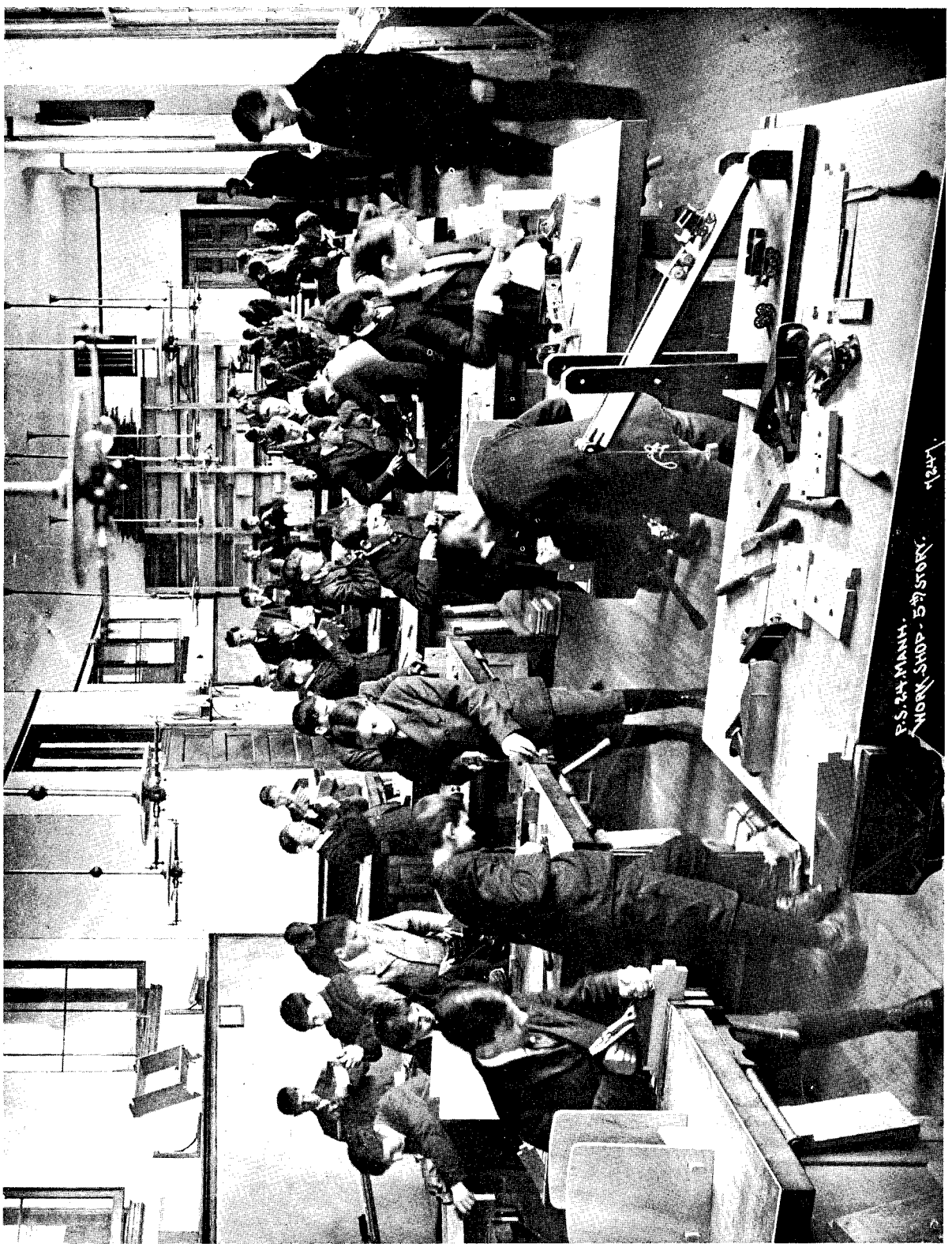


Cookery-room in a New York Elementary School.

All cooking is done by gas: small individual experiments made with gas rings on the tables.

New York Elementary School.

Demonstration lesson in domestic science. The drawings and demonstration work are generally done by pupils.



ELEMENTARY SCHOOL, NEW YORK.

Woodwork-room on fifth story. Many of the articles made illustrate other lessons.

"Since the opening of school in September many interesting book reviews and compositions on favourite books or authors written by pupils in the grammar grades have been received from teachers of English.

"This work, aside from its value as an exercise in English composition, penmanship, &c., usually gives us a very good idea of what the child gets out of the class library, and even in its crudest form, his written opinion often offers many valuable hints and suggestions to the selector of children's books. When a little girl says she likes a book 'because it had so much asking and telling in it,' we may be sure the book contains a minimum amount of description and a great deal of animated conversation.

"When a boy selects as his favourite 'The Minute Boys of Lexington,' because 'it is a very exciting book; it has something in every chapter that makes your blood tingle,' it is evident that the book offers as much in the way of action and interest as the cheap paper book of the news-stand, but we know it is a decided improvement over the latter as regards English and ideals.

"Another boy expresses his approval of a book 'because it is full of humour, and besides there is *not one word I do not understand.*' Again, 'My reasons for liking it are, first, it has not a dry part in it; second, it describes a sailor's life, his superstitions, and his love of danger.'

"Such recommendations to my mind outweigh a great deal of adult opinion on such matters.

"The amount of reading done by the pupils out of school hours is evident from the reported circulation. I hope from the reviews and compositions to collect soon some interesting statistics regarding the class and quality of the books read."

Museums.

I saw good museums in several American schools—nearly as good as the best school museums in Germany; but in one respect New York and Chicago are ahead of anything I have seen elsewhere—namely, in the excellence of the system of circulating collections.

That a great museum like the American Museum of Natural History should deem it not beneath its dignity to aid in this work for school-children is worthy of note: the parts played by that institution, by the New York Aquarium, and by the Bronx Botanical Garden in encouraging nature-study will be seen from the report which is printed in the Appendix.

Training-schools for Teachers.

The Teachers' College of the Columbia University, which is described elsewhere in this report, is a most excellent institution providing University undergraduate and post-graduate courses in education, suitable for the training of secondary-school teachers, of first assistants and principals of elementary schools, and of superintendents and other directors of education; but the course is too long, and the amount of theory included in it is too heavy, to suit the great majority of elementary teachers. If a shorter course is taken, the arrangements are such that the amount of practice obtained in teaching is regarded by the authorities as insufficient to train the students for the severe and varied demands made upon them in the large schools of the American cities. The State Normal Colleges, though giving a less severe course of educational theory than those connected with the University, still devote too little time to the actual observation and practice of teaching.

Accordingly, like Chicago, the New York Board of Education has its own training-schools for teachers (three in number), in which the entire time of the student for two years is given to learning the theory of teaching, to observation, and to practice. No student is admitted who has not demonstrated through attendance at institutions of learning and by examination that he has received a sound and extensive liberal education. It is considered that the work of training teachers should be under the direction of the Board of Education and under the supervision of its officers, to the end that the methods of training may be in harmony with the policy and aims of the schools. The minimum qualification for entrance is a four-year secondary course at a recognised high school, in which certain specified subjects must be included—namely, *English*, taken continuously during the four years, 494 "hours" (*i.e.*, recitation or lesson periods—each 45 to 60 minutes); *History* (Ancient, English, and American), 380 hours; *Mathematics*, 380 hours; *Science*—biology and physiology 190 hours, physics 190 hours, total 380 hours (the laboratory method of teaching these subjects is prescribed); *Foreign Languages* (Latin *or* French *or* German), 380 hours; *Drawing*, taken continuously throughout the four years, 228 hours; *Vocal Music* (adequate instruction in sight singing and in common technical terms), 152 hours; *Physical Instruction*, 152 hours. The number of hours required

in each subject is based on a school year of 38 weeks as a minimum. The total number of hours required is 2,880, so that the high-school pupil who wishes to gain admission to a teachers' training-school must make up the balance by taking one or more optional subjects; he commonly takes some branch of handwork and geography, or a second foreign language. The theoretical part of his training-school course includes elementary logic, child psychology, the principles and history of education, and the methods of teaching the various subjects, which he revises with that purpose in view. Not less than sixty minutes per week during the first eighteen months is devoted to the observation of work in the model school; part of the time set apart for the study of methods of teaching a subject is devoted to giving lessons in that subject to a group of pupils selected from the model school. The last six months of the course is devoted to practice-teaching under working conditions. Although the model schools are large, yet, as there are 642 student teachers at the Brooklyn Training School and 430 at the Manhattan Training School, it is evident that the practice during the last half-year must be taken elsewhere; it is taken at ordinary elementary schools associated with the training-schools, which, in order that there may be harmony in methods and aims, are placed under the direction of the principals of the training-schools. In connection with the Brooklyn institution (the one I visited) there are six such associated schools, and, to complete the connection between them and the central institution, there are six critic teachers (officers of the latter) whose sole business it is to guide and help the student teachers in their practice, and to assist the principal of the training college at the end of the period of probation in determining whether she should advise the Board of Superintendents to issue teachers' certificates to the various candidates.

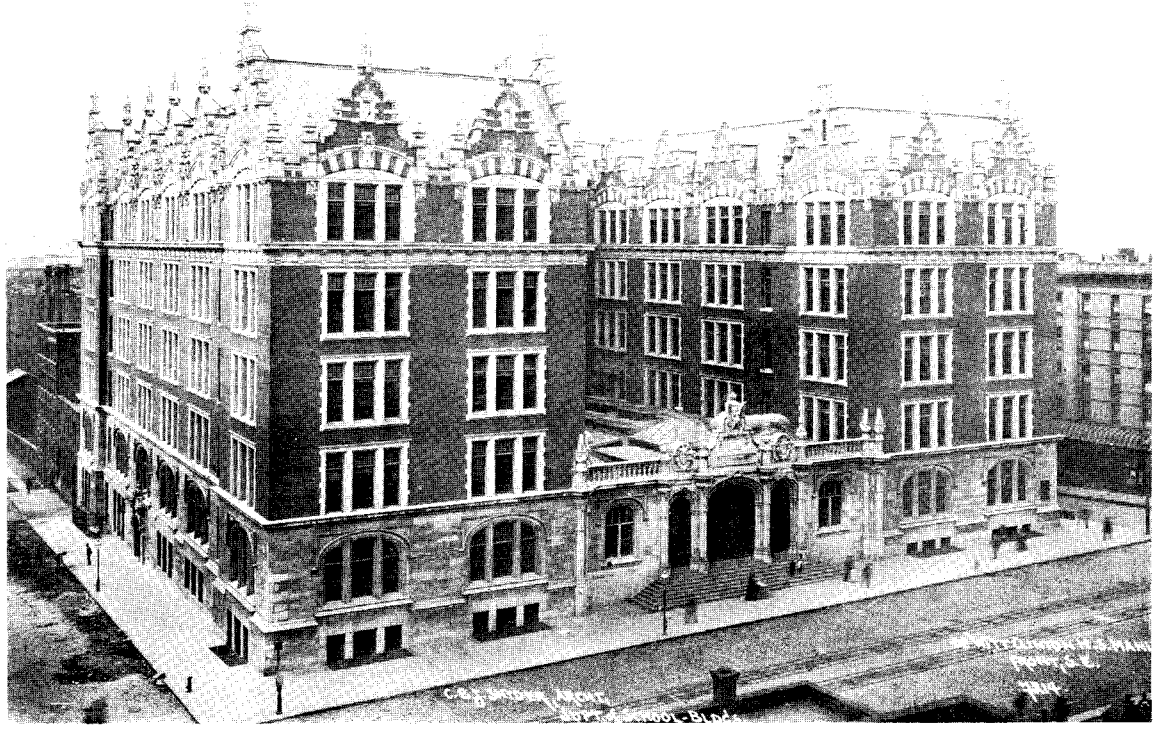
Each student is assigned for the six months to a particular associated school, but receives no pay. If at the end of that time she has not given sufficient evidence of skill, she may be assigned for a second period of six months to gain more skill by practice—still without pay. If her work is then still unsatisfactory, she must seek some other field of employment; often she goes to take charge, as an uncertificated teacher, of some country school in the Western States. The observation-work at the Brooklyn Training School is particularly well planned and carried out; the head of the institution is a lady with a deep knowledge of education, vast organizing powers, wide sympathies, and great personal charm of manner—Miss Emma L. Johnston. There were in 1906 two men students and 640 women; I believe two or three of the 32 instructors and critic teachers are men, all the rest are women.

The programme of work—theory, observation, and practice—will be found in the Appendix; it is well worthy of the serious attention of the authorities of our training colleges.

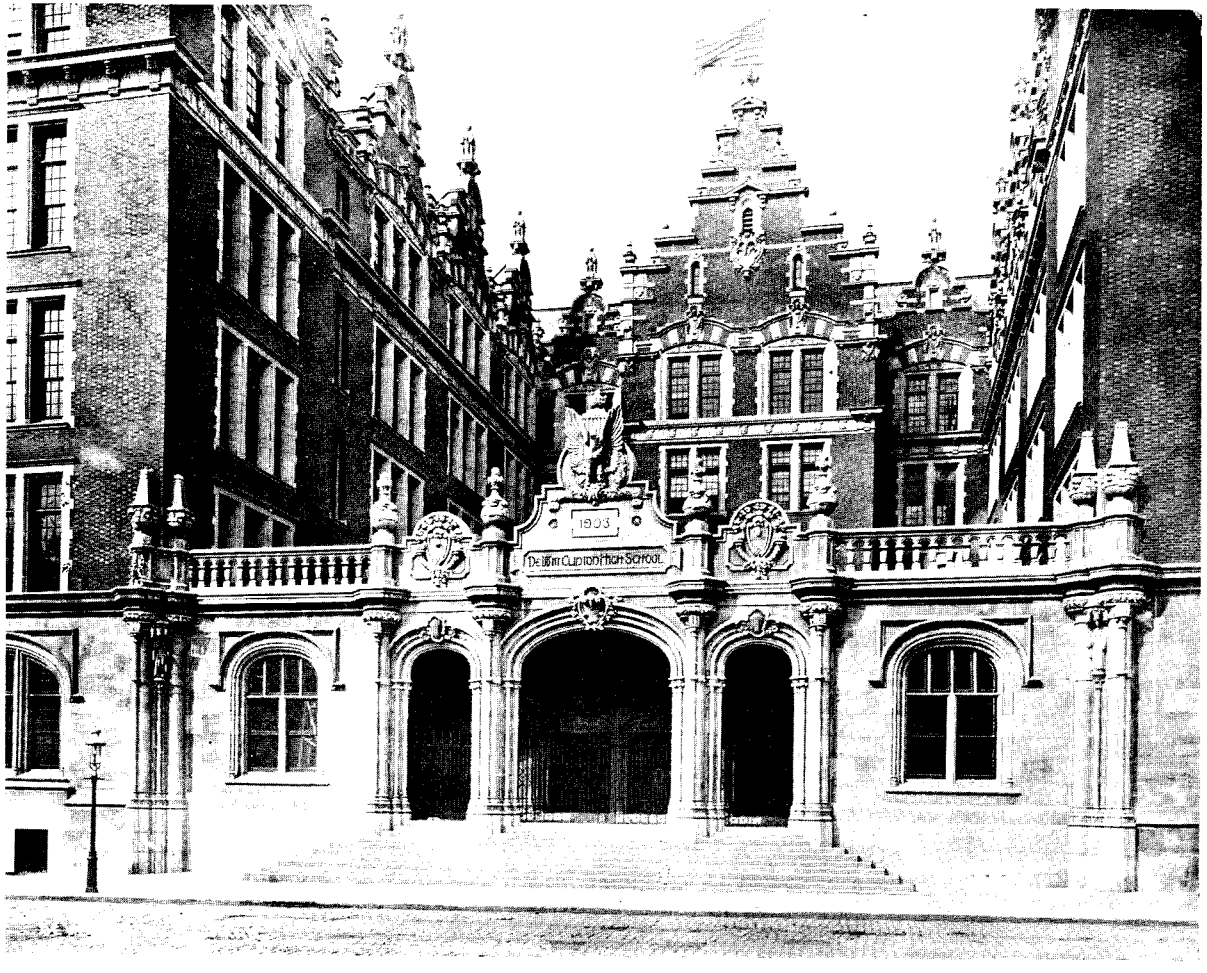
High Schools.

The public high schools of New York provide in general for a four-year course. There are three kinds of high schools: (i) commercial high schools, two in number, for boys only; (ii) manual-training or technical high schools, one for boys, one for girls, and one for both sexes; (iii) the ordinary high schools, two for boys, two for girls, and ten for both boys and girls. But many of the ordinary high schools make provision for a more or less complete commercial or manual-training course, or for both courses, as well as for a general programme; indeed, the tendency is for the one high school to undertake all three kinds of work. It is argued with some force that a parent often cannot tell in what direction the special aptitudes of a pupil lie until he has been for some time at a high school, and the total dislocation of work that takes place if he has to be removed from one kind of school to another is avoided by teaching the various branches at the one school; if, then, he has to change his course, it means only the alteration of certain classes in his programme, and he is not disturbed by being shifted into totally new surroundings. The wisdom of the plan on which most of our secondary schools in New Zealand are being organized is thus borne out by the experience of America, for the practice in New York is virtually followed to a large extent elsewhere in the United States.

No money has been spared upon the buildings and equipment of the high schools recently erected in New York. The buildings are not only commodious and excellently adapted for their purpose, but often have great architectural beauty. The illustrations of the De Witt Clinton High School given in connection with the text will serve as an example of modern high-school buildings. This is a high school of the general type, with strong classical bias, but giving at the same time in its curriculum a much wider

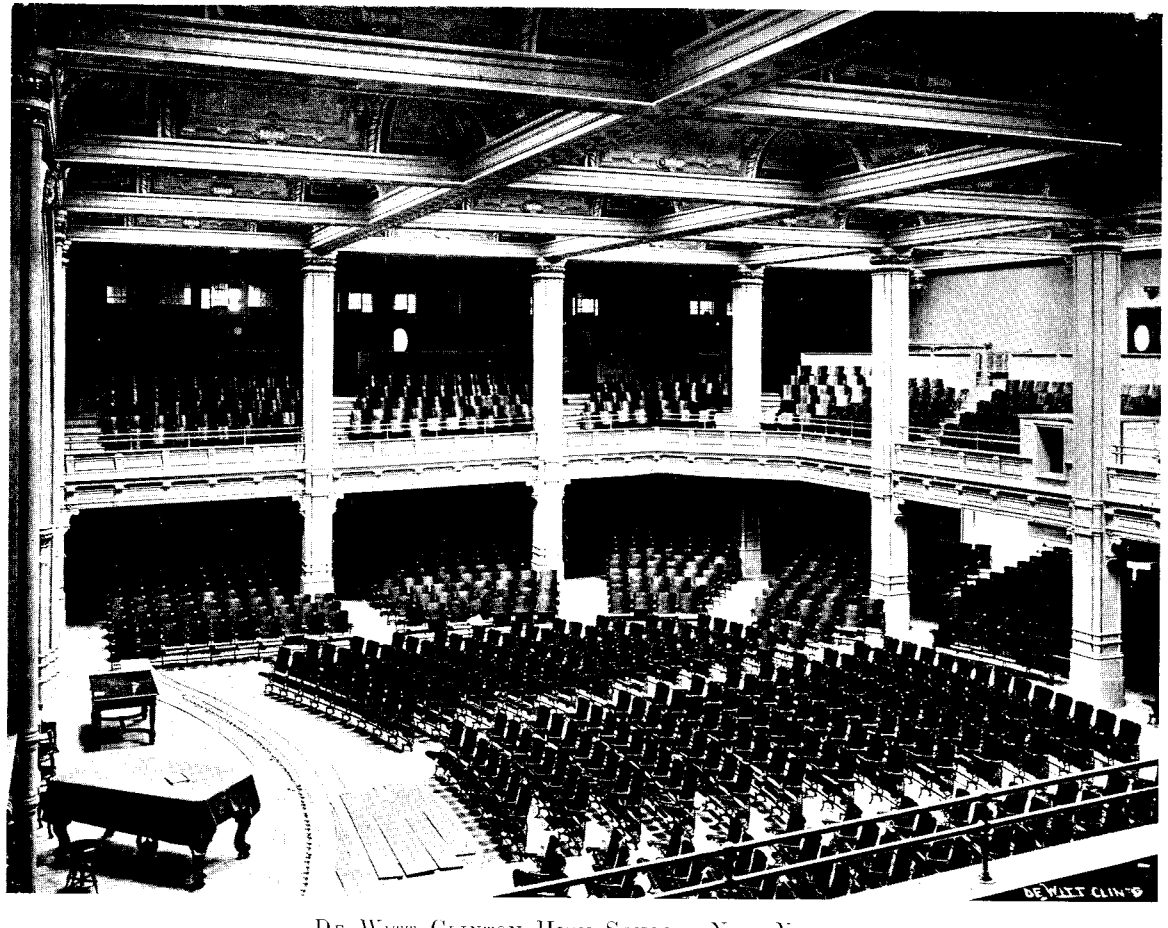


De Witt Clinton High School, New York.
General view; 1689 boys.



De Witt Clinton High School, New York.
Main entrance.

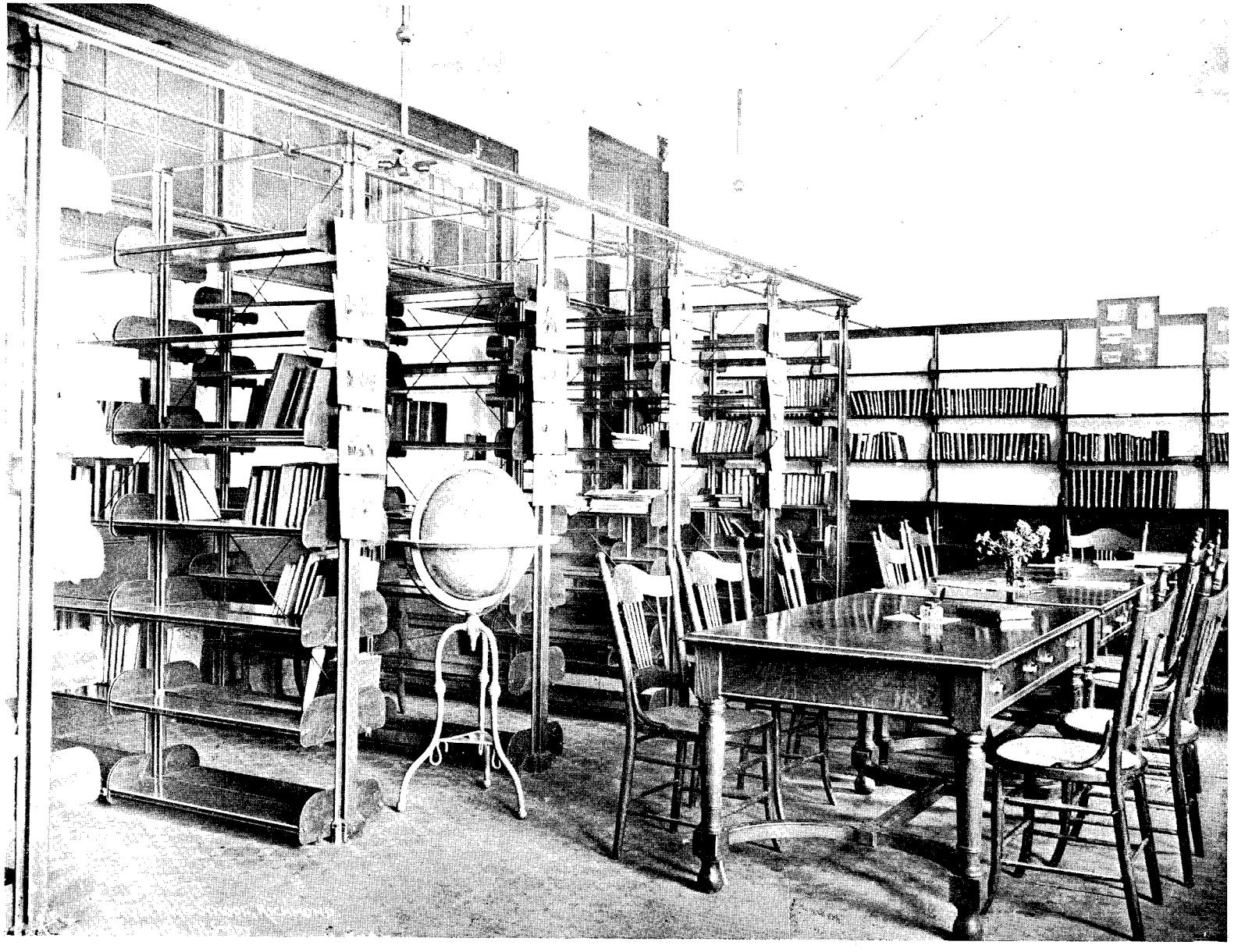
HALL OF THE DE WITT CLINTON HIGH SCHOOL, NEW YORK.



De Witt Clinton High School, New York.
Assembly Hall.

MORRIS HIGH SCHOOL, BRONX, NEW YORK.

A suburban high school with 791 boys, and 1,550 girls, of ages 14 to 18 or 19. The courses of instruction include general, technical, and commercial education.



Curtis High School, Richmond, New York.
Part of the library formed for the use of pupils.

Fig. 16

choice of subjects than would be afforded in an English or German secondary school of equal standing. The illustrations of various laboratories and workshops in the Brooklyn Manual Training High School will show the completeness of the equipment of the school for its special aims. The new buildings of the Stuyvesant High School (the manual-training high school of the Borough of Manhattan) are still more elaborate, and the equipment is on an even larger scale than at Brooklyn. All instruments and machines are full working-size—that is, they are not mere laboratory models, but are similar to those actually used in machine-shops and manufactories, modified only in so far as it is necessary to adapt them for the purpose of experiment and exact measurement.

This is the same principle as that to which reference is made in the note upon the electrical engineering department of the Oundle Grammar School, England. In England the usual practice, even in well-equipped secondary schools and technical schools, is to employ only model machines adapted to laboratory work, and the exceptions to that rule are few and far between; in America, it is held that experiments with full-sized machinery give the pupils much more real and correct ideas of the underlying principles—they have nothing to unlearn, the work is much more thorough, and at the same time the students gain an insight into the economic conditions of modern industry which could not be obtained if models only were used. The same feature is prominent in the Massachusetts School of Technology (the "Boston Tech."), where the working models originally employed have been replaced by up-to-date full-sized engines and instruments. This policy entails a heavy expenditure, which would not be warranted unless the number of students were large. The Stuyvesant High School, built for 2,000 pupils, and having at the time of my visit nearly 1,500, will have cost, when completed, one and a half million dollars (say, £300,000) for buildings and equipment. It is evident that it will be very many years before we in New Zealand have either the need or the means to establish such an institution at that. What we have to do, as far as any single line of work is concerned —engineering, for example—is to maintain one institution of the highest grade in as high a state of efficiency as our means will allow, and to send thither by means of scholarships and bursaries those who by earlier success have shown themselves capable of receiving higher training. This is all that even Switzerland with three and a half times our population attempts; it is much better, as well as more economical, than attempting to run a third-rate engineering college in each of the provincial towns. But each of the latter should have a good technical school for the training of apprentices and foremen, and of those who may afterwards proceed to the institution of higher rank. The larger secondary schools could, too, do much in giving suitable preliminary instruction to those who have a bias towards mechanical and technical pursuits; and the experience of the New York high schools, and of such schools as Oundle and St. Dunstan's College in England show that this may be done without lessening the amount of literary and general culture that such boys receive. Similar remarks apply to the secondary education of girls, with whom, especially in America, a sound course in domestic science naturally takes the place of the pre-professional studies of the boys.

The same idea of "reality" dominates the methods of the New York High School of Commerce: the pupils learn business methods almost in the same way as if they were in a large office, and much more thoroughly than they would in most offices. Their desks resemble not the ordinary school-desks, but the best types of desks to be found in the great commercial houses of the city. At the same time, their attention is constantly directed to the economic and social principles on which the various processes are founded: by inquiring into the social needs supplied by the working of the commercial system—how this or that makes for an advance in civilisation, and what purpose in the needs of society is served in this or that manner—they gain a considerable amount of wide human culture. Nor is pure literature or science neglected; the time devoted to these subjects is as great as, and the standard reached is higher than, in most of our schools.

The American schoolmaster is not afraid of losing breadth in education by specialisation of this kind; and he does not lose it either. We are often so afraid of the bogey of specialisation, that in order, nominally, to give a wide culture, we teach all boys Latin grammar—just as we should if we were going to make classical specialists of them.

In the short account of the New York teachers' training-schools given in this report will be found a summary of the general high-school course through which student teachers must pass before admission. An ordinary pupil has a somewhat wider choice, but the programme given will afford a

good idea of what the general high-school course is like. In the commercial courses Latin and Greek are not taken; English, one modern language (German, French, or Spanish), and physical training are compulsory throughout the course; mathematics, science, music, history, and drawing are compulsory, but not during all four years; no commercial subjects may be taken in the first year, but they increase in amount as the course proceeds —including stenography and typewriting, commercial law and geography, economic and industrial history, additional English and business correspondence, &c. These programmes, with corresponding information about the technical high schools, will be found in the Appendix.

"Graduation" from a high school—that is, the "leaving certificate"—is granted on credits given for work done throughout the four years, supplemented by examinations held by the teachers themselves. No certificate of this kind is given for a shorter course, although in some cases a pupil who has satisfactorily completed at least two years' work in a high school may obtain a certificate to that effect.

The graduation certificate qualifies for admission to a university or other higher institution, or to many banks and other commercial houses (when they cannot obtain university graduates, for whom the business men of America are in an increasing degree showing preference).

The freedom from outside examinations which marks secondary education in America, almost as much as it does in Germany and elsewhere on the Continent of Europe, is an undoubted gain, and I am sure the introduction of such a system in New Zealand, properly safeguarded, would be of great benefit to all concerned.

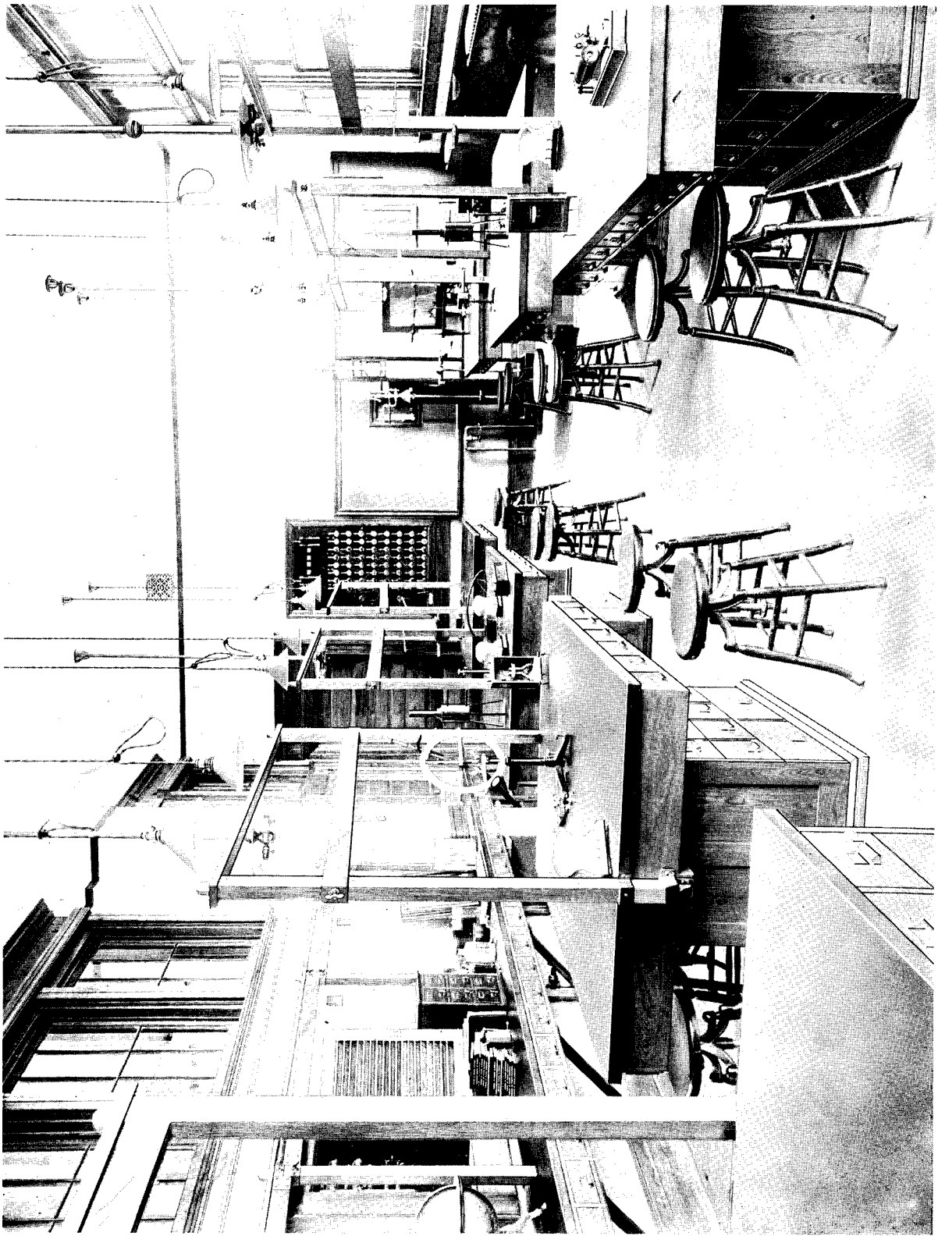
A weak point in the secondary-school system of New York is indicated by the shortness of the time during which most of the pupils attend the high schools. Of the 24,096 pupils on the registers on the 30th June, 1906, 11,784 were in the first year of their course, 6,795 in the second year, 3,640 in the third, and only 1,877 in the fourth year; or of the total roll the percentage proportions were—first year, 48·9; second year, 28·2; third year, 15·1; fourth year, 7·8. In other words, the average length of stay of each pupil in the high schools was less than 1·83 years.

The chief causes assigned for this state of things are,—

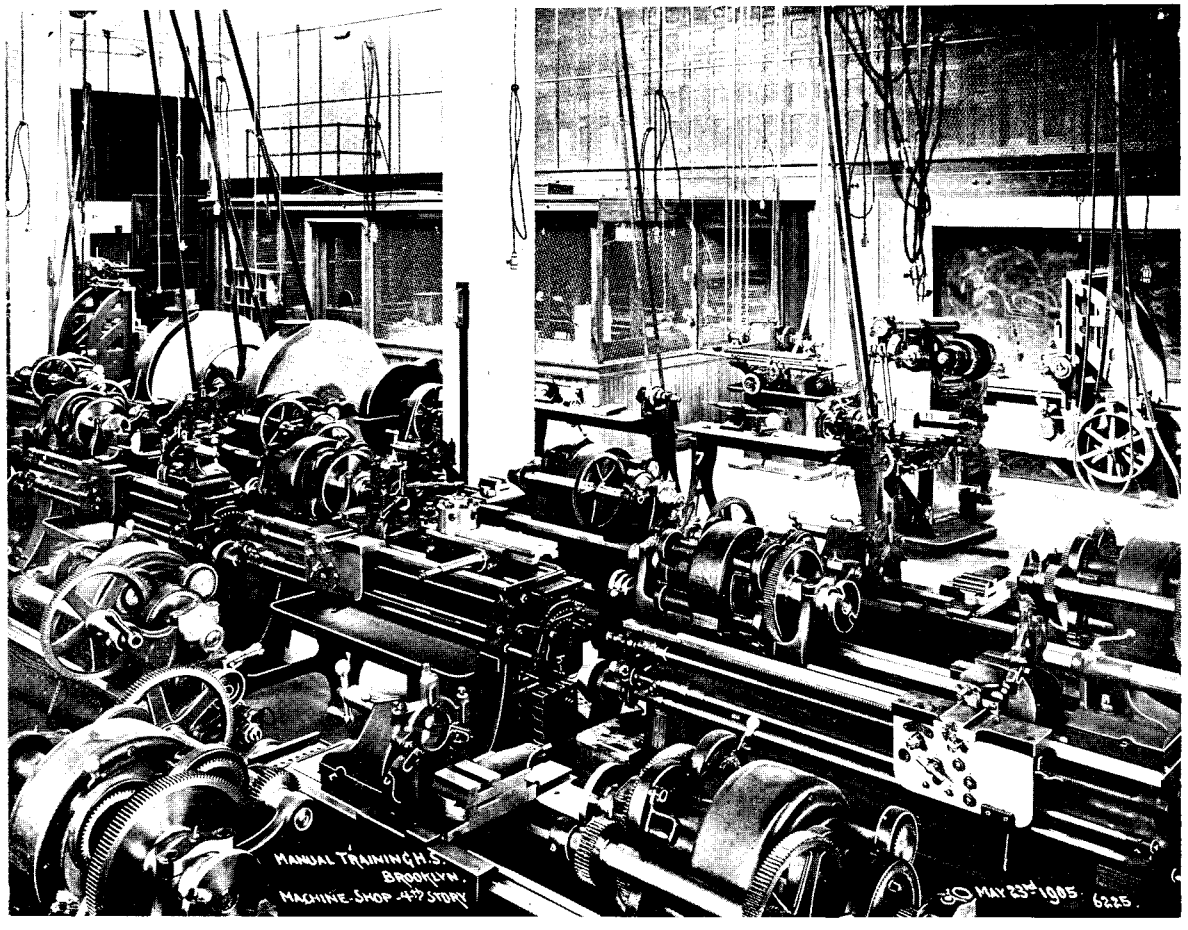
(1.) The want of capacity of some of those who enter the schools to profit by any kind of high-school training: these individuals should be encouraged to leave.

(2.) The neglect of principals and teachers to guide pupils, in selecting their high-school courses, along the lines of their special aptitudes. "Before we can say definitely that a boy is too dull to pursue high-school studies," says the report of the special Superintendent of High Schools, "we must know that he has failed in hand-work as well as in head-work, in science as well as in language. Hence I say that the number of students who are so dull is very few . . . . A boy who has shown special ingenuity in the use of tools in the workshop class in the elementary school should be encouraged to go to the manual-training high school; the boy who has evinced ability in literature, to the regular high-school course, and so on."

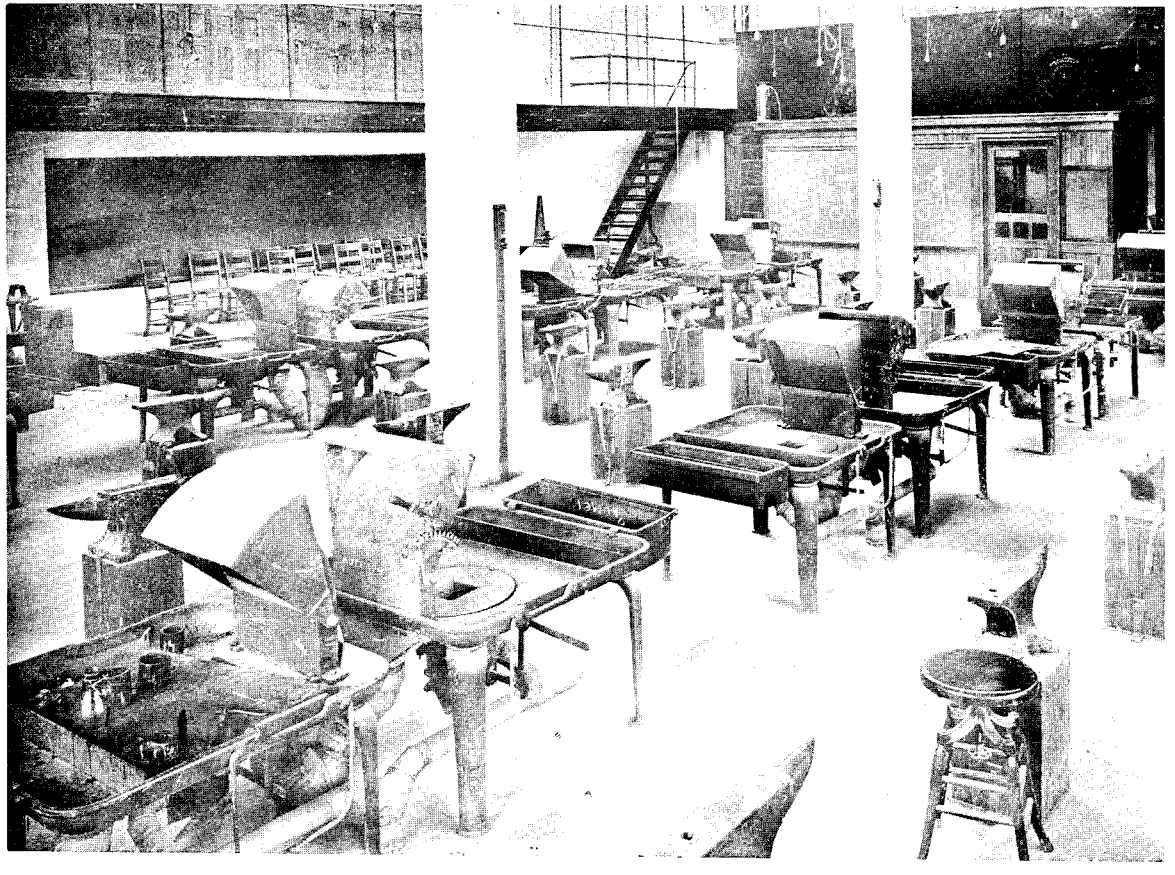
(3.) Excessive home work. "When four teachers compete for the home-study time of the pupil there is always the danger that the pressure will be excessive. Such pressure unfortunately bears more heavily on girls than on boys. Because they are so conscientious, girls will try to accomplish all school tasks assigned them. Boys who are given too much to do simply do not do it, and rely on their wits to get through somehow. Hence this foolish pressure falls most heavily on those who are least able to bear it. *It is the business of the principals of high schools to prevent such pressure.* . . . Add to this that many of the children who attend high schools have no place to study their home lessons except among the noises and confusion of a room which often serves all the purposes of a dining-room and kitchen as well as a living-room for a large family, and we may form some faint idea of the difficulties which confront the child when he enters the high school. The difficulties seem to him insurmountable. Is it any wonder that he begs his parents to let him leave school and go to work?" The remedies proposed are: first, to lessen the amount of home work, especially in the first year, when most pupils leave; secondly, to give each pupil advice and assistance, not as a unit in a class, but as an individual, a person; thirdly, to keep the high-school buildings open, under the supervision of the teachers in turn, each afternoon except Saturday till 5 o'clock, and on Saturday till noon, so that pupils may be able to prepare their lessons, if their parents so desire it, under advice and direction (each pupil who remains should be required to take at least half an hour's exercise in the gymnasium or otherwise). This is the plan adopted in English girls' high schools: the obvious objection to it is that



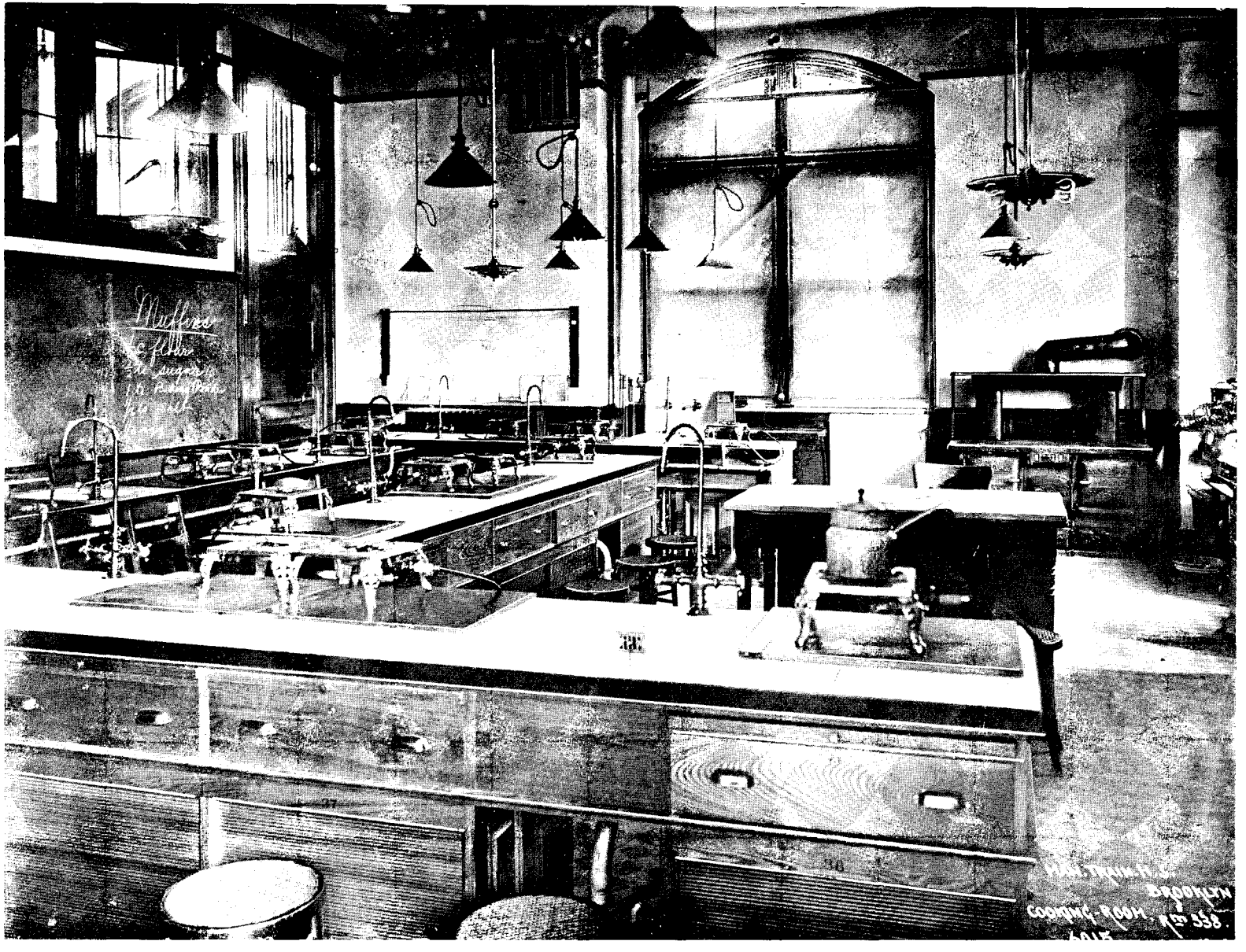
Brooklyn Manual-Training High School, New York.
A physical laboratory.



MACHINE-SHOP, BROOKLYN MANUAL-TRAINING HIGH SCHOOL, NEW YORK.
The machines are full-sized, not mere working models.



Forge-room in the Brooklyn Manual-training High School, New York.
The forges, though simple, allow actual workshop practice to be got.



Brooklyn Manual-training High School, New York.

Cookery-room. Girls of 14 to 18 or 19 receive a secondary education, with a bias towards domestic science.

it seriously interferes with organized games, such as cricket and football, which form by no means an unimportant part of the school life of every good British boys' school.

Evening Schools.

According to the Chief Superintendent's report, "the results of the evening-school work in New York are distinctly disappointing. The enrolment is large, it is true; but the average evening attendance is comparatively small. Thousands of students enrol, but a comparatively small number persevere to the end. To judge by the attendance, only about one-half the students attend more than half the number of sessions. Consequently, not more than one-half derive substantial benefit from their evening-school work . . . . There can be no question as to the benefits derived by those who attend regularly."

There are thirteen evening high schools—five for men, five for women, and three for both sexes; there are seventy-seven evening elementary schools—thirty-three for men and boys, twenty-five for women and girls, and nineteen for both sexes. In the evening high schools there were enrolled during the year 1905–6, 21,307 pupils, but the average register was only 9,903; in the evening elementary schools the total enrolment for the year was 85,743, and the average register 42,137. The total enrolment in the evening high and elementary schools was therefore 107,050, and the total average register 52,040. These figures show that very many pupils remain only a short time, their places again being filled by others, who in their turn give way again to others.

The average attendance in the evening high schools was in the same year 7,016, and in the evening elementary schools 28,822; total in all the schools, 35,838—that is, 69 per cent. of the average register, or 33·5 per cent. of the total enrolment. For each ten thousand persons of the population of the city, there was an average attendance at evening schools of 86·3. The nearest corresponding figures for New Zealand and Switzerland (attendance at continuation and technical schools and classes, Tables A1 and A2) are 188·1 and 304·8 respectively.

Included in the above figures are the pupils attending two trade schools, held, one at the Manual Training High School of Brooklyn, and the other at the Bryant High School in Long Island City; these were chosen because they were more or less equipped for the work intended. There were registered in these two trade schools 2,430 pupils of both sexes, with an average attendance of 835. "The idea of the trade school is to teach young mechanics not only the *how*, but also the *why*; to combine practice with theory; to give men who know only part of their trade an opportunity to acquire a wider knowledge, to broaden their mechanical training, and thus to make them more efficient workmen and therefore more intelligent and useful citizens. We need, at the present time, trained mechanics who are able to understand and to handle our intricate machinery." The subjects taught were the following: Carpentry and joinery, cabinetmaking, patternmaking, blacksmithing, plumbing, machine-shop practice, printing and typesetting, electric wiring and installation, industrial chemistry, applied physics, mathematics, mechanical drawing, architectural drawing, dressmaking, millinery, and domestic science. The District Superintendent in Charge of Evening Schools recommends the addition of classes in English and in physical training, and of classes in sight singing or choral work, which the educational authorities of New York encourage everywhere, both for its social and for its culture value.

A leading American economist has made the startling statement, which no one has attempted to contradict, that, of the enormous exports from the United States, not a single article is sold on account of its superior workmanship; and it is the realisation of this fact that, among other things, is now stimulating the authorities to supply one of the great needs of the nation—good trade schools. With some qualification, the remark quoted above may be to some extent true of the exports from New Zealand—their good quality in many cases being due rather to the excellence of the natural conditions than to the trained skill of those who produce them. Whether this be a fair statement or not, it is quite certain that well-organized trade classes, especially classes in agriculture and in the trades connected therewith, would by developing the skill and intelligence of the producers add enormously to the bulk and the value of the products. But so slow are farmers generally to realise the change that has come over the spirit and methods of agriculture of late years, and to recognise the great benefits that their sons and daughters would receive by technical training in their work, that it would almost need an inspired missionary to convince them of facts which are commonplaces in more advanced communities, such

as Denmark and several of the North Central States of the American Union. It is to be hoped that those who are now receiving some preparation for such work in our elementary schools and in a few of the district high schools, may be disposed to continue their technical training afterwards on more specific trade lines. So far the adult classes in agriculture, dairying, and the like in our country have been few, and have received but scant support from those they are intended to benefit. The results in regard to trade classes in towns have been far more encouraging; indeed, the figures quoted above, as far as they go, show that for a young country New Zealand is making fair progress towards the goal already reached by such countries as Switzerland and Germany.

One remark in the report as to the supply of teachers of special branches of manual instruction may be noted as significant. It is to the effect that the experiment of relying upon outside institutions to provide a sufficient number of well-educated young men who are also expert workmen to serve as shopwork-teachers, has to a large extent failed. The report recommends, therefore, the establishment of a training department for shopwork-teachers. It goes without saying that boys can have little respect for a teacher of carpentry who cannot design with artistic taste and execute with deftness and accuracy.

The experience of Wuerttemberg in starting its industrial improvement schools has been the same, and it has had to take special measures for securing a succession of trained instructors. It will be well for us to take warning by these examples, and provide thorough training for our own special instructors, especially in agriculture and in the mechanical and other skilled trades. Opportunity for doing this might be obtained by making suitable arrangements with such institutions as the Lincoln Agricultural College, and the Canterbury College School of Engineering, the schools of mines, the experimental stations of the Agricultural Department, and so forth.

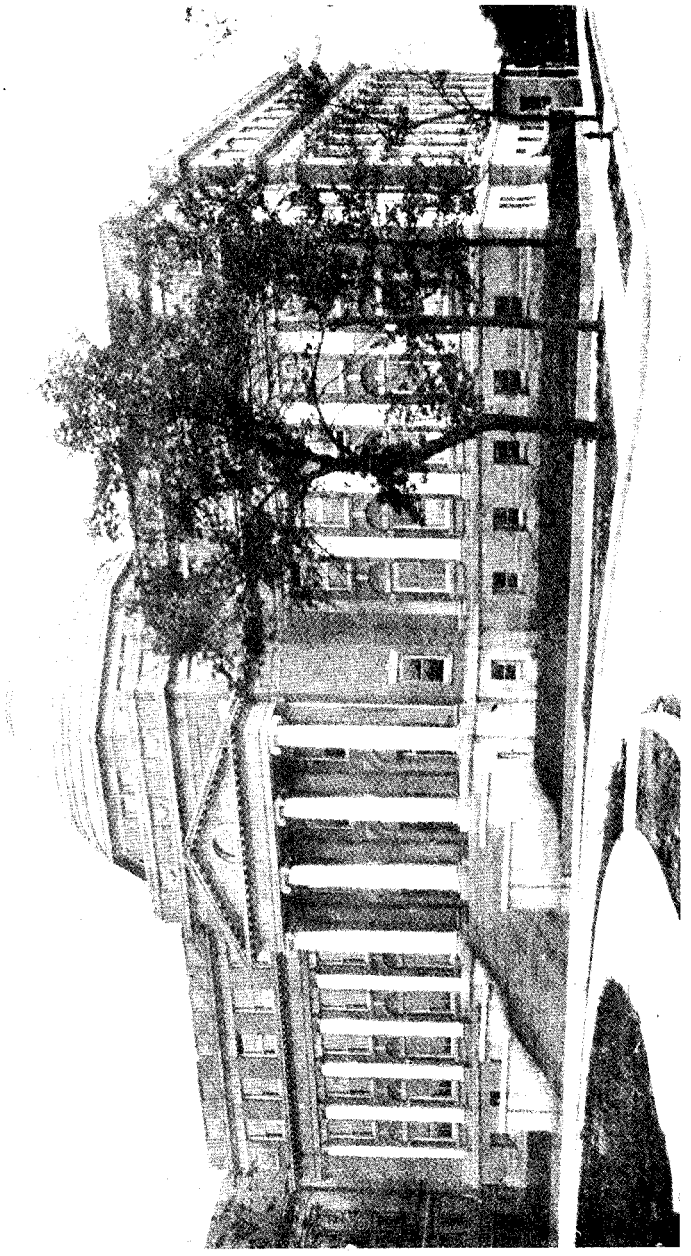
Nautical School.

The City of New York maintains a training-ship for the merchant service, and is thus rendering a great national service in training young men to be skilful seamen, adepts in all manners of seamanship as far as it can be learnt on a sailing-vessel, and able to navigate with scientific accuracy. The men so trained, whenever they are given a chance, constitute a most valuable addition to the merchant marine in times of peace, and to the naval forces in times of war. But complaint is made that the training is not recognised at its full value. "The authorities who license ships' officers do not give sufficient credit for the admirable scientific training which the boys have received, while the National Government has regarded with apparent indifference the great expenditure of time, energy, and money made by this city to train a body of seamen from whom the navy may be recruited in time of war." The National Government is further blamed for its failure to provide the nautical school with an up-to-date vessel that will enable the school to train its student seamen in every branch of modern seamanship.

Order and Discipline.

In American schools there is none of that drill-like precision of order that is seen in many English and in most German schools. In the playgrounds, and in the passages when classes are changing, discipline is generally maintained by the pupils themselves; the changes are made in a natural, easy, and quiet manner, all that is heard being the murmur of conversation among the pupils as they pass along the corridors. I was particularly struck by the politeness of the pupils to one another, and by the business-like way in which the members of a large class would go on with their work if the teacher was called temporarily out of the room; most classes have their tribunes elected by themselves, but the influence of these officers was in general so quietly exercised as to be scarcely noticed; if, as occasionally happened, a boy (it was never a girl) had to be called to attention, the public opinion of the class was evidently with the boy tribune, never with the culprit. The following extract from Dr. Maxwell's report is given, because of its interest, at full length:—

"*Pupil Self-government.*—While the good order maintained in our schools is always a subject of admiration with our visitors from all parts of the world, there are still principals who cry out for a return to the dark and gloomy days of corporal punishment. And it must be admitted that the apparently incorrigible boy, with strongly marked mischievous or even vicious tendencies, is still a problem. We are approaching the solution of such a problem more nearly, however, in two different ways. In the first place, we are learning to look upon such a boy from the pathological point of view; we



TEACHERS' COLLEGE, CHICAGO.

are seeking to find a physical cause for his eccentricities; and in a majority of cases the removal of such physical cause works the reformation of the boy. In this task we have the expert assistance of the physicians of the Department of Health and of the hospitals of the city. If the interest of private medical practitioners could be aroused to the importance of this matter, a long step forward would have been taken. In the second place, the principals are beginning to turn their attention to some plan of pupil self-government as a means of lightening the burden of discipline that now rests on the shoulders of the teachers, and as a means of training in the duties of citizenship. A few principals have already adopted a modified form of the 'school city' in their schools; others, the 'citizen and tribune plan' recommended by a committee of the Board of Superintendents after a careful examination of various forms of pupil self-government. In the hope that it will lead all our principals to turn their attention to this very important subject, I quote the following account of the results of eight years of pupil self-government, under the 'citizen and tribune plan' in the John Crerar School, Chicago, prepared by Mr. John T. Ray, the principal of the school and author of the plan, for *School and Home Education*:—

"'In the first place, the plan should not be considered as a plan of "pupil government." The schools using it are still under the direct control of the teacher and principal, especially in the laying-down of rules and regulations for the school, and in the administration of all penalties and punishments for disobedience or wrong conduct that tends to thwart the purpose of the school or the rights of individual members.

"'What, then, it may be asked by some, is there left for the pupils to do in the way of government of the school?

"'The pupils are charged with the general movements of the pupils in an about the school outside of the teacher's class-rooms. They are taught to see that the rules and regulations are enforced, and that the rights of every pupil in and about the building are respected. They are taught that this enforcement is not only their duty, but that it is to their general welfare and interest to do it, just as in later life it is the duty of every good citizen to see that law and order, honesty, and square dealing are the general practice of the community in which they live. They are taught how to do this along three distinct lines.

"'First, they exercise personal self-control *without being watched*. Their conduct out of the presence of the teacher must be as exemplary as in her presence.

"'Second, the pupils are taught that they have a public duty to the school as a whole, and that personal right conduct is not all, but that they must *actively* exercise—the same as the teacher is expected to do—an influence for right over their fellow-pupils. They are taught that no good citizen of a school, any more than of the adult community, is doing his full duty if he becomes an idle looker-on at misconduct in others that affects the welfare of all.

"'Third, they are taught how to *organize* and, by the authority of their elected officers, tribunes, and marshals, control the wayward and thoughtless, who are always only a small minority. The pupils have long since discovered that it is to their interest and welfare to do this. It is the business of the teacher to show them how this may be done. The following results show clearly in the general condition of the school:—

"'1. Pupils have learned that if they create a sentiment in the school for right conduct but very few will fail to respect that sentiment. These, if they will not submit to the mild influence and admonition of the school officers, backed by the majority who demand it, are dealt with by the teachers, and are isolated from association with their fellow-pupils whose rights they refuse to respect.

"'2. They have uprooted from the school the old and pernicious idea that pupils should hide from the teacher all misdeeds. They see clearly that it is the right and honourable thing to see that wrong acts are exposed, alike for the good of the offending individual, the general welfare of the school, and their own personal welfare. In other words, they have learned the distinction between idle "tattling" and a manly exposure of misconduct for the purpose of correcting it.

"'3. The habit of sly, mischievous, and disturbing tricks when not observed by the teacher has practically disappeared, for the reason that the disapproval of their fellow-pupils is sure to make itself manifest, and exposure will follow.

"'4. Fighting, nagging, and annoying other pupils who are timid or smaller has been entirely stopped. The older pupils take a pride in performing this duty voluntarily, and the presence of the school officers every-

where affords the means of at once stopping it. A fight or the encouragement of a fight has not occurred about the school in several years.

"'5. Cheating and wilful misrepresentation in connection with school-work is driven out of every grammar-room [*i.e.* upper class-room] in the building by the pupils themselves, who act through their tribunes in quietly warning the offenders to desist, or exposure will follow.

"'6. The pupils of a room have, as a rule, acquired the habit of going on with the work of the room as promptly and properly when the teacher is absent as they would if she were present. In other words, during school hours the room is constantly *organized* for work and orderly procedure, it being the duty of one of the two tribunes to either take charge or appoint some one to take charge when the teacher is absent or out of the room temporarily. This is quite as true of the conduct of a first or second grade as of the highest. It has become a *habit* of the pupils throughout the school.

"'7. They have learned the art of careful and thoughtful selection of competent, discreet tribunes. When they find such a boy or girl, he or she is re-elected, often, several months in succession. The pupils as a whole respect the wishes and suggestions of the tribunes, and, except by new pupils transferred from other schools, the tribunes are treated with as much respect as are the teachers of the school.

"'8. It has been found that the tribunes, acting through the marshals they appoint, can as efficiently and quietly regulate the passage of the pupils on the stairs, the forming of the lines, and the general deportment and conduct on the playgrounds and in the basement as did the teachers, when they were required to do these hall, basement, and playground duties.

"'9. The public installation of the tribunes each month, and the formal recognition by the teachers of satisfactory conduct and good influence of individual pupils, has a very salutary effect. To be made a "citizen" of the room and school by the teachers, and the formal presentation of a "citizen pin," is the ambition of most pupils, and in the lower grades especially it is a powerful incentive. No more severe penalty can be put upon a child than to say to him, "By your lack of self-control and proper influence for right, you are no longer worthy of wearing that pin." The child, as a rule, tries to so conduct himself as to be worthy of having it restored to him at the end of the month.

"'10. The lifting from the shoulders of the teachers the unpleasant duties of standing guard on the stairs eight times a day, and of doing hall, basement, and playground duties at morning, noon, and recess, summer and winter, is one of the pleasurable direct benefits to the teacher, and hence to the school. Her health is preserved and her energies conserved for the legitimate duties of the schoolroom. The government during the school hours is much less a burden. The teacher gets the same relaxation, rest, and liberty at morning, noon, and recess as do the pupils, and comes to her work in the schoolroom rested and refreshed as much as do the pupils.

"'In conclusion, let me say, let no teacher feel that here is a chance to throw off unpleasant duties. There must be only a change from that of doing police duty to that of daily guiding, directing, and teaching the pupils how to conduct themselves and to control others. There come to the teacher new duties that she must study and learn how to skilfully execute. The teacher who thinks that this or any other plan of self-government can be instituted without careful study and forethought, and a high determination to teach her pupils how to be *self-controlling, law-abiding, law-enforcing* members of the school, had better never undertake the task.'"

Leave of Absence of Teachers.

Leave of absence with pay may be granted to teachers by the Local School Board (corresponding to the School Committee in New Zealand) for any of the following reasons:—

(*a.*) Serious personal illness;
(*b.*) Death in the teacher's immediate family;
(*c.*) Compliance with the requirements of a Court;
(*d.*) Quarantine established by the Board of Health.

Under clause (*a*) the rules are as follows:—

For an absence of one day, no pay;
For an absence of two days, one-fourth of a day's pay;
Three days, three-fourths of a day's pay;
Four days, one and a half days' pay;
For the fifth and succeeding days of absence, to and including the twentieth, full pay;
For the twenty-first and following days of absence, not exceeding the ninety-fifth, half-pay;

After the ninety-fifth day no pay is granted, and full pay is not given for more than sixteen days of absence in any one year.

Under clause (*b*), not exceeding three days' full pay is granted.

Under clause (*c*), in cases where the Court duty concerns the administration of the schools, full pay; in other cases, half-pay is granted.

Under (*d*) payment is not granted for absences exceeding ten school days within the space of one year.

The Chief Superintendent expresses his opinion on these rules, recently adopted by the New York Board of Education, in the following terms:—

"During the year, the new rules for deduction from teachers' salaries on account of absence went into effect. These rules are of the greatest importance from three very distinct points of view—as they act as a deterrent from unnecessary absence; as they help to replenish the fund from which retired teachers' pensions are paid; and as they affect the income of the teacher who is compelled to be absent from duty. It is too early as yet to pronounce final judgment on the effect of the new rules as a deterrent from unnecessary absence; there is apparently little doubt, however, that the sums deducted for absence are ample to make good whatever deficiency may arise from the other sources of income from which the pension fund is derived—namely, 1 per cent. of teachers' salaries and 5 per cent. of the excise funds. As to the effect on the income of the teacher who is absent on account of 'serious personal illness,' I have no hesitation in saying that the rules in question are fundamentally wrong. They lay the heaviest burden on the unfortunate teacher who suffers from an illness of long duration and a comparatively light burden on the one who is sick only for a few days. If deductions must be made from the salaries of teachers who are really ill when they are absent, much the more equitable plan is to make the burden fall chiefly on the teacher who is absent only for a brief period. The reason is obvious—a brief illness involves little expense in addition to the customary cost of living; a prolonged illness of a serious nature involves much additional expense—doctor's bills, special diet, nursing, and in extreme cases hospital expenses or even long journeys in pursuit of health. If there is any teacher who should have full pay while absent, it is the teacher who suffers from prolonged illness.

"*Period of Rest for Veteran Teachers.*—The fact must have forced itself on the mind of any one conversant with the applications of teachers to be retired on pension, that the great majority of these applications are presented by teachers who have broken down through nervous trouble. To such an one it will also have been apparent that neurasthenia most frequently attacks the woman teacher between the ages of forty and fifty. In other words, the teacher who has taught for twenty-five years often finds herself, through overwrought nerves, unable to continue work which she loves and in which she has become proficient. Quite probably, if this teacher could afford to take a complete rest for a year, she would return to her work so refreshed that the threatened breakdown would be averted. Such a rest she is now, in most cases, unable to take, because, under the rules of the Board of Education, she can do so only with complete loss of salary for the time she is absent, and she cannot leave herself without means of support. I recommend, therefore, that your Board so amend its rules that a teacher who has taught for twenty-five years, and who has a good record as a teacher, may rest for a year and receive a liberal allowance of her salary, if not her whole salary. Universities find it to their advantage to give their professors every seventh year to themselves with full salary. Surely the twenty-sixth year is not too much to ask for the public-school teacher. I firmly believe that such a provision would be in the best interest of the schools, because it would retain able teachers longer in the service."

Retirement of Teachers.

The amounts deducted from the salaries of teachers on account of absence are paid into the Retirement Fund; these amounts, together with a levy, generally 5 per cent., upon the excise fund of the city, form the main contribution to the fund; the teachers also pay 1 per cent. of their salaries.

The Board of Retirement consists of three representatives chosen by the teachers, and three members of the Board of Education, with the City Superintendent.

Teachers of sixty-five, with thirty years' service, may be retired by the Board of Education without the recommendation of the Board of Retirement, which is required in all other cases. In general, teachers may be retired after thirty years' service at the discretion of the Board; those who are mentally or physically incapacitated may be retired (and receive annuities) after twenty years' service; in most cases fifteen years of the

service must have been in New York, in the case of the Normal College staff ten years' service in that college is accepted. The annuity payable is one-sixtieth of the salary for each year of service up to thirty years, the minimum annuity for teachers being £120 a year; the maximum annuity for principals of schools is £300, and for supervising officials £400.

The discretion of the Board of Retirement in retiring teachers of thirty years' service and over is limited by the provision that at no time may the fund be reduced below $800,000. The chance that any individual may be able to retire before the age of sixty-five will therefore depend upon the condition of the fund at the time.

There are no allowances to widows and children, and no refund of contributions is made in any case.

It is evident that, as the total income of the fund is between 6 and 7 per cent. of the entire salary budget, it is quite possible for the Board of Retirement, by the due exercise of its discretion, to keep the fund actuarially sound. At the same time, it is equally possible, by unwise management, to place it in a very undesirable position.

Education in Chicago.

The two most interesting groups of educational institutions in Chicago are,—

(1.) The large group of schools—Normal School, Public High Schools, Public Elementary Schools, &c.—which are under the control of the Board of Education of the City of Chicago.

(2.) The smaller group of institutions—the University, with its Colleges and Faculties, including the School of Education; the University High School, Elementary School, and Manual Training High School—connected with the University of Chicago.

The area governed in school matters by the Board of Education contained in 1905–6 a population which may be estimated as nearly, but not quite, 1,800,000.

The income of the Board for 1905–6 was derived from the following sources:—

	£
City School Tax Fund	1,788,459
State of Illinois	73,188
Rentals and interest on investments	136,297
School fees (non-resident pupils)	936
Miscellaneous	32,548
Total	2,031,428

(The cash balances at the beginning and end of the year are excluded, as also are the refunds on account of the Parental Schools. But it should be noted that the cash balance at the end of the year was only £265,597, as against £539,869 at the beginning of the year.)

The total net expenditure, excluding that on apprentice schools and the Parental School, &c., was,—

	£
Maintenance (including all salaries, incidental expenses, repairs, &c.)	1,521,467
New sites, buildings, additions, and other permanent improvements	742,390
Total	2,263,857

The cost of medical inspection, $6,103, is included here, though nothing is paid on that account in New Zealand out of the Education vote. The cost of maintaining the Parental School is not included, as that school does only a very small part of the work carried on by our industrial schools, the great bulk of it, in the case of Chicago, being performed by the State or by private societies. The total expenditure given above does not include any of the cost of technical education proper, or of University education, or of the Teachers' Training College and schools attached to the University, although it does include the Chicago Normal School.

Except for salaries of teachers, it is impossible to distinguish between the cost of primary and secondary education.

The net expenditure in New Zealand on primary education (including Native schools and also the training of teachers) and secondary education was as follows:—

	£
Maintenance (including all salaries, scholarships, maintenance, manual instruction, administration, supervision, and repairs)	829,509
New buildings, additions, and other permanent improvements..	58,315
	887,824

The moneys to meet this were provided as follows :—

	£
Minister of Finance	784,209
Reserves and interest	82,424
Tuition fees	21,191
Total	887,824

Of the total, 88·3 per cent. comes directly out of the revenues of the Dominion, 9·4 per cent. from reserves and interest, and 2·3 per cent. from tuition fees; in the case of Chicago, 3·6 per cent. is provided by the State, 88 per cent. by means of the city school tax (local), 6·7 per cent. comes from rents and interest, and only a small fraction per cent. from school fees.* Chicago spends £1 5s. per head of the population on primary and secondary education (reckoned as above)—namely, for new buildings, &c., 8s. 3d., and for all other purposes, 16s. 9d.; New Zealand, similarly, spends 18s. 7d. per head—namely, 1s. 3d. per head for new buildings, and 17s. 4d. for other purposes.

TABLE F1.—COST PER PUPIL OF MAINTAINING VARIOUS CLASSES OF SCHOOLS (exclusive of Expenditure on New Buildings, but including Expenditure met from Rents).

Chicago.

[N.B.—These figures are taken from the report of the Board of Education of the City of Chicago for the year ended 30th June, 1906.]

—	Average Roll.	For Salaries of Teachers.	All other Expenses.	Total.
		£ s. d.	£ s. d.	£ s. d.
Elementary Schools	231,297	4 6 6	1 7 5	5 13 11
High Schools	10,839	10 3 10	1 10 11	11 14 9
Manual-Training High Schools	1,185	13 14 8	4 15 3	18 9 11
Normal School*	366	33 5 0	15 17 8	49 2 8
Parental School	212	25 4 0	51 1 2	76 5 2†
Schools for Deaf	200	24 8 10	(not given)	24 8 10‡
" Blind	27	32 13 1	1 14 3	34 7 4
" Apprentices§ ..	229	1 18 10	..	1 18 10
Evening Schools	9,714	1 19 6	0 11 0	2 10 6

*Excluding cost of practising schools. No allowances are made to students for board, &c.
†Includes board.
‡Does not include board.
§Three months only in each year.

TABLE F2.—COST PER PUPIL OF MAINTAINING VARIOUS CLASSES OF SCHOOLS (exclusive of Expenditure on New Buildings, but including Expenditure met from Rents.

New Zealand.

—	Average Roll.	For Salaries of Teachers.	All other Expenses.	Total.
		£ s. d.	£ s. d.	£ s. d.
Primary Schools	141,900	3 8 6	1 11 7	5 0 1
Secondary Schools	4,270	11 2 3	*4 11 1	15 13 4†
District High Schools ..	2,594	7 0 9	*3 1 11	10 2 8
Training Colleges	261	14 11 9	9 3 3	23 15 0‡
Weraroa Boys' Training Farm ..	126	13 3 1	33 16 8	46 19 9§
School for Deaf	70	22 15 2	6 14 2	29 9 4‖
Manual and Technical ..	17,992	..	..	3 5 2¶

*Including scholarships.
†Fees amount to £21,191 or £4 19s. 3d. per head; so that the net cost per head is £10 14s. 1d.
‡Including University College fees paid for students, but excluding allowances to students, which average £34 18s. 2d. a head, and make the total per head £58 13s. 2d.
§Includes board.
‖Does not include the net cost of boarding, £21 17s. 5d. a head, which makes the total cost per pupil £51 6s. 9d.
¶Whole year.

The cost of maintaining the various kinds of schools in Chicago is shown in Table F1 as the cost per pupil; and in Table F2 the cost per pupil is shown for New Zealand schools, as nearly as possible on the same basis—*i.e.*, all expenses are included except the cost of new buildings, additions, and improvements.

* In Chicago all education provided out of the city funds is free to all residents in the city.

It will be seen that the cost per pupil is greater in Chicago in the case of both primary and secondary schools. As regards the former, the difference in salaries alone is 18s. per head more in Chicago than in New Zealand; the excess of other expenses of maintenance in our schools is more than accounted for by such factors as the large number of small schools, the cost of the conveyance of school-children, and the larger cost of maintenance of wooden buildings, as against that of stone or brick buildings. It would not be unfair to compare the expenditure on salaries in the Chicago Elementary Schools with the corresponding expenditure in a New Zealand school with the same average attendance—viz., 924. We spend in such a school for the salaries and allowances of teachers about £2,371, or £2 11s. 4d. per pupil, as against £4 6s. 6d. in Chicago. On the other hand, in the American city the average number of children per teacher (all teachers being adults) is forty-two, whereas in such a school in one of our towns the average number per teacher (counting two pupil-teachers as equivalent to one adult) would be fifty-six, and the cost of living in Chicago is at least 20 to 25 per cent. higher than with us. The greater strength of the staff, by reason of the smaller size of the classes and the absence of pupil-teachers, makes, of course, for greater efficiency.

The salaries of supervising officers are fairly liberal; but those of teachers are not absolutely much higher than those of the teachers would be in schools of the same size in New Zealand, and if the difference in the cost of living be taken into account they cannot be regarded as so high. It may be interesting to quote some of the salaries: Superintendent of Schools, $10,000; District Superintendents, $4,000; Assistant Superintendents, $2,000 to $3,000; Principal of Normal School, $5,000; Vice-Principal of Normal School, $3,000; heads of departments and instructors, $1,200 to $2,500; teachers in normal practice schools, $750 to $1,200; principals of high schools, $2,500 to $3,000; principals of elementary schools, $1,200 to $2,500; assistants in elementary schools, $550 to $1,175; assistants in high schools, $800 to $2,500; assistants in deaf schools, $750 to $1,200; special teachers of household arts, $750 to $1,200; special teachers of manual training and physical culture, $750 to $1,400.

The average salary of principals of elementary schools in Chicago is £464, and that of assistants £166 18s., or of all teachers, £180 12s. The average number in attendance at a school is 924; in a public school of that size in New Zealand, the principal would receive as salary and house allowance £440, the assistants an average of £149 1s. 10d., and the average salary for the whole staff would be £173 6s. 8d., which would compare not unfavourably, taking all the circumstances into consideration, with the salaries of teachers in Chicago. It may be remarked, however, that a large proportion of the latter are women.

The average salary paid to principals of high schools in Chicago is £602, that of assistants is £303, and of all high-school teachers £313.

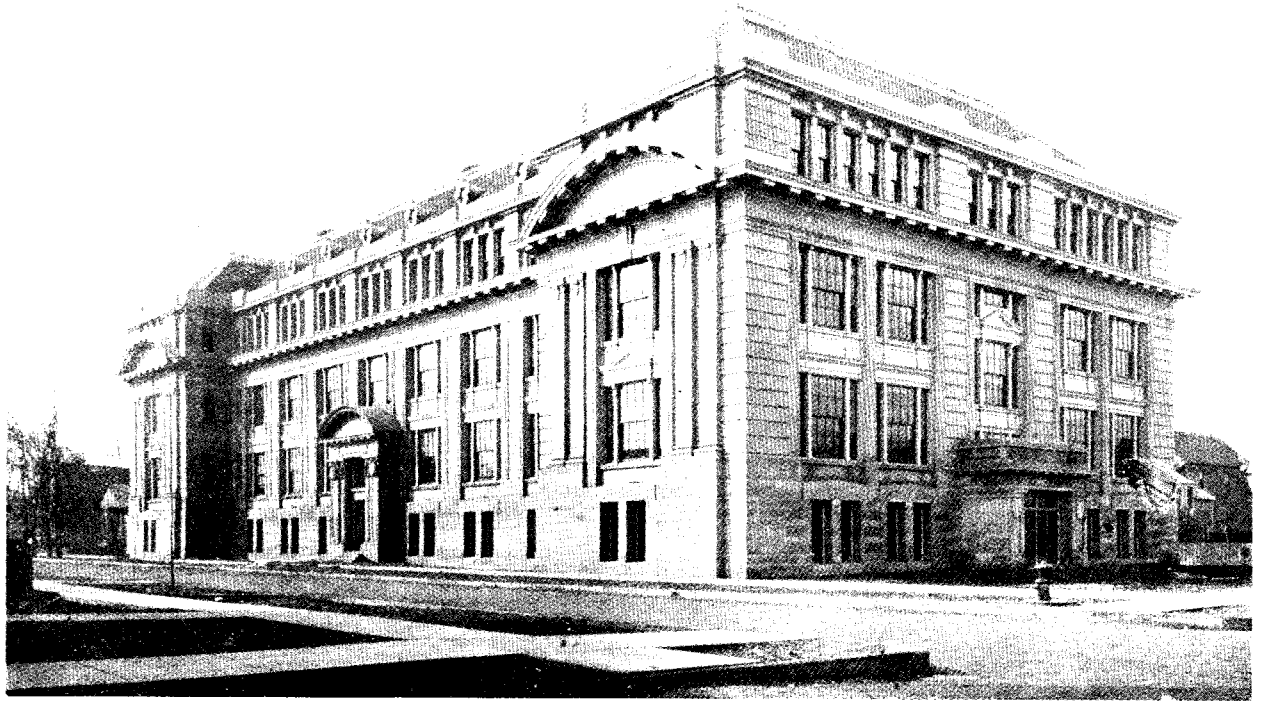
In New Zealand the average salaries are: High-school principals*—men, from £250 to £800, average, £463; women, from £250 to £450, average, £343. Assistants—men, average, £226; women, average, £139. Average for all principals, £425; average for all assistants, £187. Principals in the four chief towns, from £500 to £800 for men, and £300 to £450 for women; average—men, £654; women, £408; men and women £562.

School Buildings.

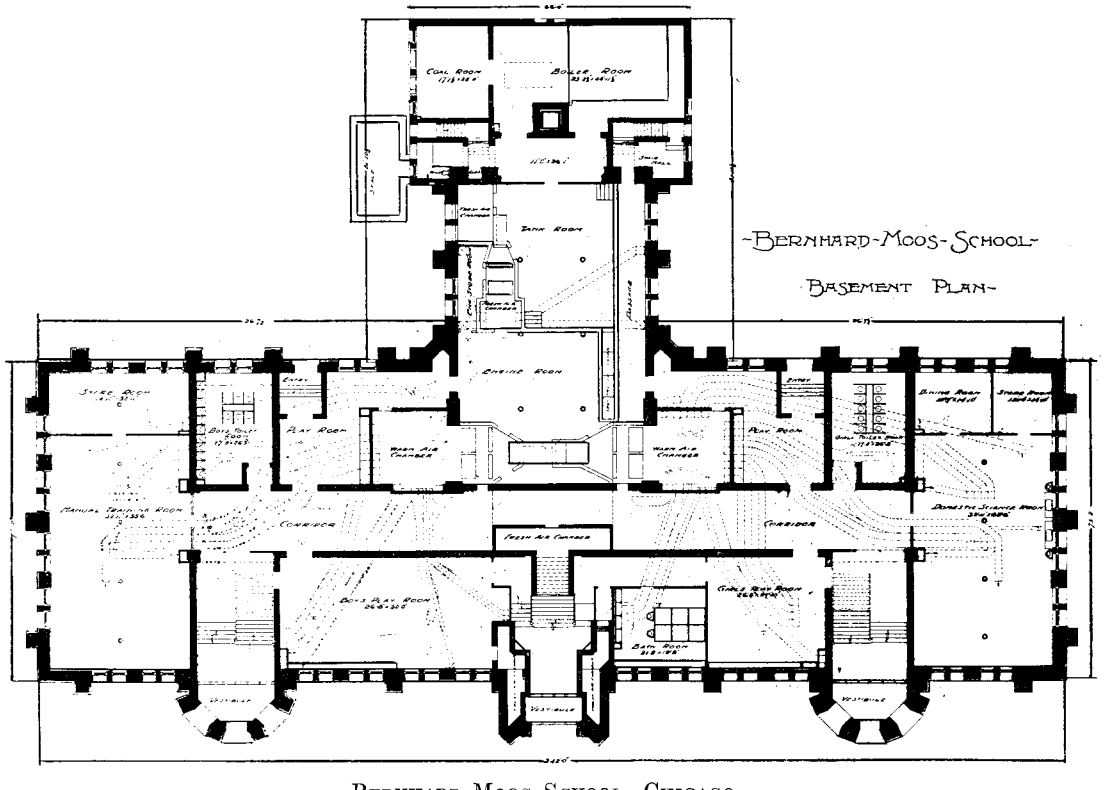
A great deal of attention has been devoted of late years in Chicago to school buildings, and much more room is allowed per pupil than we are accustomed to think sufficient in New Zealand. It must not be forgotten, however, that within a school building the authorities there have to provide for a large boiler-room and for blast-chambers to secure the proper heating and ventilation of the building, especially in the winter months; for indoor playgrounds; for sanitary conveniences and lavatories; and that woodwork, and other forms of manual training, cookery, and other branches of domestic science, have provision made for them in the school building; that the school library and school museum are often important enough to require large special rooms; that there are many store-rooms and teachers' rooms, and almost invariably a spacious (and frequently elegant) assembly hall; in many schools a luncheon-room, with kitchen and pantries attached; and in all new schools gymnasiums are to be included.

The latest plans for large schools will be understood from the illustrations. The Moos School contains 26 class-rooms, holding upon an average

* Five principals (out of twenty-eight) have residence or house allowance, and two others have board and residence. Out of 167 assistants, six have residence or house allowance, and twenty-four others have board and residence.

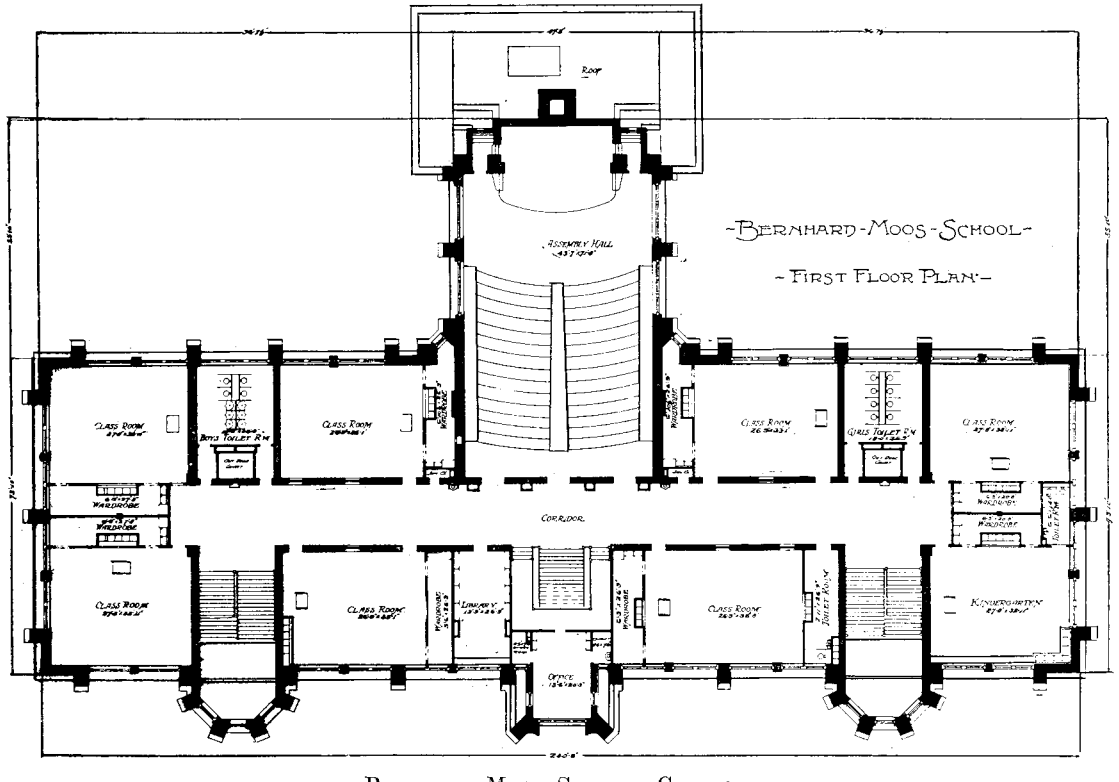


PUBLIC ELEMENTARY SCHOOL, CHICAGO.
Over 1,200 pupils; cost £43,250.



BERNHARD MOOS SCHOOL, CHICAGO.

Basement plan. (Length, 242 ft.; depth of main building, 75 ft. 2 in.)



BERNHARD MOOS SCHOOL, CHICAGO.
First-floor plan.

50 pupils each, or 1,300 in all. Its total cost was $210,000, or, say, £43,250, so that the cost per pupil was about £33 4s. (Our public schools cost from £7 to £10 per pupil.) The proportion of cubic feet per pupil for the entire building is 1,136, and the cost per cubic foot was 7d. for the whole contract, exclusive of architect's fees.

The ordinary size of a class-room is 26 ft. 8 in. by 33 ft.; but I was in some of them on dull days, and even with the large proportion of window-space the lighting seemed insufficient in the remote parts of the rooms. The English rule of a maximum width of 22 ft. to 24 ft. for class-rooms would appear to be a safe one, even in the clear atmosphere of the United States or New Zealand. There is an average allowance of floor-space of 17½ square feet per pupil, and this, with a height of 12 ft. or 14 ft., would give 210 to 245 cubic feet per pupil. Some teachers find these rooms rather large for continuous speaking, and the distance of the wallboards from the light or from the pupils or both imposes a somewhat severe task upon the eyes of some individuals. In fact, I think the reasonable conditions are overstepped in these cases. If the classes are as large as fifty, 14 or 15 square feet per pupil ought probably to be the extreme limit of floor-space. It must be remembered that the eye is the organ that suffers most from school-work done in wrongly shaped or insufficiently lighted class-rooms. The Board of Education has its own architect's and engineer's departments. The total of contracts let during the year 1905–6 was $2,366,611, and the total cost of the architect's department for salaries and all other expenses was $65,000, showing a cost under this head of 2¾ per cent. on the contract price of the buildings.

Teachers' College and Normal School.

The students who enter the Normal School have passed through all the grades of the High Schools, or have given evidence of similar training, so that it is not considered necessary to give them special literary work; they study, indeed, many, if not all, of the subjects they have done before—but always with a view to the proper basis and the best methods of teaching the several subjects. Psychology, so far as it concerns the development of the child-mind, and, therefore, as it affects education, receives due attention; but the training of the teacher to teach is the prominent feature of the whole course.

In the New York and Brooklyn Training Schools, and in the Teachers' College of the Columbia University, the practice in teaching is separated from the observation of the child and of teaching-methods; I have commented on this elsewhere. But in both the Education Department of the University of Chicago and the Chicago Normal School these closely connected parts of a teacher's training are not kept distinct, but the practising school is also the observation school, and the observation and practice go on to some extent side by side, although it is held (rightly, in my opinion) that observation of the nature of the child and of the methods adopted by trained teachers should precede practice as well as accompany it.

The head of the Chicago Normal School, like that of the Brooklyn Training School, is a woman—Dr. Ella Flagg Young. The buildings are new, and of great architectural beauty. The school is well provided with laboratories for various purposes, with workshops, class-rooms, and assembly halls. Unfortunately, the acoustic properties of the auditorium or main assembly-room are poor, and the wisdom of the plan which gathers the desks of all the 500 students in one great room, the study hall, is certainly doubtful; it would be better, one would think, to have studies of moderate size, grouped, say, around a central library.

The workshops are equipped for classes in woodwork, weaving, book-binding, and other constructive work. It is evident that manual training —and this is true generally in the States—is becoming an effective factor in the preparation not only of the specialist, but also of the class-teacher.

In many schools I heard very good chorus-singing, and at the Chicago Normal School the classes in chorus-singing are not only made an occasion for bringing the entire student-body together, and so fostering a warm *esprit de corps*, but prepare the teachers for acting as missionaries for this healthy and inspiring school exercise. For more detailed work, the students are taught in classes. Ten weeks during the student's course are now given to the academic work in music and ten weeks to the advanced practice work. The general chorus-singing goes on all the year round.

Admission to the Chicago Normal School is granted to graduates of high schools—that is, to those who have completed satisfactorily a four-year course of secondary work—and to others who have been students at normal schools (or colleges) elsewhere. In the Appendix is given a portion of the "Announcement" for the year 1907–8.

In the practising-school attached to the Normal School certain of the rooms are specially adapted, among other things, for the teaching of geography. In one of these, occupying the whole of the middle of one large room, was a table, or, rather, a series of table-like troughs, fitted with taps, sprinklers, and drainage-outlets for representing the action of water upon any miniature landscape that might be modelled with sand and clay thereon, so as to show miniature river-courses, deltas, lakes, and so forth. The school is splendidly equipped with a geographical museum showing the natural products and chief manufactured staples of various countries of the world. The institution, moreover, acts as a centre for lending similar collections to the elementary schools and high schools of the city, for it is the headquarters of the Bureau of Geography, which, originally established by elementary-school principals, was in 1904 handed over to the Board of Education, and by it transferred to the Normal School. One hundred and thirty-one schools, high and elementary, avail themselves of its facilities; it is surprising that all of the 250 public schools in the city do not ask for its material. The aim of the Bureau is to furnish illustrative material to aid in teaching geography in the elementary schools. All illustrative materials have been secured entirely by donation from individuals and firms in the United States and foreign countries. These supplies occupy three rooms in the new Normal School building, where they are classified, labelled, and arranged in convenient order for distribution to the schools. The collections are composed of books, pamphlets, typewritten articles, specimens, pictures, maps, charts, and other forms of objective illustrative materials. They may represent a country as a whole, or part of it, or some natural or manufactured product—for instance, by means of specimens and pictures silk is shown in all stages of production, from the egg of the silkworm-moth to the various beautiful finished fabrics. The Bureau aims especially to vitalise the commercial and industrial phases of geography; it now proposes to supply the gaps in its collections by setting aside a small sum annually for purchases, and for meeting the travelling-expenses of the Curator in collecting material. During the past three years, the bottling, mounting, and care of the specimens has cost only £55. Some of the specimens are mounted, others are in bottles; they are arranged in series in pasteboard boxes, and these, in sets of three, are enclosed in strong wooden boxes. Each school is allowed to retain one set during a period of two weeks. On Monday and Thursday a special wagon of the Board of Education calls at the Normal School for the sets that are to be distributed to the various schools. During the year 1905–6, 128 sets were used in the Normal School, for the instruction of teachers in methods of teaching geography, 642 sets were used in the two practice schools, and 2,390 sets were furnished to other schools.

The New Zealand Education Department has begun to distribute hand-pictures for class teaching in geography, and there is no reason, in spite of the way in which our schools are spread over the Dominion, why other features of the Chicago scheme might not, in part at least, be adopted here, the Training Colleges, the Boards of Education, and the Department co-operating in the work of distribution. I should like to see every school, primary, secondary, and technical, beginning to make its own museum—a museum not of mere curiosities, but of specimens and pictures to illustrate nature-study, geography, and industrial and technical processes. I have no doubt that many of the firms in the Dominion would be happy to supply samples illustrating our manufactures and other industries.

In 1903 was published a valuable report on Geography, drawn up by a special committee of principals of schools, together with the head of the Department of Geography in the Chicago Normal School. The report consists entirely of an outline of a geography course for the eight grades of the elementary schools; it fills 154 pages, and, although largely on the lines of our own syllabus, the amount of matter suggested would, I imagine, spread alarm among most teachers in New Zealand. The work begins in the first two grades (corresponding to the Upper Preparatory and First Standard classes in our public schools) by what is called "environment study," based on the children's own observation and on pictures; in the Third Grade (Standard II) there is a fairly complete study (as far as children of eight or nine can make it) of the "geography of the social centre"; the work is fully up, as regards content, to what is required in our Fourth Standard. In this, as in all the higher grades, special emphasis is laid on social, industrial, and economic geography; but it should be remembered that good school museums and the collections distributed by the Bureau of Geography render direct concrete teaching easy; moreover, in many schools the children actually dress like the inhabitants of the country they are studying, do simple manual work to illustrate the primary industries, and generally act as far as possible the things they are learning about other countries. In the

higher grades the work is arranged largely on the concentric plan. Some idea of its extent and character can be gained by the synopsis given in the Appendix of what is prescribed for the First Grade, for the first half-year of the Fourth Grade, and for the Sixth Grade (Standard IV or V). As in our syllabus, more work is suggested than any teacher will desire to complete. This is done with a view to leaving a choice for the teacher.

Geography is not the only subject in which preparation is made for that kind of concrete teaching that creates a living interest in the minds of pupils; growing plants, tanks for the observation of aquatic life, and other appliances meet the eye in this and other schools. What is more, the teachers know how to use them so as to train the observation of the children, to lead their pupils by careful reasoning to form inferences based upon their observation, and to express in clear language what they have learnt and thought out.

The Normal School does not confine itself to the training of the students at present on its register; by means of Normal Extension Classes it is ever seeking to improve the general and special knowledge of teachers whose period of training has passed. These classes, which are fully organized, are conducted, some at the Normal School, but the majority at other places in different parts of Chicago. A third of the instructors in 1905–6 were members of the staff of the Normal School, and their classes were apparently the most successful. More than two-thirds of the classes were systematic "study classes"; teachers who complete a course in one of these may now have their work considered when they are classified for promotion;* but without this pecuniary incentive, during the two years 1904–6, 2,300 to 2,500 teachers availed themselves of the opportunities afforded in Extension Classes. The average in each class was eighteen to twenty. For most of the information given above I am indebted to the Report of the Chicago Board of Education.

The Chicago Normal School has its own printing and publishing department, known as "The Chicago Normal School Press," which, besides printing the forms and circulars required by the school, publishes a magazine, the *Educational Bi-monthly*, various class-notes and outlines for teaching the different subjects of the school programme, and autographs on topics taken up by the several departments of the teachers' college, written either by the staff or by senior students—for instance, the Department of History and Sociology has issued a series of "Municipal Studies" (No. 1, 52 pages, "The Fight for Life in Chicago"—a sketch of the sanitary history of the city, compiled largely from official reports; No. 2, 41 pages, "The History of Chicago's Water-supply"; &c.); these are intended as aids to the study of civics, emphasis being laid on public functions rather than upon the mere machinery of government. Again, the Extension Department has issued pamphlets intended for teachers attending the Normal Extension Classes (*e.g.*, "Conversion and Disposition of Food in the Body"—a very practical summary of the leading scientific facts on the subject, well up to date).

School-books and School Libraries.

No school-books may be used in any Chicago schools, either elementary or high, unless they are included in the list authorised by the Board of Education. Statements have been made from time to time of the influence exercised by large publishing firms and corporations to have their books placed upon this list; but it is obvious that that influence might be just as great as it is alleged to be if the choice of books were entirely in the hands of the principals of the schools. There seems to be some ground for the criticism that old-fashioned books, or books implying obsolete methods of instruction, are, by reason of the influence of the publishing firms or from other causes, retained upon the list to the exclusion of text-books more in accord with the modern methods of education; the list certainly seems to be far from ideal, especially in the case of the books prescribed for use in some of the high-school subjects.

School-books are not free, but are to be provided by the pupils, generally within a week of their entrance into a class; the Board of Education, however, pays for books supplied to indigent pupils. Books for supplementary reading are provided in the schools, and nearly every school has a good school library for circulation and for reference. The Board publishes an excellent list of books suggested for school libraries; the last list (1907) contains the titles of 2,671 books, of which 2,531 are suitable for children, and the remaining 140 are reference-books for teachers.

* A report of the Committee on School Management, adopted by the Board on the 23rd May, 1906, is printed in the Appendix, and will give a good idea of the method of promotion.

[It may be interesting to quote here a digest of the school laws of the United States of America regarding text-books, which appeared in the Report of the Ontario Education Department for 1906. It is as follows:—

"The laws of the States of Delaware, Maine, Maryland, Massachusetts, Nebraska, New Hampshire, New Jersey, Pennsylvania, Rhode Island, and Vermont make it compulsory on school authorities to provide free text-books for pupils.

"The following States have provisions in their laws whereby the schools through the district, county, town, or corporation, as the case may be, may provide free text-books, if desired—Colorado, Connecticut, Iowa, Kansas, Michigan, Minnesota, Ohio, West Virginia, Wisconsin; while the laws of the States of Colorado, Illinois, Indiana, Michigan, Missouri, Nevada, South Carolina, and Virginia make provision for free text-books to those pupils whose parents or guardians are not able to buy them.

"The following States require a uniform series of text-books in all the schools: California, Delaware, Indiana, Kansas, Louisiana, Missouri, Montana, Nevada, North Carolina, Oregon, South Carolina, Tennessee, and Virginia.*

"Arkansas, Georgia, Iowa, Kentucky, Maryland, Mississippi, South Dakota, Washington, and West Virginia have provisions for county uniformity; while all the States, so far as can be ascertained from the Commissioner's report, require at least school-district uniformity in text-books."]

Head Teachers' Association.

A very useful and energetic society in Chicago is the Association of Principals, or head teachers. It takes up the study of various educational problems, often suggested by the Superintendent of Schools, draws up proposals for syllabuses of work, setting up special committees for these purposes, and in various ways assists the Board of Education, which is largely guided by its advice. Our Educational Institutes might with advantage be used to do more of this kind of work than they do at present. As with us, the relation between the officials and the teachers' representatives seems to be of a friendly nature. Reference has already been made to the valuable Report of the Committee on Geography, reproduced in part in the Appendix; in the Appendix also will be found another report of the Principals' Association—namely, the Report of the Committee on Mathematics. The association is also called together to discuss subjects brought before it by the Superintendent of Schools: for instance, when suggestions were made by the principal and staff of the Normal School for a modified course of study for the practice schools, the matter was brought before the principals to obtain their opinion thereon. (This course sets forth the underlying ideas of the work attempted in the public elementary schools of Chicago so well that it will appear in the Appendix, instead of the actual programme of the schools.)

One department of the Board of Education that should not be overlooked is the Department of Child-study and Pedagogical Investigation, the Director of which (Dr. Daniel P. Macmillan) is able to give most valuable advice, from the hygienic, psychological, or pedagogic expert's point of view, in regard to the treatment of children in various phases of their school life. A good idea of the work done by this department may be gained from its report for the year 1903, part of which is printed under its proper heading in the Appendix, and part is included in the Report of the Parental School.

Dr. Macmillan's report for 1906 devoted considerable attention to the question of the treatment of backward children. Some attempts (more or less experimental) had been made to deal with these children in separate classes (called "ungraded classes") in four of the city schools, and these attempts had met with a certain degree of success. Dr. Macmillan wished to emphasize the necessity to deal with the matter in a more systematic way. Among those in the ungraded rooms he found,—

First group; children of subnormal intelligence, and hence unable to do the work of the regular school classes.

Second; children who are incorrigible for several reasons, and are sent to these rooms purely for disciplinary purposes.

Third; children who are behind their classes in some school subject, and are returned to their proper grade work when this deficiency is made up.

Fourth; children unable to carry on the regular work of the course on account of the fact that they do not understand the English language.

* Probably none of these States, except California, can be said to be very advanced in matters of education.

The number in all the groups reported by the teachers of the 239 elementary schools in Chicago was 1,518, of which about 600 the Director of Child-study estimated as belonging to the first or subnormal group. These, he says, need special remedial measures. Ordinary elementary-school teachers, without special training, are not suited for the work; special teachers are necessary, as the courses must be drawn up with an immediate view to the needs of such pupils, and the rooms must be specially equipped. Again, the judgment of a teacher as to a child's intelligence is sometimes at fault. Dr. Macmillan found that from 5 to 10 per cent. of the children classed by teachers as of subnormal intelligence were not so, but belonged to one or other of the groups two to four above named. This points to the expediency of the rule recognised in Great Britain and on the Continent of Europe, that in determining whether a child is subnormal the special expert and the teacher should act together.

The proportion of subnormal children given seems high; at the same rate in New Zealand we should have over three hundred. Nevertheless, in each of our four chief towns we should probably find from ten to twenty such children; it might be expedient to establish an "ungraded room," say, in each of the four Normal Schools, for the milder cases, leaving the more marked cases, and those from other districts, to be treated at special homes like that now established at Otekaike.

High Schools.

The public High Schools of Chicago have one advantage over those of New York and other cities of the Eastern States, in that they are not quite so large, and the individual pupils have a somewhat greater chance of coming more directly under the notice of the principal. There were in 1906 seventeen of these schools, two being manual-training high schools. The total net roll was 12,024, so that the average number per school was just over 700, which is still too large for the effective personal direction and control of the principal. The average number in our five largest secondary schools in 1906 was 314; one of these had both boys and girls (Auckland, 526), the other four were boys' schools.

The same rapid diminution in the numbers for the successive years of the course is evident as in New York: of the total enrolment, 47·8 per cent. were pupils in their first year; 26·2 per cent. in their second year; 15·8 per cent., third year; and only 10·2 per cent. of the pupils were in their fourth year; or, in other words, 74 per cent. of the pupils were in the first or second year, and 26 per cent. in the third or fourth year. Assuming that all pupils entering in any year stay at the high schools for the whole of that year (which, of course, is in excess of the facts), the average high-school life per individual pupil lasts for 1·88 years. The falling-off in the last year is still more apparent if we take the boys alone: then we have—first year, 48 per cent.; second year, 27·3 per cent.; third year, 15·9 per cent.; fourth year, 8·8 per cent. The boys formed 41·5 per cent. of the total roll, the girls 58·5 per cent. If, however, we exclude the manual-training high schools, which admit boys only, we find that the boys formed 35 per cent. of the rolls, and the girls 65 per cent.

Examining the rolls of the secondary schools of New Zealand (1908), we find that 40·1 per cent. of the pupils are in their first year, 29·9 per cent. in their second year, 16·6 per cent. in their third year, and 13·4 per cent. in their fourth or a higher year; the proportions for the several years are almost the same for boys and girls, and the average stay of pupils at secondary schools is over two years: the boys form 57·2 of the rolls, the girls 42·8 per cent. Although the length of time spent by the average pupil at a secondary school in New Zealand cannot, in comparison with European countries, be considered satisfactory, yet it is somewhat greater than in the case of the Chicago high schools and very much greater than the average for all American high schools.

The high schools in the United States are, in general, strictly co-educational—that is, they are not divided into boys' and girls' departments, but boys and girls are taught together in the same classes. The great predominance of girls, especially in the upper classes, has accentuated some of the objections urged against co-education in secondary schools, which, introduced originally, as with us, on the ground of economy, had converted probably the majority of educationists to regard its many real advantages as deciding the balance in its favour as against separate secondary education for the two sexes. Mr. J. E. Armstrong, Principal of the Englewood High School, Chicago, with whom I had a most interesting conversation on this subject, has given much attention to the problem. In an article in the *School Review* he says that "the most serious objection to teaching boys and girls together in their early teens is that the change in the girl from childhood to womanhood takes

place much earlier than the corresponding change in the boy; at thirteen the girl is taller than a boy of the same age. The boy does not begin his rapid growth and change till fifteen or sixteen, when he passes the girl in height. As children of fourteen enter the high school, the girl is from one to two years more mature than the boy: she is already a woman in seriousness of purpose, in power of application, and in womanly instincts. During his first two years in high school the boy begins to grow rapidly. Indeed, so rapid are his physical changes that he finds himself unable to concentrate his mind upon anything. He needs more sleep and fresh air than ever before. Nature makes such drafts upon his stomach that he can do little else than eat, sleep, and exercise. No wonder most boys during these two or three years earn the title of 'that lazy boy.' If he works with the energy of a steam-engine while building a boat or in a game of football, he still fails to redeem himself from the reputation he has made in the girls' class-room. I say 'the girls' class-room,' because I think the class has gone through an unintentional evolution to suit the needs of those in the majority of numbers and maturity of mind." The inevitable result is that the boy's education suffers.

Mr. Armstrong, who desires to retain the great moral and social advantages of co-education, has attempted to solve the problem by what he calls the method of "limited segregation"—that is, separate classes for boys and girls in certain subjects. The experiments carried out in his own school have been, on the whole, very successful. The separation of the sexes has rendered it possible to use different methods of teaching, suited to the different stage of maturity of boys and girls respectively. As a result, to take one subject only, in the segregated classes a greater percentage of the boys than of the girls gained 75 per cent. of marks, or over, in a foreign language—a place where boys had been found before to fail. A slight loss was noted in moral tone and in deportment. The problem is worthy of attention in New Zealand, where many of our secondary schools are co-educational; as the schools increase in size, we shall, no doubt, become conscious of the same difficulties, which already exist on a small scale.

Boys or girls who have completed the full course in an elementary school, have passed a satisfactory leaving-examination, and are reported by their principals as qualified, are admitted free, as in New Zealand, to a high school. Those living outside the city are, however, admitted only under special circumstances, and have to pay $1.25 a week (£10 a year) as tuition fee; pupils must attend the school in the district in which they reside, except when transferred by the Superintendent of Schools (when he wishes to adjust the numbers in the schools). The privilege of being allowed to attend is strictly guarded; a pupil may lose the right not only by moral misconduct or lack of diligence, but by absence without satisfactory reason for six half-days in four consecutive weeks, or for defacing or injuring school property. It is not a matter for surprise, therefore, that the attendance is generally good, and that cutting or scribbling on desks or other school property is practically unknown. The subjects are for the most part nominally "elective," or optional; but in practice the principal controls the choice of work to a large extent; English is practically compulsory throughout the course, and Mathematics is generally taken, for the first two years at all events; Physiology is compulsory in the first year, and Physical Culture throughout the course; no pupil is allowed to take more than one foreign language in his first year, unless he is able to enter an advanced class in the second language; nor can any one in that year take up Stenography and Typewriting. No pupil can receive a diploma of graduation from the high school unless he has received sixteen credits (which correspond to eighty units as defined in the Free Place Regulations under the New Zealand Education Act); his course must include the special subjects of Drawing, Music, and Physical Culture; pupils who have completed two years satisfactorily may obtain a certificate, stating the work accomplished. The regulations contain one significant paragraph to the following effect: "Any pupil of marked ability who shall accomplish any piece of valuable work along lines of individual research within the scope of the High School studies, and shall submit the same with conclusive evidence that the work is original and the results valuable—such work to be done during the last two years of the curriculum—shall receive such credit or credits for this work towards graduation as it shall be worthy of, in the judgment of the principal and teachers." Some among us who are sceptical as to the possibility of research work being done even by University students would no doubt consider that this provision suggests an impossible ideal—an opinion which involves the conclusion that the acute and experienced men who direct educational affairs in America do not know their business. Examinations are held at the close of each year by the principals and teachers of the schools; outside examinations

are almost unknown, although the Superintendent of Schools has the right, if he sees fit, to cause all the pupils of all the schools to undergo an annual examination.

The programme of studies in the ordinary high schools, the manual-training high schools, and evening high schools, is printed in the Appendix.

In spite of the large foreign element in the population, the excellence of the English work is a distinct feature in the high schools. In foreign languages, the methods are varied; the official programme prescribes the natural or direct system in the teaching of German, but, with an inconsistency that the teachers themselves could not explain to me, seems to foster the use of the old system in the teaching of French.

The diverse character of the population of Chicago is reflected in the schools, and introduces difficulties into the organization and teaching which are practically unknown to us, except in a mild form in a few of our Maori village schools. A few examples may be cited: In the Crane Manual Training School, in the year 1906, out of 863 pupils, 315 were of American birth, 104 were German (born abroad, or native-born, but both parents born abroad), 55 were Irish, 77 Scandinavian, &c.; in the Englewood High School, out of 480, 249 were American, 70 Scandinavian, 59 German, &c.; in the Murray F. Tuley High School, out of 579, the number of Americans, Canadian, English, Scotch, and Irish together amounted to 32, the Germans numbered 109, and the Scandinavians 265; in the Burr School the total roll was 642, of whom 12 were American, 180 German, 307 Polish, 74 Russian or Lithuanian; in the Garfield School, 471 out of 664 were Russian; in the Dante School, 515 out of 567 were Italian; in the Jirka School, 401 out of 548 were Bohemians; and so on. Yet, in a few years, these children are all turned out American citizens, with trained minds, speaking English as if it were their mother-tongue, and as proud of their adopted country as if their ancestors had landed in the "Mayflower."

Evening Schools.

The large foreign element in the population mainly determines the character of the evening schools. Of the seventeen thousand pupils enrolled in those schools, more than half—8,596—were in classes for foreigners; of the remainder, 4,166 were in the regular elementary work, 631 in sewing, 636 in cooking, 743 in manual training, 947 in physical culture, 965 in book-keeping, 585 in stenography and typewriting, 593 in construction drawing, 187 in high-school English, 13 in Latin, 61 in French, 48 in German, 28 in Spanish, 76 in high-school algebra, 60 in physics, and 63 in chemistry. The average attendance was 9,714, or 56 per cent. of the roll. It will thus be seen that the amount of manual and technical work done in these classes was not large; taking the widest signification of the term, only 16 per cent. of the pupils were receiving instruction of this kind; five-sixths of the pupils were taking continuation courses, mostly elementary. In New Zealand in the same year, 1906, the average attendance at continuation and manual and technical classes, exclusive of school classes for manual work, was 17,707; of this number 46 per cent. were attending manual and technical classes.

To make a full comparison it would be necessary to take into account the work done by the manual-training high schools, and that done by the Lewis Institute (for the practical training of boys and girls) and by the Armour Institute, one of the best-equipped institutions for higher technical education in the United States.

Apprentice Schools.

These schools represent an attempt to give something that is an equivalent for the industrial-improvement schools of Germany or the trade schools in Switzerland; but so far their success is small. The idea seems to be an excellent one; but, notwithstanding that attendance is by law compulsory, there is apparently great difficulty in securing the attendance of the majority of apprentices. The law requires employers in any trade in which classes are constituted to send their apprentices to school for three months in each year; and by mutual agreement the classes are held during the months of January, February, and March. The method in which an apprentice school is constituted will be evident from the following notice appearing in the Chicago Board of Education Bulletin of the 21st December, 1903:—

"SCHOOL FOR APPRENTICES.

"The Committee on School Management reports that it is in receipt of a communication from the representatives of the Joliet Board of Arbitration, of the Chicago Masons and Builders' Association, and the United Order of Bricklayers and Stonemasons' Union, requesting that the Board of

Education provide rooms and teachers for the School for Apprentices to begin January 4th, 1904, and that this school be continued for three months of seven hours a day. They report that it will be necessary to provide for 160 students.

"The Committee recommends that this request be granted, and that the Superintendent be authorised to take the necessary steps for providing rooms and teachers for this school. (Report adopted November 25th, 1903.)"

For the term of 1906 the average membership of all the apprentice schools in Chicago, with a population of nearly two millions, was only 228; as very few attended the Y.M.C.A. classes for apprentices (accepted as an equivalent) it is obvious that many apprentices and employers were evading the law, and that the rules of the unions for penalising apprentices who do not attend school regularly were very laxly enforced. Three courses were provided in construction-work:—

Carpenters.

1. Make in wood-shop model cottages, barns, or other frame buildings to a scale, showing foundation-beams, framing, doors, and sides; partitions, roof-constructions, sheathing, lathing and shingling, window-frames, bay windows, doors inside and out.

2. Make working-drawings, write out the specifications, and compute the cost of labour and material used in No. 1.

3. Study and construct in detail, for both brick and frame building, window-frames, outside door-frames, porches, dormers.

4. Practice on inside finishing-work, casings, wainscoting, mop-boards, panelling-grounds, corner beads, mouldings, beams, columns.

Masons.

1. Study different types of foundations on firm soils and on compressible soils.

Make drawings and scale models of foundations used under light and under heavy buildings. Footings, centre of pressure, piles, grillage, concrete, masonry wells, caissons, offsets, inverted arches, retaining-walls, vault-walls, door and window spaces.

2. Laboratory work on,—

Lime—characteristics, slaking, and mixing.
Stands for masonry; compositions.
White and coloured mortars.
Hydraulic limes.
Kinds of cement—analysis, testing, strength.
Cement mortars.
Effect of heat and cold upon fresh and set mortars.
Concrete—use in modern foundations and constructions, mixing, proportions, testing strength of different mixtures.

3. Study common types of building-stones as to use, strength, durability, composition, &c.

Bricklayers.

1. Working-drawings, blue prints, perspectives, and scale models of dwellings and large buildings, which are representative of the typical styles of brickwork,—

American bond.
English bond.
Flemish bond.
Brick veneering construction.
Architectural terra-cotta.

2. In the class-room, give practice in writing out specifications and contracts, and compute the cost of material and labour as used in No. 1.

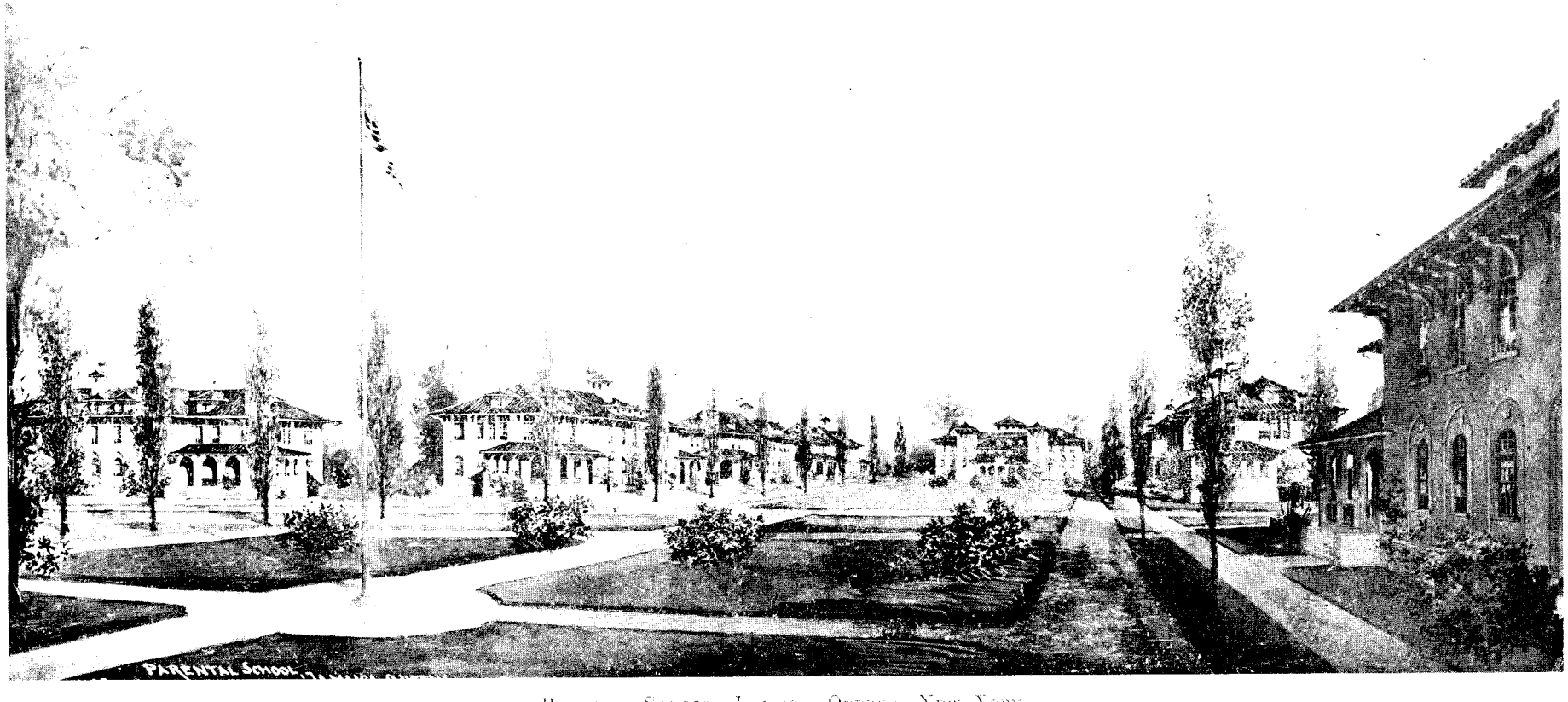
3. Laboratory work,—

Bricks—composition, manufacture, glazed and enamelled, paving, firebrick, coloured press-brick.
Lime, cement, mortar, sand.
Thickness of mortar joints; effect of cold and heat.
Wetting brick, effloresence.
Damp-proofing.
Crushing-strength of brickwork.

The courses last for four years, the usual currency of an apprenticeship.

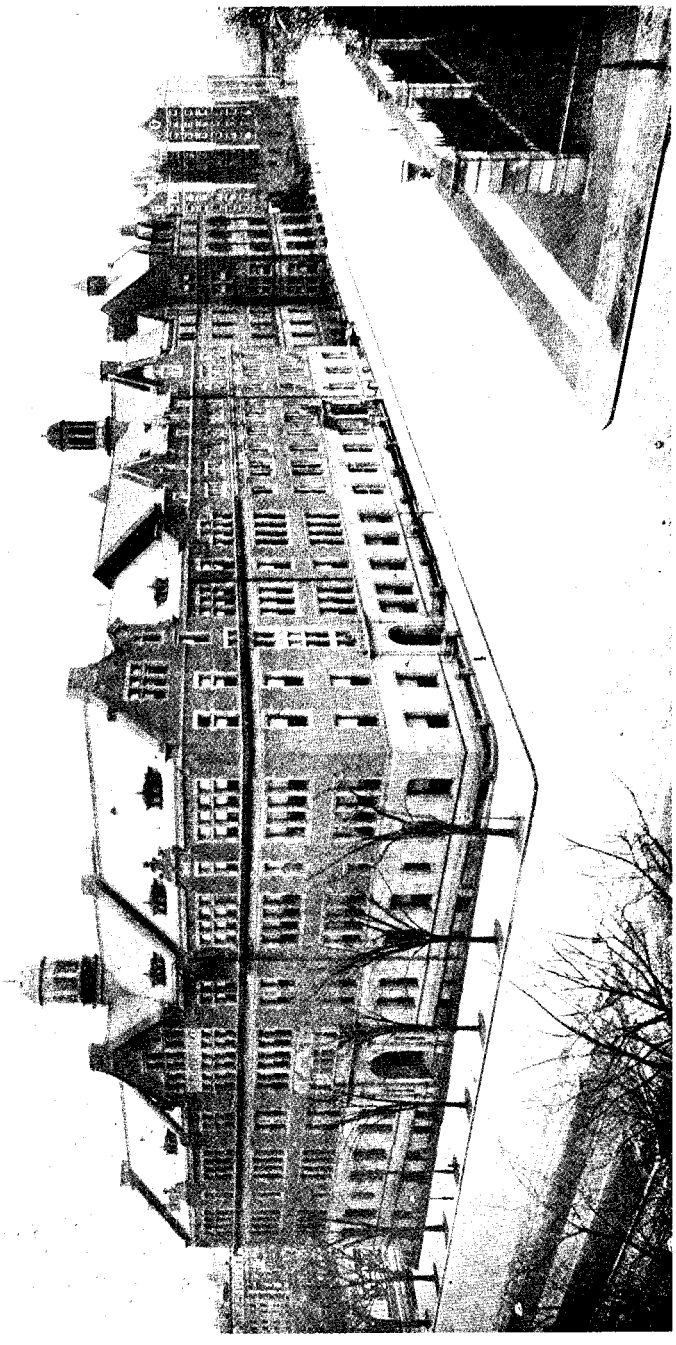
The Parental School

is a residential truant school. Its aims and work will be best understood from the report of the Superintendent of the school for the year 1903, which appears in the Appendix.



PARENTAL SCHOOL, JAMAICA, QUEENS, NEW YORK.

A private school on the cottage-home system, like the Weraroa Boys' Training-farm, N.Z.



TEACHERS' COLLEGE, HORACE MANN SCHOOLS, NEW YORK.

American Ideal of Education as conceived in the Teachers' Colleges of New York and Chicago.

The schools attached to the Teachers' College of the Columbia University and to the School of Education of the University of Chicago focus the most advanced movements that are going on in America in regard to the ideals and methods of education. In other schools, especially in the public schools of New York and Chicago, we may clearly trace the influence of the same general principles, and find teachers using methods based to some extent upon them; but in the schools named we find the work of teaching being carried on by men and women who are imbued heart and soul with a certain ideal of education, and who seem to believe in it and to understand it so well that they can carry it out with logical thoroughness of detail and with pronounced success in the results.

The primary object of education is to the minds of these reformers not the mere acquisition of knowledge, or even the development of powers in themselves, but social efficiency—the *social* efficiency of the *individual* citizen; or, as the Principal of the Horace Mann Elementary School aptly puts it, "Education involves the development of the natural powers of the individual, and the acquisition of knowledge, so that he may become adjusted to the ideals towards which society is moving. 'Social efficiency' is, therefore, the best brief expression of our goal, emphasizing the capacity to do as well as to know." The three Rs have become with us a phrase and a fetish, and we have been apt to forget that, valuable instruments as they are in part of our education, mainly that part which is got through the medium of books, they can never be the real aim even in our elementary schools, where, as everywhere else, "the primary object is to enable a man to play a solid part in practical life, and to distinguish himself if possible; and the secondary object should be to enable him to use his leisure hours vigorously, and with some intellectual zest*"—always, of course, with a view to his social relations and duties.

In attempting to carry out the idea of training a child for social efficiency, the reformers have regard to another very important fact, which, in spite of Froebel, is still often forgotten—namely, that child-life is not simply a preparation for the future life of the adult, of the workman or professional man, or of the mother, but essentially and truly a part of life itself; accordingly, if we so call forth the child's activities, train his observation and thought, develop his physical and moral powers, as to make him realise his own child-life in the best way in his relations with his companions and with others, we are far more likely to produce in him as a member of human society a higher degree of efficiency than if we cling uncompromisingly to the old pedagogic ideals. To one who has been accustomed to see the regular formal work of our elementary and secondary schools, it is, at first, somewhat of a shock to walk into class-room after class-room, and to see in one children dressed as North American Indians sitting in front of miniature wigwams; in another children binding and decorating their notebooks, or weaving cloth, or making toy watermills (which, indeed, work well in a rough way); here making up rimes, and trying to find tunes to them; there making a forge, or building a Roman galley; here telling old Greek or Saxon fairy tales to one another and to their teacher, or dancing a Norwegian folk-dance; there pressing flowers, or drawing a crayfish that lies sprawling on a tray before them, or tempting a shy grey squirrel to take nuts from their hands: when one sees all this, however often one may have read of it, one is inclined to make the remark that this is glorious play; but what about the mental discipline, the thorough mastery of a subject, the habits of accuracy and perseverance (supposed to be) acquired in learning the dry details of grammar or in working out hard sums in complex fractions? But when it is found that these children can speak and read, write and count at least as well as children of the same age in our schools; that children trained on the same lines have passed into the High Schools, and, after four years there, have reached a standard of knowledge that, judged by our tests, is higher than that generally reached by the best pupils of our secondary schools; that, in addition, they have gained a practical power in observing and handling the things around them and a practical outlook on life that our pupils seldom get until they get it from the hard experience of business—then it cannot be denied that the system that affords these results is worth careful examination.

It is often said that the American ideal is that of making money; and I had really expected to find this spirit making itself evident in the schools. I was agreeably disappointed: in the American schools I visited there was apparently less of the commercial spirit than in the schools of Great Britain —say, London, for example—unless, indeed, it be fostering the commercial

* A. C. Benson, *National Review*, September, 1907.

spirit to train a boy, say, to design the most beautiful cover he can for his notebook, and to execute it to the best of his ability in leather or cloth, or for a girl to do similar work on a travelling-bag she makes for her mother, or for a child to learn accuracy by the discovery that he has made his measurements so carelessly that the parts of his miniature machine won't fit and won't work. Remembering that these schools in question are picked schools, and that the teachers are picked teachers, it is still something to say that they can express themselves in their mother-tongue as well as Italian, or Swiss, or German children can in theirs; that they can read, and write, and do their arithmetic as well as children of the same age or class in England or Scotland; that they can make toys and working-models better than Swiss children; can sing better and know more about music than German boys and girls; can draw or design in colours, or in light and shade, well enough to compete with junior students in a school of art; have a more intimate knowledge of nature, and of geography and history in their human and civic significance than could probably be found to be possessed by children in any land; and that at the same time, unlike, say, the German boy or girl, they can play as eagerly and as joyously as any children born in sunny New Zealand.

The children find out as much as they can for themselves; they learn to do and to make things themselves, discovering by their own trials and suggestions the best ways of doing and making them; they learn to express themselves in oral speech, in writing, with charcoal or brush, with chisel, or needle, or loom; they act over again or represent in miniature on their sand-tables the life of the past, the primitive man, the Greek or Roman, the Viking, the mediæval knight, the discoverers and settlers of America, the people of many lands; they rear and watch animals and plants; they hear and tell again the old classic stories of many literatures; they go through the process of making simple objects in wood, metal, clay, and textile fabrics, in order that they may understand the relation of the fundamental manufactures to the progress of mankind from savagery to modern civilisation. The teacher guides, suggests, corrects mistakes, but gives very little instruction; with us the teacher teaches too much, and often the most earnest teachers are the worst offenders in this respect. Some of the class-rooms resemble workshops at all times, others are transformed into workshops for this or that lesson. It would be a mistake to suppose that there is no "drill" in arithmetic, or in word-building, or, later, in the grammatical forms used in speech; but the drill periods are short, and often the children are allowed to suggest the form the drill should take—I saw, for instance, a splendid spelling lesson given by means of a game at dumb-crambo, all the riming words being written on the board, and explained by the children left in the room. The acting by those who went out had to be correct, in accordance with historical or other facts known to the children, or it would be criticised by the other children. After the word was guessed, other possible rimes were written on the boards, the child writing a word having to explain how it should be acted. The children were about eight years old. In twenty minutes or half an hour they really learnt how to spell more words than they could have learnt in any other way—and they knew the meaning of the words.

Great attention is paid to physical education; the children are regularly measured and examined from time to time by a doctor, who advises the staff in special cases as to changes to be made either in the physical exercises or in the mental work of the child.

There are gardens for the children—even those of Grade II (about seven years old) have their plots for work and observation; the greenhouse is found very useful, especially in winter-time, both for the students and for the children; the latter also rear plants in pots and glasses. Aquatic animals and plants are to be seen in the tanks or aquariums, and they, as well as the animal pets, are cared for by the children. The children go for many walks and excursions for the purpose of geographical and other nature-study, or to visit factories, museums, picture-galleries, or spots of interest in local history. Both in New York and Chicago the elementary schools, and the high schools connected with the Teachers' Colleges, have their own special papers—in one instance, at least, this is printed on the premises by the children themselves. Attached as they are to two of the best Teachers' Training Colleges in the world, these schools are necessarily experimental. Not being part of the State system, fees are charged; the fees are rather high, compared with ours—at the Horace Mann Kindergarten the charge is £15 a year; in Grades I to IV, £30; Grades V to VII, £40; High School, £50. All the pupils are day pupils. In the New York Teachers' College the Horace Mann Elementary and High Schools are used only for observation purposes, the Speyer School (which is free) being used for practice in teach-

ing. At the University of Chicago all the schools attached to the Department of Education are used both for observation and practice.

It may be said that the directors of these schools have adopted the best methods of Germany and Great Britain, and then, putting before them the ideal of social efficiency, have woven those methods into a remarkable but albeit self-consistent system. The result is well worth the serious study of all our teachers. Whether many of the actual methods could be adopted, say, in our small country schools is doubtful; but we might do worse than imbibe the spirit of the system, and then under that influence endeavour to modify our teaching in accordance with our own local needs.

The fairest as well as the best way to present the views of those who have established these schools and are carrying out these experiments is to let them speak for themselves. Accordingly, in a special appendix are printed extracts from articles by various members of the staff of the Horace Mann Elementary Schools, from the programme of the Horace Mann High School, and from the announcements of the University Elementary School and University High School at Chicago.

In the Horace Mann Schools the elementary course—that is, subsequent to the Kindergarten—lasts for seven years, and the High-School course for five years, or twelve years altogether. The elementary-school course at Chicago is an eight-year course, and the High School requires four years (though a fifth year may be taken); so that the compulsory course for "graduation" is twelve years in all.

In both High Schools the number of "electives" or optional subjects is nominally large; but in practice it is much reduced owing to the discretion placed in the hands of the Director of each school.

Financial Aspects of Education in the United States of America.

There is no general system of public education in the United States, but the financial support of the public schools (elementary, high, &c.) is left to the several States and the local communities, except that Congress has given the States in which the public lands were located large grants of these lands from which to make permanent endowment funds for the schools. In nearly all the States which do not have the land-grant fund, permanent school funds have been created out of their own resources. The annual revenue derived from these land-grant and other permanent funds constitutes, however, only a small fraction of the aggregate funds required for the maintenance of the public schools, and with the increase of population it is a constantly decreasing fraction. In 1899–1900, out of a total school revenue of about £45,000,000, only £1,900,000, or 4·2 per cent., was derived from the income of permanent funds. By far the largest part of the money required for the proper maintenance of the public schools is, therefore, raised by annual taxation. The method now generally followed is to provide part of this annual school fund by State taxation, and part by county, town, school-district, or other local taxation. In 1899–1900 about 69 per cent. of the total amount of school revenues was raised by local taxation and 16 per cent. by State taxation, the remaining 10 or 11 per cent. being derived from fees, gifts from private individuals or societies, and from miscellaneous sources. But the relative amounts raised by State taxation in different States varied from nothing to 77 per cent.

In Massachusetts for many years it was the plan to throw the whole burden of school maintenance on the local communities; the consequence was that the schools in the wealthy manufacturing towns far outstripped the country schools in every particular. Some rural communities, which struggled bravely to maintain a proper basis of efficiency, found the burden of school taxation an intolerable weight on agriculture. More recently the State has given some measure of aid to country schools on the basis of their own reasonable efforts to help themselves. But even now each adult male in Massachusetts contributes to the support of schools through local taxation to the amount of £3 7s. 2d. a year. In North Carolina, on the other hand, a very large share of the school moneys has been raised by State taxation, as was perhaps natural in a community where the population was scattered and the aggregate wealth comparatively small; the result, however, according to Dr. A. C. True* (to whom I am indebted for most of the above facts and statements) has been that this plan has apparently paralysed local effort and kept the average length of the school term at a very low level. Dr. True lays down the following principles:—

"(1.) The aim should be to provide every child of school age with equal opportunities for an education;

* "Some Problems of the Rural Common School." By A. C. True, Ph.D.; "Yearbook of the Department of Agriculture," 1901.

"(2.) The whole wealth of the State should be made available for educating all the youth of the State; and

"(3.) The individual communities requiring schools should contribute according to their means toward the support of their own schools."

In Massachusetts, although the State contribution is small, two very wholesome rules are observed in its distribution—namely, (*a*) a portion of the State funds is divided among the townships on the basis of the ratio which the township's school tax bears to its whole tax; (*b*) another portion recognises the principle that the poorer the community the more it needs the help of the State to maintain its schools. This still leaves undetermined the relation which should exist between the total amounts of State aid and local school taxation. Bound up with this question to some extent is the proportion of State and of local control of the schools; but hardly anywhere is that proportion directly determined by the proportions which the State and the county or township respectively contribute; in nearly all democratic countries the chief control of the schools rests with a local or district authority, with the township or county, or both together. The States of Australia, where finance and control are both functions of the central departments, present the first exception that comes naturally into our minds. In New Zealand, on the contrary, almost the whole cost of education is borne by the State, and nearly all the control is in the hands of the local authorities—Education Boards and School Committees. In spite of the disproportionate size of some of the education districts, this plan has on the whole worked extremely well; it might, conceivably, be desirable to readjust the districts, or to alter details such as the mode of election of members of Boards and Committees; but he would be a rash man who would propose, save, perhaps, in one respect, to lessen the amount of local control of our schools.

The Department should be the guardian of the public funds—that is, it should have power to see that the funds voted by Parliament are spent to the best effect for the purposes for which they are voted; it should disseminate information useful to administrators and teachers; it should issue regulations in all matters in which a certain degree of uniformity is desirable; and it should be in a position to co-ordinate the several parts of the whole system so as to make a complete whole. At present it is unable to do this except in a partial manner, as it exercises no inspection over the great majority of the schools—viz., the public schools of the Dominion. It is almost true that the Department has no eyes to see clearly matters it has to deal with every day. But it would be a mistake to think that this question would be solved by the simple method of transferring the Inspectors of Schools from the Boards to the Department. Although the Inspectors of the Boards have not the autocratic powers possessed by the Superintendents of Schools in America, yet they are the expert advisers of the Boards; it would be a poor service to the education system of the Dominion to take away the "eyes" of the local authorities, which have, and should continue to have, the main control of the schools, in order to give even the necessary degree of vision to the Department. Even in Great Britain, where His Majesty's Inspectors are officers of the Education Department, the local Councils or Education Committees have their own Inspectors or other expert advisers. But it should not be impossible to devise a plan that would overcome both difficulties. If each Board had as its chief executive officer an educational expert with duties akin to, but not so wide as, those of the Superintendent of Schools in an American city or county, the Board would not lose its adviser when the Inspectors were transferred to the central Department. It is not a sound principle that so-many hundreds of thousands of the State's money should be spent, and yet that the State should have no direct means of knowing that it is spent to the best advantage.

The only two branches of the education system in New Zealand that at present receive contributions out of rates levied by local authorities are the industrial schools branch and the technical branch: in the former case, payments are made out of rates by the Charitable Aid Boards for the support in whole or in part of indigent children sent to industrial schools; but the questions involved therein are evidently connected with other questions that do not properly come within the sphere of education.

As to technical schools, it has been the practice to require that sites for technical schools should be provided locally, and they are often provided by local authorities, which also in many instances vote moneys out of rates in aid of the maintenance of technical classes, subsidies of £1 for £1 being paid by the Government on sums so voted. It may be expedient in the future to extend this principle; if so, it should be put upon a more systematic basis. In like manner, it is possible that the vexed question

of grants for new school-buildings, where the Boards are always in the position of applicants for money and the Department in that of the jealous critic of expenditure, might be settled much more easily than it is at present, if a certain measure of local contribution out of rates were required, and the Government subsidies thereon were determined by some more or less automatic rule. In any such cases it would be necessary to determine the question of the proper proportion that there should be between the contributions of the Government and of the local authority. It may be of interest, therefore, to note the proportion of general and local taxes devoted to education in certain cases in other parts of the world :—

		Out of State Taxes.	Out of Local Taxes.
Switzerland	Primary	40·0	60·0
1. Bund and	Secondary	61.5	38·5
Cantons	Technical	70·3	29·7
2. Communes	Higher	89·9	10·1
	All branches	51·9	48·1
Chicago	Elementary and secondary	3·9	96·1
United States	Elementary and secondary (average)	18 8	81·2
England	Elementary and higher elementary	53·7	46·3
Wales	Elementary and higher elementary	56·6	43·4
Scotland	Elementary, continuation, secondary	52·3	47·7
Ireland	Elementary	92·1	7·9

VARIOUS TOPICS.

Agricultural Education in America and Europe, and in New Zealand.

In spite of the fact that the United States of America have made good provision for higher agricultural education, and have in existence forty-five agricultural colleges (including those colleges that have a department of agriculture), the total bulk of agricultural instruction of all kinds (elementary and advanced) actually being given is probably not greater in proportion to the population than it is in New Zealand. But there is such an awakening in the minds of all public leaders as to the importance of widespread and sound agricultural education, and such vigorous steps are being taken to promote it in most of the States, that before long we shall be left far behind unless we move rapidly too.

In thirty States the teaching of agriculture is either compulsory or permitted in public schools; ten of these States—Alabama, Georgia, Louisiana, Maine, Maryland, Mississippi, North Carolina, South Carolina, South Dakota, and Wisconsin*—require the teaching of agriculture. Those marked with a star, together with Nebraska, New Hampshire, and Michigan, make agriculture an obligatory subject for teachers' certificates; while eight other States—Connecticut, Massachusetts, Indiana, Missouri, California, Kentucky, New York, and New Jersey—are training teachers and otherwise preparing for the introduction of the subject into both elementary schools and high schools.

Already there are agricultural high schools in Alabama, California, Minnesota, and Wisconsin; Georgia is just establishing eleven similar schools, and the Legislature has decided to give towards their maintenance all the agricultural inspection fees collected (about $6,000 a year). Each community in which such a school is situated must give 200 acres of land and the necessary equipment; the people are subscribing enthusiastically, and $800,000 in land and equipment has been offered for these schools. As the Massachusetts Commission on Industrial Education says in its report, "in Europe there is the universal recognition of the necessity of special education for every form of industrial life," including agricultural education.

It has been stated again and again that the high position attained by Germany in the industrial world is due not to its special education, but to the high standard of its elementary, secondary, and higher institutions for general education. Nothing could, in my opinion, be more misleading; to take one fact alone—the parts of Germany where the greatest general industrial progress has been made are not coterminous with those in which elementary and secondary education stands at its very highest level, but they are coincident with those in which for many years great attention has been given to industrial education—that is, to special training for vocations. In some parts of Germany, Austro-Hungary, and France, in Switzerland, Denmark, Norway, and Sweden, agriculture, by reason of local

needs, has received much of this attention. Even Great Britain is waking up to the need for the agricultural instruction of its rural population; for many years it has made in its characteristically unsystematic way a very fair amount of provision for the manual and technical instruction of those engaged in the mechanical trades; in many of the counties, similar efforts, but better thought out and more systematic, are now being directed towards agricultural education. Canada has excellent agricultural colleges, and is carrying on the training of its rural teachers so vigorously that in a short time it will have quite an army of instructors skilled in the teaching of agriculture and of domestic science—although, at present, I imagine that even in Ontario, the centre of this activity, nature-study and elementary agriculture are taught in a smaller percentage of schools than in New Zealand.

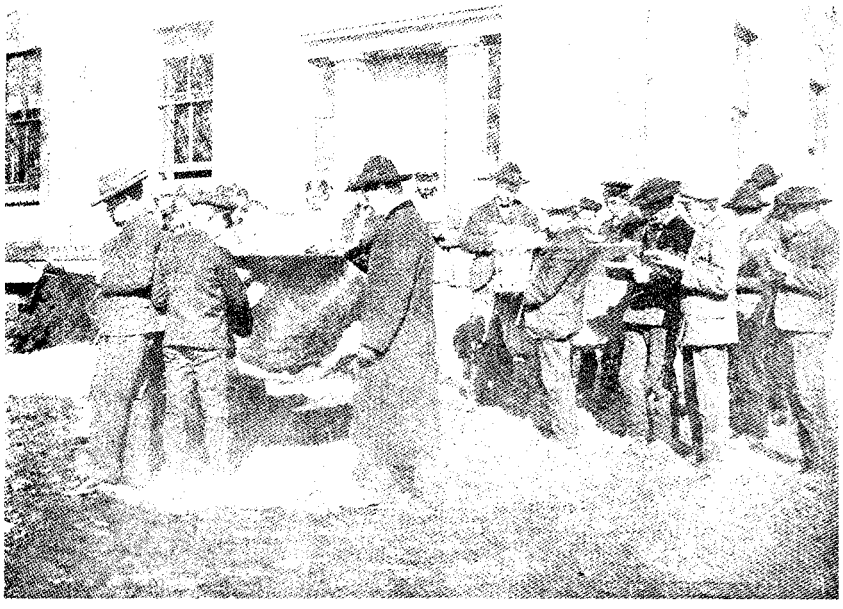
The Ontario Agricultural College at Guelph, which has for years stood high in reputation as an institution giving a high standard of training in agriculture, has linked with it the Macdonald Institute, where women are trained as rural teachers, particularly in domestic science; and its influence in stimulating work in nature-study and agriculture among teachers is very great. The establishment of the Macdonald College, at St. Anne's, near Montreal, with its threefold institutions—namely, agricultural college, college of domestic science, and college for the training of rural teachers—may be taken as a sign of the times. It is under the control of Professor Robertson, has been endowed by Sir John Macdonald with two and a half million dollars for land, buildings, and equipment, and with two and a half millions more for maintenance. With the strong staff it possesses, and its laboratories for nature-study, botany, chemistry, physics, animal anatomy, and so forth, it must soon produce a marked effect on the farming industry of Canada.

These instances are quoted in a general way to give emphasis to my recommendations set forth in the remarks on the scheme for agricultural education indicated in the diagram. This scheme does not involve a radical revolution or the establishment of a large number of new institutions, but merely the expansion of the work of those we already possess, and a proper co-ordination of the several parts with one another.

After seeing the various schemes of agricultural education in various countries, I am of opinion that we have at present nearly all the machinery for a complete system suited to the circumstances of the country. The steps in the various ladders from the primary school to the agricultural expert with the degree of Bachelor of Agriculture or Bachelor of Veterinary Science, or the trained farmer, are shown in the following diagram for a scheme of agricultural education in New Zealand.

Plant-life Class at the Waterford High School, Pennsylvania.
(U.S. Dept. of Agriculture—Year-book, 1905.)

Live-stock Class studying Sheep on a Farm, Waterford High School, Pennsylvania.
(U.S. Dept. of Agriculture—Year-book, 1905.)



Live-stock Class judging Dairy Cows, Waterford High School, Pennsylvania.
(U. S. Dept. of Agriculture Year-book, 1905.)

Live-stock Class examining a Horse, Waterford High School, Pennsylvania.
(U.S. Dept. of Agriculture Year-book, 1905.)

SCHEME OF AGRICULTURAL EDUCATION FOR NEW ZEALAND.

PRIMARY SCHOOL (age, 5 or 6 to 13 or 14), Nature-study, taken by all; Elementary Agriculture or Dairy-work, taken by—

City Schools—a few.	Town Schools—some.	Country Schools—nearly all.

SECONDARY (2 to 4 years)—*Free Places.*

City High Schools: Science—viz., Physics, Botany, Chemistry.	Country High Schools: Some take Agriculture.	District High Schools: Nearly all take Agriculture or Dairy-work.

Free Places.

Afternoon and Evening Classes: English and Agriculture, Dairy-work, &c. (Junior Courses.)

HIGHER (2 to 4 years): AGRICULTURAL COLLEGES; DAIRY SCHOOLS; VETERINARY SCHOOL; TRAINING COLLEGES.—*Bursaries.*

4-year course for degree of B. Agric., *or* B. Vet. Sci.	2- or 3-year course.	2-year course at Agricultural College. / 1 year at Training College.	2 years at Training College. / 1 year at Agricultural College.
Farmer; Veterinary Surgeon; Director of Agricultural Instruction; &c.	Farmer; dairy-factory manager; cattle-inspector; &c.	Special Teacher of Agriculture, &c., in schools.	Rural Teacher, in district high schools, &c.

Afternoon and Evening Classes—Senior Courses; followed in some cases by 2-year course at Agricultural College or Dairy School.

Short Winter Courses for Adult Farmers.

Farmer; dairy-foreman; &c.

SUPPLEMENTARY.—(i.) Experimental Stations (Agricultural Department): to complete training, or to bring knowledge up to date, or for special research.

(ii.) Farmers' Societies (in connection with all the above branches); farm experiments in collaboration with Agricultural Colleges and Experimental Stations; Home Reading Circles; itinerant lectures (Agricultural Department); Conferences.

GENERAL COUNCIL OF AGRICULTURAL EDUCATION (Advisory), consisting of representatives of the Agricultural and Education Departments, Agricultural and Veterinary Colleges, Dairy Schools, Controlling Authorities of agricultural classes, and Farmers' Societies.

The following explanations will help to make the matter clear :—

1. All children in primary schools should receive instruction in nature-knowledge (nature-study).

2. All country primary schools (and as many town schools as possible) should have school gardens and a course of elementary practical agriculture. (At present about 450 schools in the Dominion have this.)

3. Attendance at school during the next period (roughly, from the age of thirteen or fourteen to the age of sixteen) should be universal—namely, at high schools, technical day schools (not shown in the diagram), district high schools, or at afternoon or evening classes for those compelled to go to work. Either attendance should be compulsory, or inducements should be held out to boys to attend. Junior free places are now available at all these schools and classes. (For girls at this and other stages there should be courses in domestic science, with the option, for part of the time, of taking, say, dairy-work or horticulture, or bee-keeping). In all district high schools, except, perhaps, some of those in mining districts, a junior course in agriculture should form part of the programme. Attention should still be given to other branches, especially English, arithmetic, and practical mensuration, drawing (of plans and of diagrams to illustrate the work in agriculture), simple book-keeping, physical geography (from the point of view of the farmer—really a part of agriculture) ; while civics and military and physical drill should not be neglected. Rural high schools and most of the high schools in the smaller centres, which have really a greater interest in agriculture than in any other industry, should include similar work in their programmes. The time-table in these schools would be somewhat as follows : English, 6 hours a week ; arithmetic, book-keeping, and mensuration, 5 hours a week the first year, 4 hours the second year ; agriculture, 4 hours a week the first year, 5 hours a week the second year ; drawing, physical geography, civics, military drill, physical instruction, each 1 hour a week ; other subjects (woodwork, &c.), 3 hours a week : total, 23 hours a week. In the high schools, if a foreign language is taken, English may be cut down to four hours, and one hour or one hour and a half taken from the supplementary time of three hours. The classes for those who have had to leave school should, if possible, be held in the afternoon—say, twice a week for three hours during thirty weeks in the year, avoiding the busiest times of the year. The holding of these classes during the afternoon may involve a little sacrifice on the part of the farmer, but the gain in efficiency in comparison with evening classes is recognised all over the world as so great that I am sure the sacrifice is worth making. If two afternoons a week cannot be given, perhaps one afternoon can be spared, and the remainder of the work done in the evening, or all the work may be done in the evening. There seems to be no special reason why, for part of the year, at all events, agricultural classes should not be held, say, from 4 to 7 or from 5 to 8.

Where there is a district high school within reach, these clasees should be held there so as to make use of the laboratory and equipment at hand.

4. In the next period of life (about sixteen to eighteen years of age) the work in agriculture (senior school course) would be continued, and become more specialised. Even the high schools in the large centres might give some of their boys the option of taking it. Senior free places are tenable during this period at all the schools. I think there should be some addition to the grants now given to district high schools, high schools, and to afternoon or evening classes—say, in the shape of bonuses on all pupils who take complete courses in agriculture.

5. There should be two agricultural colleges, one for each Island, affiliated to the University of New Zealand, doing more extended work than is now being done at Lincoln. Each of the colleges should make it possible for a student to take :—

(*a.*) A full four-year course,

(*b.*) A three-year course,

(*c.*) A two-year course,

(*d.*) A special one-year course for teachers.

A general course in dairy-work should be given in one of the departments of each of the colleges.

(*a.*) The four-year course should be taken by students coming from high schools or district high schools, after four years therein. Many of them would wish to become agricultural experts or directors of

agricultural instruction, and to take the degree of Bachelor of Agriculture in the University; the University entrance scholarships and bursaries are available for this course.

(*b.*) The three-year course, by those holders of scholarships who have spent two years in a high school or district high school, do not aspire to the B. Agric., but are able to spend three years at the College, receiving a Diploma of Agriculture at the end of the course; the first two years will be met by the present Senior Board Scholarships, which should be tenable at an agricultural college, if the holders are sixteen years old and otherwise suitable. It would be a simple matter to extend the tenure by a year.

(*c.*) The two-year course, by some who wish to become special teachers of agriculture, and for that purpose are willing to spend one year afterwards at a training college to learn the principles and methods of teaching. The two-year course might be taken by any other pupils who have satisfactorily completed four years at a high school, district high school, or at afternoon or evening agricultural classes. To make it equally open to all of them, rich or poor, it would be necessary to give some aid in the form of agricultural bursaries.

(*d.*) Teachers who had passed through the training-college course satisfactorily should be encouraged to take a year's course at the agricultural college; their allowance should be continued (under proper conditions), and they should receive credit, in the class of their certificate, for the additional training. Instead of doing this, however, some of them might, if they had previously done a fair amount of work in agriculture, go on similar conditions to the experimental stations of the Agricultural Department, if that Department could arrange to receive them.

6. There should be short courses for adult farmers and others—for those who had not gone to the agricultural colleges, in order to extend their knowledge, and for all in order that the knowledge of agricultural science and practice already acquired might be kept up to date.

7. There should be attached to the technical instruction branch of the Education Department a trained organizing Inspector of Agricultural Instruction, who should inspect all schools and classes receiving grants, and be ready to give his advice and assistance to any Education Board, High School Board, or other authority applying for it. He should keep in touch with all branches of the work.

8. To make the scheme as successful as corresponding schemes are in certain parts of the United States, it is necessary to secure the co-operation of the farming community by means of farmers' societies, which should be in touch with all branches, but especially with the agricultural colleges and with the experimental stations. Included in their work might be special experiments to be conducted on the farms of individual farmers, the formation of home-reading circles in agriculture, reading circles in agriculture, and the management of periodic conferences and of short courses of lectures by itinerant lecturers on special branches. Small subsidies might be given, on the basis of pound for pound, to such societies, if they did the work indicated.

9. It might be deemed expedient after a time to have a National Council of Agricultural Education, as in the United States, having on it representatives of all the bodies concerned in controlling such education—including Boards of Education, High School Boards, the university colleges, the agricultural colleges, the Departments of Agriculture and Education, and the farmers' societies.

It will be seen that the scheme projected involves some increase of expenditure; but, from what I have observed elsewhere, I am convinced that the improvement and extension of agricultural education would lead to an immense increase in the bulk of our agricultural production, and thus solve, or aid in the solution of, many economic problems—as of the increase of wages and the maintenance of our position in the markets of the world. Further references to agricultural education and further details relating to it will be found in the Appendix to this report.

Consolidation of Schools and Conveyance of Children.

This plan has much to recommend it when the circumstances are favourable to its being carried out successfully. It has been widely adopted in the

United States, beginning in Massachusetts in 1869, and spreading thence in all directions; there are now eighteen States in which the consolidation of schools and the transportation of pupils at public expense are being tried to a greater or lesser extent. The advantages are chiefly educational: these are most evident when, instead of attending a small one-roomed school with probably an uncertificated teacher in charge of all grades, the children are taken to a well-built, fully equipped school, with two or three rooms and two or three trained teachers; they are not so evident when the children are taken simply from a small school, with eight or ten children, to a somewhat larger school under the charge of one teacher, although even here there may be an educational advantage due to the fact that the last-named teacher may be trained, whereas the teacher of the small school is almost certainly not trained. The roads should be fairly good, and the distances not too great—not exceeding, in general, five or six miles—or else the cost of conveyance becomes too great to be outweighed in the minds of the ratepayers by the advantages. In the United States the expense is often reduced by arranging for the same driver to carry the mails. It is held that the children gain not only in the matter of instruction, but in the widening of mental outlook from mixing with a larger number of children coming from other places; it is found, too, that the children are better in health, for, being conveyed in covered vans, they are less exposed to bad weather, and attendance is naturally much more regular. The cost of conveyance is generally balanced, or nearly so, by the saving in salaries, and in the cost of buildings and their maintenance. It must be remembered that counties have to provide the greater part of the money for these items, not the Central Government as in New Zealand; a saving in cost would not appeal so strongly to the inhabitants of any district in New Zealand as in the United States.

The plan has been tried in Canada, but is not generally carried out; as a rule, the roads are not good enough. In the case of the Guelph experiment, rendered possible by the generosity of Sir John Macdonald, who established a model central school on the estate of the Ontario Agricultural College, the majority of the townships from which the children came have voted against the continuance of the system; but the central school is very awkwardly situated with respect to the townships, and is not so near to some of them as other large schools are.

In several of the States of the Union children are conveyed to high schools, and obtain a secondary education they could not get without boarding away from home.

There are no doubt many localities in New Zealand where the plan of conveying children could be adopted with great advantage. I should on all grounds advise its adoption where the roads were good, the distances not too great, and where the children would attend a school with two or three teachers instead of a small one-teacher school.

The Improvement of the Rural School.*

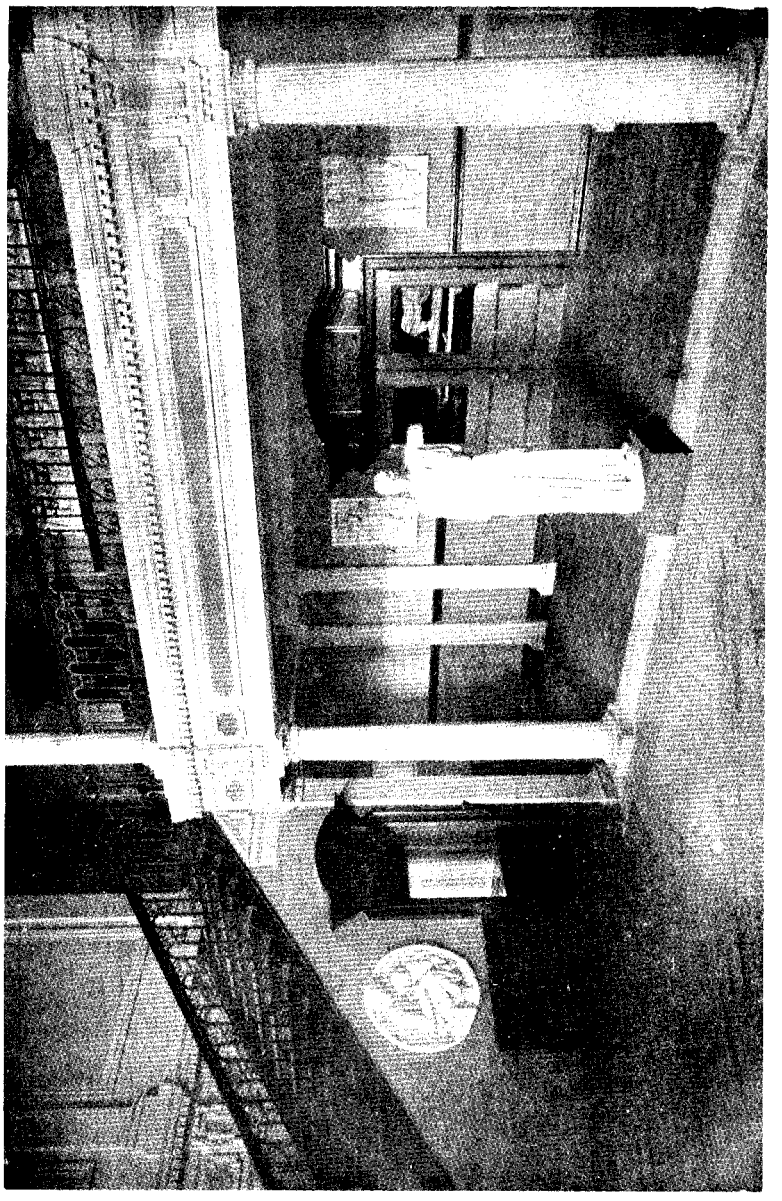
Valuable as are collections of pictures, school museums, and school libraries in town schools, they would be far more valuable in increasing the efficiency of the country schools. Teaching pupils how to read books for themselves, and how to draw conclusions from well-selected specimens and illustrations is valuable in any school; but in the small school a due proportion of study-periods spent by the older pupils in such work would not only benefit them by showing them how to work and think for themselves, but would lighten the task of the teacher in the difficult problem of properly distributing his efforts among the various classes with which he has to deal.

Money spent upon the encouragement of school libraries would, I consider, be well spent, and I think the country would be justified in giving pound for pound on any sums contributed for this purpose by local authorities or private individuals.

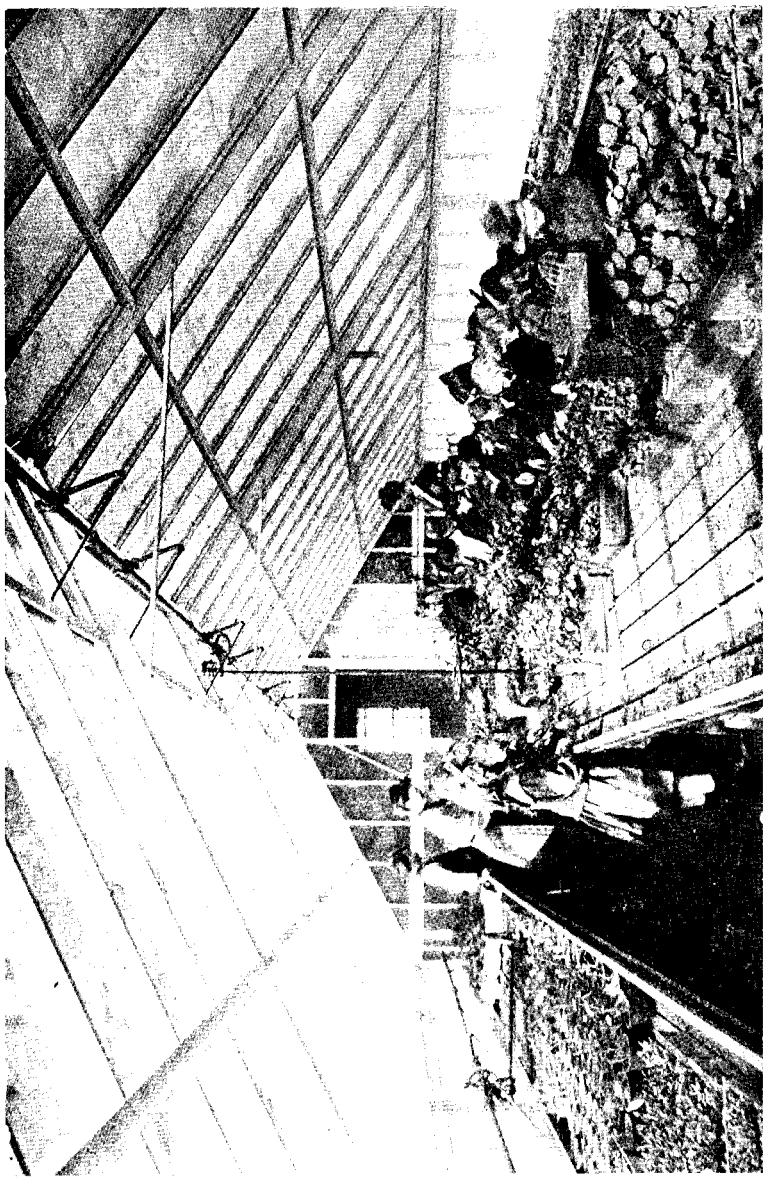
The programme of work might also be simplified by grouping the nature-study work with the language work, as in Switzerland,† thus linking closely together the child's observation and his power of self-expression in the mother-tongue. To a large extent this might be done in the case of geography, and of history and civics also. Care must be taken, of course, to see that

* Suggested by a pamphlet issued by the Agricultural Bureau, Washington.

† See the programme of work in the elementary schools of Geneva (Appendix).



Horace Mann Schools, New York.
Entrance Hall.



HORACE MANN ELEMENTARY SCHOOL, NEW YORK.
Nature-study.

HORACE MANN ELEMENTARY SCHOOL, NEW YORK.
First grade in Indian costume on Columbia Campus.

the observation is really trained; the concrete objects and the child's experiences furnish the material for the language-training.

There should be fewer classes in schools taught by one teacher—certainly not more than three or four at the outside. In a country school in Switzerland, with forty-five children, I saw this plan being carried out with great success. For a large part of the time there were only two classes; for the remainder of the time there were three: when this was the case, the older children were engaged principally in study-lessons or manual work. Even the arithmetic and the drawing seemed to have some relation to the nature-study for the day. I do not think that any of the older children suffered because of the small number of classes. Our regulations already allow of this grouping; I wish I could say it was universally adopted. School gardens could be made of benefit to children much younger than those in the two or three upper standards. (The same is true of domestic science, but its treatment would have to be made much simpler than at present; and I imagine that we shall have to wait for teachers specially trained for such work in our training colleges, before this subject can be successfully tackled in a practical manner in our rural schools.)

Instead of its being harder to manage a single-handed school when the teaching is more concrete than when it is bookish, the contrary is really true, for the children listen less to the teacher and do more themselves. This is the experience both of Switzerland and America. At the same time I consider that the reduction of the average number of children under one teacher from forty to thirty-five is an urgent necessity; I wish it could be reduced to thirty. Wherever it is possible the problem should be solved in a still better way—namely, by the consolidation of single-handed schools into schools with two or three teachers. If parents once realised the great gain in efficiency rendered possible thereby, all local prejudice would disappear in the interests of the children.

To sum up—for the improvement of our rural schools we need to have,—

(1.) Specially trained teachers;
(2.) Co-ordination of subjects;
(3.) Fewer classes;
(4.) School libraries and museums;
(5.) School gardens, or outdoor work for all pupils;
(6.) Consolidation of schools wherever possible.

The George Putnam School.—The Children's Day.

The George Putnam School, Roxbury, Boston, Massachusetts, is a school to which a great deal of interest is attached. Its headmaster is Mr. Henry L. Clapp, whose name is not unknown outside the States as a writer on educational subjects. Under his direction this elementary school was one of the first to establish school gardens. The whole course of nature-study in the school is well designed and well carried out. The chief topics are: In the winter, minerals and other objects capable of being brought under observation in that season; and in the spring, summer, and autumn, plants—their parts, their methods of growth, and their uses—together with insects and other animals associated with them as injurious or beneficial, or as dependent upon them; the weather, the soil, and other physical conditions are also observed. The lowest classes begin with the study of shells, flowers, and butterflies and moths. Plants and insects are reared on the school premises. The gardens are threefold:—

1. One part is for the cultivation and observation of wild flowers, weeds, and other wild plants, including ferns.

2. Another part is allotted to the work of individual children. The work of children in any class is also available for observation by children in other classes.

3. The remainder is devoted to class experiments on a larger scale. All parts of the garden show the thought of the teacher and earnest and careful effort on the part of the pupils.

Every observation of natural objects or phenomena has a corresponding note upon it in the pupil's note-book, not dictated by the teacher, but set down in a brief, businesslike, but natural way by the child himself, and illustrated by drawings with pencil and brush wherever necessary. By looking at the note-books of a child that had passed through the grades, one could obtain as intelligent a view of the programme of nature-study as by reading the headmaster's syllabus. Largely as a result of the work done in previous years by the co-operation of teachers and pupils, there is a splendid school museum, especially of minerals and of mounted and pressed plants. I was fortunate enough to visit the school when it was "the children's day" in several of the classes. That day comes once a fortnight, and then all the questioning is done by the pupils, and the

demonstration, on the blackboards and so forth, is done by them also, the teacher acting simply as chairman. The questioning and answering in arithmetic, and the criticism of the methods used by those children who demonstrated the work to the class, were very good, especially the criticism, in the 4th, 5th, and 8th classes. The method pursued was this: One child proposed a question to the class, and, if necessary, wrote it on the board; the class worked the question mentally while the questioner was thinking how he was going to demonstrate the method presently; then the latter picked out a boy or girl to give the answer. Those who got the same answer and those who got other answers were asked to stand in succession; the questioner demonstrated the working; others sometimes proposed better methods, and, being challenged, demonstrated them to the class, who expressed their opinion, perhaps, that this method was shorter, but hard to understand; that that method was better to teach to beginners; that this method was better for mental work, that for pencil-work, and so forth. All sums were worked mentally, but every pupil made brief notes, showing merely the question, the outline of the method, and the answer. The teacher sometimes criticized the form of the question as wanting in clearness, and it had to be re-stated; or the class objected to it because it was not practical, and the objection was upheld in one case, but disallowed in another; or both class and teacher objected to a question as merely repeating something done already, or as not leading to any point. The attention to order, and conformity to courtesy in debate was as strict as if the class had been working under parliamentary rules. The first question given in the 8th grade was: Find the simple interest on 336 dollars for 9 months 10 days at 6 per cent. per annum. (In America, in calculating interest, a month is counted as equal to 30 days.) This was done correctly by five-sixths of the class, methods were discussed, and, finally, notes of three ways of doing it appeared in the children's books. The result of a fifty-minute lesson in that class was as good a revision of work in direct percentages—dealing with population, weights and measures, as well as money—as one could wish to see in the course of a lesson. There was no priggishness or oversharpness; the slightest inclination thereto would be checked by the class or by the teacher. All pupils seemed fully employed throughout the lesson. I heard a pupils' lesson in history, which was half discussion, half mutual examination (two of the pupils had evidently, in preparation, made themselves masters of the state of England at the death of Edward VI). The teacher finally summed up the discussion, and the pupils were set to write a *précis* of the facts. A lesson in geography was not quite so successful, probably because one of the pupils, out of compliment to the visitor, began with a question on the industries of New Zealand, and, class and teacher soon getting adrift in their facts, the visitor was called upon to put the matter right. A lesson on the same lines in English in the 8th grade, however, formed a final good impression, as pupil after pupil, girls and boys, showed by question and answer a fine appreciation of the meaning and beauty of Bryant's "Forest Hymn." I should like to be able to say that most of our Standard VI classes, to which this corresponded, could do half as well in English. The questions were as good as the answers, and the notes made as good as either. The teachers do not do more than generally supervise the notes. In ten minutes I saw one lady correct the notes of the previous lesson in English for a class of thirty-five. It must be remembered that the pupils' notes are, in most schools, one of the chief factors determining promotion from class to class.

The school, like others in Boston, has recently given up the division into primary grades and grammar grades, nine in all, and has formed eight grades for the whole of the elementary work above the Kindergarten—that is, for children of the ages six to fourteen. Dull children will still take nine years, but children of average ability will pass through in the eight years allotted.

Single desks are used, but of a much larger size than the so-called American models that have been adopted, unfortunately, in some New Zealand schools. Indeed, nowhere in the United States did I see single desks so short as 22 in. in use in the Grade Classes; the usual length was nearer that which the Education Department has always recommended—28 in. or 30 in.

The class-rooms are roomy, the allowance per pupil being apparently about 15 square feet of floor-space, with good height—say, about 14 ft. As it was the first school I had visited in the United States, I was struck by the ample allowance of wall-board space for the use of pupils and teachers, by the electric lighting, and the telephones in every room for communication between the headmaster and his staff.

I came to the conclusion that the methods used in this school certainly encourage spontaneity, readiness, and originality, while there is no sacrifice of thoroughness. The instruction by the teacher is only a small part of the work; the children do most of it, while the teacher directs. The English-teaching was excellent nearly everywhere—marked by good appreciation of the books, by excellent reading, by clear and accurate oral expression of thought in answer to questions or in continuous speech, and by excellent enunciation and pronunciation throughout.

Special Schools.

Of late years much attention has been devoted to the education of abnormal children—blind, deaf, crippled, and feeble-minded—in Great Britain, Germany, Switzerland, the United States, and elsewhere. The scientific instruction of the blind and deaf is, of course, no new thing; but in these branches of special work more good is possible than formerly. The long-continued observation of skilled teachers and of medical and psychological experts has rendered it possible to secure better classification, and has practically settled many questions of method that were formerly considered matters of individual opinion: *e.g.*, although a few of the old teachers still cling to the old "manual" method or to the "mixed" method in the teaching of the deaf, nearly everywhere all the best teachers have adopted the pure "oral" method—at all events, for deaf children of normal intelligence.

Fortunately, the need of establishing special schools for crippled children is with us unknown, otherwise it would be interesting to note the thoughtful and kindly treatment they receive in the Tavistock Place Invalid School, and in similar schools in London and other large cities of the United Kingdom. The problem to be solved in regard to all these classes of children is twofold—to develop as far as possible their physical, mental, and moral powers, so that they may, in their own limited way, at least, find some joy in a reasonable existence; and, secondly, to teach them some occupation that will enable them, in whole or in part, to maintain themselves—this will have the effect not only of lightening the burden on the community, but also of giving the individuals greater moral dignity, and so of preventing them from sinking still lower in the scale of life. There is a general agreement among specialists who work for the education of the mentally defective that the test we propose to use in New Zealand for the classification of such cases is the best that can be applied in practice—namely, that the *feeble-minded* children, as distinct from *idiots*, are those who can keep themselves clean and out of personal danger, and, further, as distinguished from *imbeciles* (who can also satisfy this test) are those who can be trained to earn their own living, wholly or partly, in subordinate positions.

Schools for the Feeble-minded.

The methods used for the mental training of these children vary considerably; the teachers themselves admit that they are experimenting—feeling after the best methods. A large school has lately been built for defectives on the outskirts of Frankfurt. There is a site of 5 acres, but the playground is almost as bare as a drill parade-ground. When I asked the teacher why they did not have gardens in which they could teach the pupils the simple operations of gardening and agriculture, he said he thought it was an excellent idea, but it had never been thought of for these children. In this school the method adopted in intellectual instruction seemed to be to go nearly on the same lines as with normal children two or three years younger—as if we were to make Standard III their aim, the end of their elementary education, instead of Standard VI, as in the case of ordinary children. That mistake has not generally been made in London, or Glasgow, or Bristol, or New York, where special concrete methods of instruction are employed, but not always quite successfully. In one school in London I saw a class being taught elementary notions of domestic life, with the aid of a doll tea-service; each thing was taken up, its use was asked and explained, and it was put in its proper place on the miniature tea-table. So far, so good; but the weak point was that many of the children had never seen the real things the toys were meant to represent, and the latter were so small that many of the children did not recognise the toy milk-jug or the toy sugar-basin—the whole business was, to some of them at all events, a confusing abstraction. In a similar class of a New York public elementary school I saw some children given apples and knives (somewhat blunt). They were in a junior cookery room with small gas-rings on the benches in front of them. They talked about the apples, cut them in two to see what was inside, cut them again (into quarters), ate one quarter, and related their experiences (the apples were

sour). Then they peeled the remainder, cut it up into slices, lit the stoves (after a talk about matches), cooked the apples, and talked about them while they were stewing. They then laid the tables with neat white cloths, plates and saucers, spoons and forks, cups, milk-jugs, and sugar-basins. When the "apple-sauce" was ready, they sang a grace, sat down, and enjoyed a light but wholesome lunch of bread and butter, milk and sugar, and apple-sauce. They washed up everything, including the pannikins in which they had stewed the apples, and put the things away. Then they were told the room was wanted for another class; so they went off to their ordinary class-room, where, after performing a few rhythmic exercises, and singing a song, they proceeded to tell the teacher all that they had done with the apples, "in order that they might be able to tell their mothers when they got home." It was the real thing—not make-believe—and hence its virtue; there was little or no fear that the children would acquire confused ideas about what they had done. On the other hand, in the English and German schools there was greater attention paid to the teaching of a trade—but partly because these schools are in or near large cities. The value of gardening as a suitable occupation seemed often to be overlooked. In Frankfurt the chief occupations seemed to be the making of card and wooden boxes (intended for packing jewellery and other small manufactured goods), knitting, caning chairs, and bookbinding. In England basketmaking and wirework were generally added, but bookbinding I saw only in one school. In the Red Cross Street School, Bristol, the boys are taught to sew on buttons and to mend their own clothes. Boys and girls make ornamental basketwork, table-mats, clothes-baskets, &c., to order; the boys also mend cane chairs: all these things lead up to remunerative employment. In a London technical school I found a class of weak-minded boys, older than those just referred to, making simple articles of tin ware which had a selling value, and so helped to provide the boys with a means of livelihood.

The importance of co-operation between the teacher skilled in the treatment of the mentally defective and the medical specialist is recognised everywhere—in the first instance, for the proper classification of the child, and afterwards for the adjustment of physical and mental work to secure the best development. The influence of the medical specialist is evident in the importance attached to regular exercises in rhythmic motions intended to secure the better co-ordination of motor-muscles and nerve-centres. In one school —otherwise good—I found that owing to want of funds they had classes of twenty, but this number is much too large for effective work.

General Conclusions.—Expert teacher and medical specialist must co-operate throughout; classes must be small; instruction should be very real and concrete throughout, beginning with familiar domestic subjects, the breakfast-table, furniture, clothes, gardening, cooking, &c., and leading up to technical, work likely to provide a means of livelihood, for at the best, the work of defectives must be largely imitative; there should be a great deal of drill in co-ordinated physical exercises. Preference should be given to outdoor occupations, not only as more healthy in themselves, but as better for the moral upraising of the pupils; it is infinitely better for one of these unfortunates to become the humblest kind of farm labourer than a hanger-on in a town slum.

Schools for the Deaf.

The Deaf-mute Institution at Kingsdown, Bristol, is a good example of a small but successful institution. Its Principal is Mr. O. H. Illingworth; the number of pupils is eighty, about the same as at the Sumner School for the Deaf. The chief features are that the size of classes is limited to eight pupils; all the teaching is oral; the comprehension of spoken language is far in advance of the power of speech, many orders being given and obeyed at once, though the pupils cannot repeat what was said. This is regarded as an advantage, inasmuch as comprehension should precede expression, and it acts as a stimulus to the pupils to acquire the power to express themselves so as to be understood. Systematic instruction in handwork is given throughout the school. The age of leaving—sixteen—is, in the Principal's opinion, too early. Female teachers are found to be most successful, especially with young children. Mr. Illingworth strongly advises the admission of pupils at five years of age, as the necessary preliminary training is rarely given at home. These younger children should be separated from the rest in classes, in the playground, and in the bedrooms. He also advises that teachers should be with the children all the time; considers that partially-hearing children would then get as much benefit as if they were placed in separate homes with untrained people, but he admits that separate cottages under the charge of teachers would be best of all. The handwork should lead up to technical work that fits the pupil for his or her future trade. The

pupils at this school have done very good repoussé work; but it is found that, owing to the great development of mechanical processes, this work will not pay unless it is done in silver.

In Ontario, Canada, through the sympathetic co-operation of the Postmaster-General, a new sphere of employment has been found for the deaf. A certain number of deaf persons, trained in oral speech, have been during the last two or three years engaged as sorters or otherwise in the General Post Office, and they have given such satisfaction to the authorities, that the latter have asked for more persons so trained. Perhaps something might be done in this way in New Zealand, especially for deaf persons not suited for farm life.

GENERAL CONCLUSIONS.

I. In most foreign countries the mother-tongue receives much more attention, and is more thoroughly taught, than in our schools, special effort being directed, with considerable success, to training the power of self-expression through oral speech on all subjects, beginning with those which have formed the matter of observation by the pupils; this leads also to clearness of thought. It is emphasized alike in primary and secondary schools; it develops literary taste as well as thoroughness and logical method.

II. In European countries and in America examinations form a comparatively insignificant feature in the education system; they are conducted in nearly all cases by the teachers themselves, and, in particular, do not, as in New Zealand, dominate the secondary schools and universities to the serious detriment of true education.

III. The programmes of work and the methods of teaching are often much more natural and real, more closely related to the life and surroundings and future vocations of the pupils, than with us; school life becomes more interesting to the pupil, thoroughness and culture are not sacrificed, and "social efficiency" is secured much more certainly for most pupils than by time-honoured subjects and methods that have no practical outlook upon life. Our secondary schools are the greatest sinners in this respect, except, perhaps, the University.

IV. The standard of work in our secondary schools, technical schools, and University Colleges is not so high as it should be, and very little improvement can be expected until the length of the average pupil's stay at a secondary school is substantially increased. The requirements for entrance into the University are too low; until they are raised, the University Colleges cannot become—what they are elsewhere, at least in Europe and largely in America—the homes of specialisation and research. Our colleges are at present doing for most of their students merely work that is done by the best secondary schools in Germany, Switzerland, America, or Great Britain.

V. The most advanced countries have already provided for, or are rapidly taking steps to provide for, the continuation of the definite education of boys and girls, especially of apprentices, up to the age of eighteen; in most European countries there is compulsory attendance either by a general law, as in Wuerttemberg and some other parts of Germany, or by local option. There is a tendency in America, and even in Great Britain, to follow in the same direction.

VI. The proportion of the population receiving instruction higher than that of the primary schools is very much greater in Switzerland, Germany, Denmark, &c., than with us. It is true that in New Zealand the proportion has increased more than threefold in the last ten years, and stands high for a young country; but we shall have to make rapid progress in what we do for all forms of higher education, and to spend more money on buildings and maintenance, if we are to keep in line with the leading nations of the world.

VII. Regarded merely as machinery, our system of agricultural education needs very little to make it complete; but, unless it is put into operation, and used by those for whose benefit it is intended, it might as well not exist. Elsewhere the same complaint is heard that farmers are slow to realise that scientific farming has come to stay. Although great natural advantages may obscure the fact for a few years, nevertheless it is always true that unscientific agriculture is wasteful and foolish, and—as our competitors are training their young farmers to be real experts—must in the end bring its own retribution in the loss of markets. It is gratifying to see the increased amount of attention that is being given to nature-study,

school gardens, and elementary agriculture in our primary schools; but this is only the first step on the ladder, and, unless farmers can induce their sons and daughters who have left the primary schools to submit to technical training, very little will have been accomplished. This technical training will not, it is true, abolish the necessity for hard toil; but it will raise what is often merely a life of drudgery to the dignity of a profession. The scheme given above will indicate what further organization is required to make the ladder of agricultural education complete.

VIII. In all countries that have the best-developed systems of education, the control is largely local, the educational authorities are either part of, or closely linked with, the municipalities or other local governing bodies, and a substantial portion of the cost is met out of local taxation. All local forms of education—primary, secondary, technical—are thus co-ordinated, being often under the same administrative body. The schools form an organic part of the life of the community.

NOTE.

Besides the various programmes of work and other matters already referred to in this report, the Appendix will contain further notes on the following subjects:—

Medical Inspection of Schools;
Agricultural Education;
Secondary Education in Great Britain;
Continuation and Technical Schools and Colleges;
University Education;
Domestic Instruction;
Training of Teachers;
Etc., etc.

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