

globes, 875 sets of apparatus, 24,232 pieces of apparatus and 273,510 historical, natural history, and other object lessons; value about \$500,000.

In addition to books, maps and charts nearly 1000 separate articles illustrative of the various branches of science were kept for sale at the Educational Depository including, arithmetic, drawing materials and models, music, chemistry, geography, mineralogy, crystallography, zoology, physiology, ethnology, mechanics, hydrostatics, hydraulics, pneumatics, electricity, magnetism, steam, light, heat, acoustics, etc.

It will be seen that provision was made for the teaching of elementary science in all our schools. This is actually necessary, as scientific knowledge is now required quite as much as practical skill in the manufactures. The prospects of a country depend upon its industrial interests, brute force has been superseded by skilled labor, and a country advances in proportion to the education received by its workmen. The Map and Apparatus Depository was discontinued at the same time as the Library Depository.

THE EDUCATIONAL MUSEUM.

In 1850 the Legislature voted an annual grant of £200, to be expended in plans and publications for the improvement of school architecture and practical science in connection with common schools. An Act was subsequently passed authorizing the expenditure of a sum not exceeding £500 per annum in the purchase of objects suitable for a Canadian Library and Museum to be kept at the Normal School buildings.

An additional sum of £500 was granted for the establishment and support of a school of Art and Design. With this small amount our museum was commenced and from its inception to the present time it has gradually progressed so that it now ranks in regard to utility with similar museums in any part of the world.

The museum was opened in 1856 and the Chief Superintendent says in a special report: "I have been anxiously desirous of preparing the way for and so far as possible, of giving effect to what was contemplated in connection with the School of Art and Design. The copies of paintings which I have procured, present specimens of the works of the most celebrated masters of the various Italian Schools, as also of the Flemish, Dutch and German. The collection of engravings is much more extensive, but they are not yet framed for exhibition. The collection of sculpture includes casts of some of the most celebrated statues, ancient and modern; and busts of the most illustrious of the ancient Greeks and Romans, also of sovereigns, statesmen, philosophers, scholars, philanthropists and heroes of Great Britain and France, likewise a collection of Architecture and some of the characteristic ornaments of ancient Gothic and Modern architecture." In addition plans and publications were procured for the improvement of school architecture, also a collection of specimens including the birds and the mammals and the geology and mineralogy of the different provinces of British North America, and a collection of models of agricultural implements.

THE MODEL GRAMMAR SCHOOL.

A large building was erected in the rear of the Model Schools in 1858, sufficiently large to accommodate the pupils of the Model Grammar School and the Normal School Students.

The Normal School was then removed to the rear building and the lecture rooms in the front building were fitted up for the educational museum.

The Model Grammar School was closed in 1863, since that time all the rear building

has been used for Normal and Model school purposes.

In 1870, a change took place in the executive administration of the education department. An Act received the royal assent on 10th January, 1870, by which all the functions of the Chief Superintendent of Education were vested in a minister of the Executive Council to be nominated by the Lieutenant-Governor, and to be designated "Minister of Education."

The Government acted most generously by allowing Dr. Ryerson a retiring allowance of \$4,000 per annum, a sum equal to his full salary.

As will be seen from the following extracts from Dr. Ryerson's parting circulars, he was greatly in favor of the administration of the education department being vested in a representative of the Government as Minister of Education instead of a Chief Superintendent of Education, as heretofore.

Extracts from circular to municipal councils: "Feeling that the time had arrived for me to resign the administration of the education department to younger and abler hands, I submitted the best provision I could conceive for the future management of the department, and perpetuation and further development of the school system. I am happy to say that the Government and Legislature have given effect to the plan recommended; and that an honorable gentleman, whom in consideration of his principles, character, ability and attainments, I had for two years pressed to assume my work, has at length been appointed Minister of Education. In his hands I am sure you will find no change in the administration of the department and the school system, except for the better."

Extract from circular to public and high school boards:

"In my successor, the honorable Minister of Education, I am sure you will find higher qualifications and greater energies than I could ever pretend to, and a corresponding zeal and patriotism in advancing and extending the work which our joint labors have prepared."

The Hon Adam Crooks was appointed Minister of Education on 10th of February, 1870.

During this year the department made an exhibit of school appliances from its Museum and Depository at the Centennial Exhibition in Philadelphia. As the principal portion of the exhibit is still on view in the Educational Museum, and was awarded the gold medal by the English judges for the Canadian department, an international medal and diploma by the Centennial commissioners, also, a complimentary award by special judges for the completeness of our display as a collective Government exhibit, I will briefly enumerate the articles exhibited:—

CLASS I.

Reports of Universities and other Educational Institutions, Calendars, Examination papers, etc.

CLASS II.

Large Photographs of Educational Institutions and other Public Buildings in Ontario.

CLASS III.

Large Photographs of some of the principal Public and High Schools in Ontario; models of School Houses, etc.

CLASS IV.

School fittings and furniture, including desks and seats, calisthenic apparatus, gymnasium, etc.

CLASS V.

Pupils' School work:—Specimens of Drawing and Penmanship from the public and Model Schools of Ontario by pupils from ten to fourteen years of age.

CLASS VI.

School method and organization, including Examination papers for Model Schools, High Schools and Collegiate Institutes, School Registers, Time Table, Merit Cards, etc.

CLASS VII.

Specimens of Text Books authorized for use in the Public Schools, High Schools and Collegiate Institutes.

CLASS VIII.

Teachers' professional library books, embracing over 350 volumes on Practical Education, Kindergarten, School House Architecture, English Language and Philosophy, Elocution, etc.

CLASS IX.

Specimens of Library and Prize Books.

CLASS X.

Reading Lessons, Mottoes for hanging on school walls, Writing, Spelling, etc.

CLASS XI.

Numerical frames, Geometrical forms, etc., illustrating the teaching of Geometry and Arithmetic.

CLASS XII.

Drawing books, Models, Mathematical instruments, etc., including the equipments for teaching the various branches of Art Education.

CLASS XIII.

Music Charts for teaching singing in Schools.

CLASS XIV.

Chronological and Historical Charts, Historical Photographs, etc.

CLASS XV.

Topographical and Astronomical Illustrations, including Charts, Globes, Orreries, Tellurians, Dissected Maps, Cubes, Atlases, etc.

CLASS XVI.

Charts, specimens and models, illustrating Geology, Mineralogy, Crystallography, Botany, Zoology, Ethnography, Anatomy, and Physiology.

CLASS XVII.

Chemical Laboratories and Apparatus, Chemical Diagrams, etc.

CLASS XVIII.

Pneumatic Apparatus of various kinds, Meteorological Instruments, Charts, Diagrams, etc.

CLASS XIX.

Apparatus for illustrating the science of Acoustics.

CLASS XX.

Microscopes, Magic Lanterns and other apparatus of illustration of Light—Optics.

CLASS XXI.

Models of Steam Engines and other apparatus illustrating Heat and Steam.

CLASS XXII.

Electrical machines, Electroscopes, Electric and Voltaic Batteries, etc.

CLASS XXIII.

Models, Charts, etc., illustrations for teaching Mechanics and Mechanism.

CLASS XXIV.

Apparatus for Hydrostatics and Hydraulics.

CLASS XXV.

Kindergarten Illustrations. This exhibition received highly commendatory notices from the Press. I will give you a few extracts.

Mr. Buisson, chairman of the Committee of Education from France, says: "Of all foreign countries that attract attention because of the exhibit of new material, Canada is at the head. Besides, Canada occupies in the Educational Department of the Exhibition a place too important not to be studied by itself. To make a brilliant educational exhibition by the side of that of the United States was not an easy thing to do, and for Canada to have succeeded in doing it goes to prove that her schools are in a very prosperous condition." Mr. Buis

son was so impressed with the value of the exhibit that he made a special visit from Philadelphia to Toronto to inspect the Educational Museum. In his report under the head of "Canadian Exhibition," he says:— "There exists at Toronto, the capital of Upper Canada, an establishment, the like of which we would be glad to see at Paris, it is a pedagogical museum, embracing school furniture and apparatus, maps, charts, books, and documents relating to teaching and schools, objects of art and industry, in short all that can serve the practical purposes of education. Adjoining the same building is the Normal school with its several connected departments of Model schools which are themselves beautiful schools. The main building contains an educational storehouse and depository like those of the city of Paris, and bureaus for the administration of the affairs and laws of education. The building possesses a fine theatre, vestibule and halls in which are placed the busts of the great men of all nations."

The Hon. Mr. Aggan, State Superintendent of New Jersey, says:—"Ontario presented the finest collection of expensive school and college apparatus exhibited. Without enumerating the articles, which would be tedious, I may simply state that it is doubtful if we could find anywhere in sale a piece of school apparatus for any grade of school from the Kindergarten to the college that was not in the Ontario exhibit."

Toronto Globe says:—"The exhibition of apparatus of every kind from Ontario is far ahead of any exhibit from any other country."

Toronto Mail:—"Pennsylvania takes great pride in its schools and the exhibition of models, maps, &c., is most creditable, as are those from the other states. I am happy to say that the Canadian exhibit in the educational way takes the shine out of them all."

Mr. Whiting, an English correspondent, referring to the Canadian exhibit, says:—"Her school exhibit is not only better than that from any State of this country, but it is the only thing which redeems the British school exhibit."

(TO BE CONTINUED)

HIGHER EDUCATION OF WOMEN.

BY WILLIAM HUNTON, M. A., SENATOR OF TORONTO UNIVERSITY.

I.

The part played by young women in the recent commencement proceedings of the University of Toronto affords a good opportunity for calling public attention to what has been done in the way of providing higher education for women, and to what still remains to be accomplished. I do not propose in this paper to do much more than describe briefly the part referred to, reserving for future articles an account of the more general aspects of one of the greatest social movements of the day.

It is necessary at the outset to explain that the University of Toronto is a corporation which examines candidates for academic standing and grants to those who pass its examinations degrees in arts, law, medicine, and civil engineering. It is prohibited by law from engaging in the work of teaching, and it is bound by law to examine all candidates who offer themselves, whether they come from teaching institutions or not. University College, on the other hand, is simply a teaching institution in arts, having no right to grant degrees to its students, who usually obtain them from the University of Toronto. These two corporations belong to the Province of Ontario, and subsist on the same endowment—a foundation which is purely a public one, and