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ANNUAL REPORT
OF
McGILL UNIVERSITY
1885.

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PRES. BY *Dr J H Clarke*

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ANNUAL REPORT
OF THE
GOVERNORS, PRINCIPAL AND FELLOWS
OF
MCGILL UNIVERSITY, MONTREAL,
FOR THE YEAR 1885.

*(Published by permission of His Excellency the Governor-General, Visitor of
the University.)*

*To His Excellency the Right Honourable and Most Noble the
Marquis of Lansdowne, Governor-General of Canada.*

MAY IT PLEASE YOUR EXCELLENCY :—

At the commencement of the present session grave apprehensions were entertained that the prevalent epidemic of smallpox might seriously interfere with our educational work, and special precautions were taken by the Principal and Faculties to ensure the vaccination of all students and to inquire as to the sanitary condition of lodging-houses. We are thankful to be able to state that the health of the students has been in every respect as good as usual, and that though several intending students were diverted from our class-rooms by the apprehensions which had been excited, and the junior classes in some of the Faculties have thus been diminished, few of the senior students were deterred from returning. The total number in attendance has been slightly in excess of that of previous sessions.

The University has to lament the death, since the last Annual Report, of one of its Governors, the Hon. Sir Francis Hincks, K.C.M.G., C.B. Of the public services and high reputation of Sir Francis it is not for us to speak, but with reference to the University we have lost by his decease a warm and active friend, a regular attendant of the meetings of the Board and a

wise counsellor in all matters of doubt and difficulty. Sir Francis was also an earnest student of Canadian history, and by the publication of his work, "Reminiscences of His Public Life," and of papers on subjects connected with public affairs, has materially contributed to our knowledge, more especially of the events in which he himself bore a part.

In the past session, a committee of the Corporation was appointed to confer with a sub-committee of the Protestant Committee of the Council of Public Instruction on the subject of securing recognition of University degrees in Arts as a preparation for professional study. The law of this Province seems to stand alone in refusing such recognition, and it is to be hoped that this disability will be removed. Attention was also given to the diverse examinations for entrance prescribed by the several professional Boards in the case of students entering on the study of professions without degrees. We trust that uniformity may be introduced into these examinations, so as to remove the present confusion in the work of pupils of the high schools and academies, which, while injurious to general education, tends to prevent these important schools from training their pupils to enter college with advantage.

By request of the Government, the University has prepared photographs of its buildings and copies of its publications for the Colonial Exhibition to be held this year in London.

The Medical Faculty has been for some time in need of additional and larger class-rooms and laboratories, and in the past session the Board of Governors were enabled to make arrangements by which such buildings could be erected. They include two large and commodious class-rooms, well lighted and ventilated, and each capable of seating 275 to 300 students; as well as laboratories for Chemistry, Physiology and Histology, which are arranged and fitted up in the most modern manner. The Chemical Laboratory will accommodate 75 students, and is already fully occupied. Advantage has also been taken of the additions made to the building to enlarge and improve the Dissecting-room, the Library and the Museum. The accommodation enjoyed by this Faculty and its students is now believed to be equal to that of any medical school on this continent.

The building was opened with appropriate formalities in October last, on which occasion we had the pleasure of welcoming Provost Pepper and Dr. Osler of Philadelphia and other influential visitors, who bore willing testimony to the high standing of our Medical Faculty and the excellence of the appliances and means now at its disposal.

Additions were also made in the past summer to the buildings occupied by the Faculties of Arts and Applied Science. These include new Chemical Laboratories, in which the special practical work in Chemistry of the Faculties of Arts and Applied Science will be carried on, along with the assaying and mineralogy connected with the Mining School. These laboratories will, when completed, be capable of accommodating 48 students. The number at present working in them is 34. One of them is being fitted up with the most approved appliances by the generous liberality of W. C. McDonald, Esq., a member of the Board of Governors.

The University thus possesses in the Chemical Laboratory of the Medical Faculty, and that of the Faculties of Arts and Applied Science, working-room for 120 students, the whole of which is now, or very shortly will be, required.

Three commodious class-rooms and a waiting-room have also been provided for the classes of the Special Course for Women, and three new class-rooms to accommodate the increasing classes in Arts and Applied Science.

We are desirous of directing the attention of the friends of the University to another requirement in the direction of building, viz., the provision of suitable rooms for the Faculty last named—that of Applied Science. This has hitherto been accommodated in the building of the Faculty of Arts, but not in a manner at all proportionate to its requirements and to its importance as the oldest and most extensive school of Applied Science in Canada. The building required should include not only class-rooms, but commodious and well lighted drawing-rooms, a model-room and economic museum, and laboratories for exact measurements, testing, electrical work, botanical work, assaying, metallurgy, etc., as well as a workshop with appliances for constructing models, for repairs, etc. The University has the site reserved for such a building, but has not at present means for its erection.

With reference to these requirements, it is to be observed that the University proposes, as heretofore, in accordance with the practice of the best schools abroad, to give a complete scientific and theoretical course in Civil and Mechanical Engineering, Mining and Assaying, and Practical Chemistry. It expects students to engage in practical work in the summer vacations and to make reports on this; and it also provides, as far as possible, for practice in its own laboratories and class-rooms in Chemistry, Assaying, Drawing and Designing. It is now desirous to develop its means of training in the art of measurement, and in physical and electrical manipulation, and other practical matters which may be profitably taken up in connection with the College courses. With a suitable building and one additional chair, it might fairly challenge comparison with any of the schools of Applied Science in America.

The classes for Women under the munificent endowment of the Honorable D. A. Smith are now in full and satisfactory operation so far as the junior years are concerned. In the present session the total number of students is fifty-one. Of these, twelve are Undergraduates, and nine are Partials taking three or more courses of lectures. The remainder are Occasionals, taking one or two courses of lectures. It would thus appear that so far the number is not quite as great as in some of the larger classes formerly kept up by the Ladies' Association. On the other hand, the number of lectures attended by each student is much greater, and it is to be anticipated that in future sessions, as the number of years in the Undergraduate Course and the number of lectures open to Occasionals increase, the attendance will increase in proportion. It is also to be considered that at the opening of this session the dread of the epidemic then prevalent must have diminished, in this as in other departments, the class in the junior year. In the present session there are regular students in two years only, and the classes open to women are those in Latin, Greek, English, French, German, Logic, Mathematics, Chemistry and Botany. Next session there will be regular students in three years, and separate classes for women will be open in Experimental Physics, Zoology, Advanced Logic and Rhetoric. In the session after next there will be students in all of the four years, and separate classes in Mental and Moral Philosophy,

Geology and History, in addition to the foregoing. It will be reasonable to expect that when the classes in the whole course are thus in operation, and so great variety offered to occasional students, the number in attendance will be nearly doubled. We are prepared to find that for some years the number of partial and occasional students will be large, in comparison with that of undergraduates. It is to be hoped, however, that as the advantages of the regular course become better known, and facilities for preparation are afforded in the schools, the number of undergraduates will increase. To this end, the University has endeavoured to invite the attention of parents, not only in Montreal, but elsewhere in Canada, to the importance of cultivating a taste for the higher education, and of sending young women to those schools which provide an adequate preparatory training.

In the arrangements for the Third and Fourth Years it will be provided that there shall be separate classes for women in all the ordinary subjects up to the standard for the degree, giving them all the options enjoyed by male students. In each subject the lectures to men and women will be delivered by the same professor or lecturer, and the examinations will be identical. The degrees to be given have not yet been formally decided by the Corporation, but it may be considered as settled that they will be the same for women as for men.

The most important pecuniary benefaction received by the University during the past year is that for the establishment of these classes, which the Hon. Mr. Smith has augmented by the further gift of \$70,000, making \$120,000 in all, so as to provide means for establishing separate classes for women in all the four years of the Course in Arts.

In connection with this endowment, the Governors have been able to secure the services of Mr. Paul T. Lafleur, B.A., a gold medallist of this University, as Assistant to the Professors of Logic and English, with the title of Lecturer,—and they also propose to engage a Laboratory Assistant in Chemistry.

The Local Committee of the British Association for the Montreal meeting has presented to the University the sum of \$1,500 to form a fund, the interest of which is to be employed in the purchase of philosophical apparatus.

We are indebted to Your Excellency for the continued gift of Gold and Silver Medals for competition in the University and in the Normal School.

Dr. R. J. Wicksteed, of Ottawa, has also continued his gift of a Gold, Silver, and Bronze Medal for Physical Culture, the competition for which is open to students in all the faculties.

When the Chair of Hebrew in the Faculty of Arts became vacant by the decease of the late Rev. Dr. De Sola, the Governors were enabled to secure the services of Rev. Prof. Cousirat, B A., an able Hebrew and Chaldee scholar, and one of the company of revisers of the Old Testament in France, as Lecturer in Hebrew and Oriental Languages, with the same small stipend given to his predecessor. An appeal was, however, made to the friends of the University for an adequate endowment for the chair. We regret that hitherto this appeal has been without result, and it is thought proper to quote here a portion of the statement made in 1882:—

“On the reorganization of the University under its new charter in 1852, one of the chairs established by the Board of Governors was that of Hebrew, for which the services of the late Rev. Dr. de Sola, a man of eminent and established reputation in the subject, were secured.

“There can be no question that, even in the depressed condition of the financial affairs of the University at that time, this was a wise resolution. The claims of the Hebrew and other Semitic languages as means of education were then beginning to be very generally recognized, and have been more and more acknowledged in all the more important universities. Further, it was desirable that the University, being without any Divinity Chair of its own, should do what it could to advance the interests of theological students, and thereby to prepare the way for the affiliation of Theological Colleges,—since that time happily realized with great benefit both to the colleges and to the University.

“The classes in Hebrew, at first very small, have steadily increased, until in the present session fifty-two students have entered on the study of this subject, which is allowed to take a place in the regular course of the University as an alternative with one of the modern languages.

“ In these circumstances, and since the subject is closely connected with the functions of the Theological Colleges, and it is important to them that Hebrew should be taught by an eminent professor in the University, the Governors desire to appeal more especially to the friends of these colleges for aid in this matter. If an annual sum of \$2,600 could be secured, it would relieve the general funds of the University, place the Chair in a safe position, and ensure its permanent occupation by a professor satisfactory to the University and to all the affiliated colleges ; and it is believed that no greater service could be rendered to the cause of theological education, and of higher education in general, than by thus endowing the Hebrew Chair. Even a smaller sum than that above mentioned would be acceptable, since it might enable the present arrangements to be extended and improved until more ample endowment can be obtained.”

In the early part of the year, the attention of the Governors was called to the importance of providing a suitable dining-hall for students. A site was selected on the College grounds, and a plan and estimate were procured for the building. It was, at that time, found to be impossible to proceed with the work, as there were not sufficient means at the disposal of the Board applicable to this purpose, and it was at the time unable to obtain special contributions. The matter is, however, only in abeyance for the present, and it is hoped may be taken up under more favourable circumstances : but it should be understood that in the present financial position of the University this object can be adequately provided for only by the aid of a special gift, or of a benefaction which may relieve the general funds in some other direction.

The Principal has directed the attention of the Board of Governors to the fact that in the ordinary course of nature it cannot be expected that he shall be able for many years longer to discharge the duties of an office demanding continuous care and watchfulness and much actual labour, and that in the event of his removal or retirement the Board might have some difficulty in providing a salary for his successor. This difficulty has heretofore been avoided by the fact that the Principal has held a chair covering the whole range of the Natural Sciences, until relieved by the recent appointment of professors of

Mineralogy and Botany. He has also been able in some degree to sustain the dignity of the office by means derived from other sources than the revenues of the University. His successor should be placed in a position to devote himself largely to the general interests of the University and to the public duties and responsibilities devolving on the occupant of this important position. His teaching duties should be limited, and, if possible, should be partly in the direction of general lectures accessible to different classes of students. To secure these ends, there should be an adequate endowment for the office.

This matter was taken up by the Graduates' Society in 1880, and a subscription was opened for an endowment of the Principalship. At that time, however, the pressure of other urgent wants of the University was so severely felt by its friends, that little progress could be made. The effort might perhaps now be renewed, and, if successful, would afford immediate aid to the general funds of the University, and would relieve the Governors of a grave difficulty in the future.

In connection with the requirements above referred to, it is to be observed that these and other improvements which it may be very desirable to introduce cannot be provided by the general funds of the University, and that there is no prospect of increased Provincial aid. It should also be stated, that in its estimates for the coming year, the Board of Governors will find it necessary to practise strict economy even as to ordinary expenditure, since several special subscriptions to the fund contributed by the citizens in 1881-82, will expire in the present year. The University is popularly believed to be a wealthy and well-endowed institution; but while it has endeavoured at all times to avoid indebtedness, and has had occasion to claim for the citizens of Montreal the credit of an exceptional degree of liberality in contributing to the support of the higher education, its endowments are still small relatively to the magnitude of the work for which it has to provide, and its field of usefulness might be greatly widened were larger means at its disposal. It is also to be observed that its influence is not merely local, and that it has an important bearing on the whole educational system of the country. It has, therefore, claims not merely on Montreal, but upon the country at large, which

are by no means adequately met by the very moderate grant which it receives from the Superior Education Fund of the Province of Quebec. With reference to this, it should be considered that its grounds, buildings, museum, library and apparatus have been given to it by citizens of Montreal, and that its revenues, which are of the annual value of \$45,000, are mainly from the same source, while the annual aid received from the legislature does not exceed 10 per cent. of that sum. It is also to be observed, that of the students deriving benefit from the University, four-fifths are from other places than Montreal, and that the benefits of the education conferred are felt not only within the Province of Quebec but throughout the Dominion, while many incidental advantages are derived by this Province from the existence of the University. Nevertheless, were the University placed in a financial position enabling it to be entirely self-supporting, it would gladly dispense with any legislative aid in favour of the extension and improvement of the preparatory schools.

The importance of these schools cannot be overrated, and could means be found to raise them to such a condition that their course of study would cover thoroughly the work of the present First Year in Arts, so as to enable the standard of the Matriculation examination to be raised, the resources of the University would be economized and its higher work improved, and at the same time the number of students taking a course in Arts would be greatly increased. It may seem contradictory, yet it is well known as a matter of fact, that a low condition of preparatory schools tends to send young men into professions with a mere preliminary cram for passing an entrance examination, while better schools would induce them rather to take the time necessary to lay the foundation of a thorough college course.

It has been thought desirable in the present Report to present a more full statement than usual of the condition and work of the several Faculties and affiliated colleges and schools, and to add a general summary of statistics. In stating the number of Professors and Lecturers, only those actually engaged in the work of instruction will be included; and in like manner, the number of students stated refers to those actually in attend-

ance on classes ; and students of one Faculty taking classes in another are reckoned only in that to which they properly belong.

THE FACULTY OF LAW.

Seven Professors and one Lecturer represent the subjects of Roman Law, International Law, Law of Real Estate, Criminal and Constitutional Law, Legal History, Civil Procedure, and Notarial Deeds and Proceedings. The course extends over three years and it offers the degree of B.C.L., with the distinction of the Elizabeth Torrance Medal to the first student in the graduating class, who must pass a special examination in Roman Law. The number of students in the present session is 25. The degrees given at the close of last session were nine in number.

In consequence of the fact that students of this Faculty are necessarily limited to those resident in Montreal, and that since the establishment of a rival faculty by a university whose seat is in another city, this small number has been divided, the work of the Faculty of Law does not appear to admit of much extension, and is indeed so limited as to be discouraging to the professors engaged in it. In this connection, we would state our conviction that the power, altogether unusual in other countries, which the Legislature of this province has given to universities to establish faculties elsewhere than in their own proper seats, is injurious to the true interests of education by subdividing the already small constituency afforded even by our largest cities, and by establishing a competition for students tending to lower the standard of attainment.

THE FACULTY OF MEDICINE.

This has twelve Professors, besides Lecturers and Demonstrators. Its course extends over four years, including summer as well as winter sessions, and embraces a thorough training in all the subjects of a medical education. It gives especial attention to Clinical Medicine and Surgery, and to hospital practice, and has the most approved means and appliances for the study of Practical Chemistry, Physiology, Histology, and other accessory and special departments of medical science. Its new classrooms and laboratories have already been referred to. The number of students in the present session is 271. The degrees

granted at the close of last session were 36. The Holmes Gold Medal for the highest general proficiency, and the Sutherland Gold Medal for Chemistry are awarded in this Faculty.

Though the Medical Faculty was enabled to take possession of its new building at the beginning of the session, much remained to be done in its furnishing and fitting up, and work is still actively proceeding in the arrangement of the Museum and other improvements, which will permit the full benefits of the ample provision made for the Faculty to be experienced in the session of 1886-87, when it is confidently believed that facilities will be offered for medical training in every department hitherto unequalled in this Dominion.

THE FACULTY OF ARTS.

This Faculty has nine professors and three lecturers, and another lecturer and a laboratory assistant will be added next session. Its course extends over four sessions, and includes Classics, Mathematics, English, Modern Languages, Hebrew, Mathematical and Experimental Physics, Chemistry, Geology, Zoology and Botany, Mental and Moral Philosophy, Logic and Rhetoric. These subjects are so arranged that there is a uniform course for all students up to the close of the Second Year, which terminates with the "Intermediate" examination. In the Third and Fourth Years a wide range of options is permitted to the student, as well as exemptions in favour of work in professional faculties. In addition to the Ordinary course, Honour and Practical courses of a thorough character are open to the students. It has an excellent Physical Apparatus and a well arranged Chemical Laboratory, and the Peter Redpath Museum presents facilities unequalled elsewhere in this country for the study of Geology, Zoology and Botany. Its library is now large, and is especially rich in modern books useful to students, and in books of reference. It has six endowed medals, besides that given by Your Excellency, which are annually competed for in the Honour courses. Among its prizes are the Neil Stewart Prize in Hebrew, the Early English Text Society's prize for English Literature, the New Shakespeare Society's prize, and the prize for French offered by the Alliance Francaise. It has several endowed

exhibitions and scholarships of from \$100 to \$125 in value. Of these, eleven were awarded in the past session.

The Special Course for Women under the Donalds Endowment is carried on by professors and lecturers of this faculty in separate classes. It offers to women the same advantages as to men with respect to lectures, options, examinations, classing and degrees.

The number of students in the Faculty in the present session is:—

Men.....	161
Women.....	51
Total.....	<u>212</u>

The degrees given at the end of last session were:—

B.A.	24
M.A.	4

THE FACULTY OF APPLIED SCIENCE.

In this Faculty, the youngest, but one of the most important and successful, there are four Professors, with six others in other faculties who give a portion of their time, and special instructors in Mechanical Engineering and Freehand Drawing.

The Course of study extends over four years, and provides the training required for the professions of Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, in each of which branches there are special courses beginning with the Second Year, the studies of the First Year being common to all the Departments. The highest testimony of professional men and educators in this country and abroad has been given to the thoroughness and efficiency of the training in this Faculty; and the large number of young men from all parts of the Dominion who have taken advantage of the course, and many of whom now occupy important positions, is a further evidence of this.

According to a statement furnished by the Dean of the Faculty, four of its graduates are professors in colleges, fourteen are employed in geological surveys, sixteen are resident or assistant engineers on railways, six are employed as engineers in public works, two are managers of chemical and mining works, and two are editors of engineering journals. Others

are engaged in private practice as surveyors, architects, mining engineers, etc.

This Faculty offers to students the British Association Gold Medal and the Lansdowne Silver Medal for the highest General Proficiency, and the Scott Exhibition contributed by the Caledonian Society of Montreal. Its course leads to the degrees of Bachelor of Applied Science, Master of Engineering and Master of Applied Science.

It has an excellent laboratory and assaying-rooms and a valuable collection of engineering instruments and mining and mechanical models. Its requirements in the way of additional accommodation and addition to its staff have been already referred to, and it is hoped will soon be supplied by the friends of education or those interested in the industrial progress of the Dominion which its teaching directly tends to promote.

In addition to the regular lectures, special lectures have been delivered by eminent engineers, who have been invited by the Faculty to give the students the benefit of their experience in particular branches of the profession.

The number of students in the present session is 50, besides those taking advantage of special classes. At the close of last session there were seven graduates—four in Civil Engineering and three in Mining Engineering.

AFFILIATED COLLEGES.

Morrin College, Quebec, which is affiliated in so far as degrees in Arts are concerned, reports six professors representing the subjects of the Course in Arts. It has in the present session 22 students, and at the close of last session sent up six successful candidates for the Degree of B.A., and four for the Intermediate.

St. Francis College, Richmond, is affiliated in so far as the Intermediate examination in Arts is concerned. It reports five professors and lecturers and 12 students, and at the close of last session sent up one successful candidate for the Intermediate examination.

Four theological colleges in the city of Montreal are affiliated to the University and have representatives in its Corporation and the right to obtain reports of the progress and examinations

of students, as well as the privilege of exemptions, in favour of Theological courses of study, from some portions of the studies in Arts. Many of the students in these colleges, or preparing to enter them, are in attendance in the classes in Arts, either as undergraduates or as partial and occasional students, and are thus deriving important advantages from the University, in which many of them graduate, often with high Honours.

THE M'GILL NORMAL SCHOOL.

This important institution has a staff of three Professors, besides instructors in Music, Elocution, Drawing and Writing, and its course is arranged in accordance with the School law of the Province of Quebec in such a manner as to train teachers for Elementary and Model schools and Academies, the latter class of teachers being, however, often employed in the higher grades of ordinary schools. Those who take the Academy Diploma have the further privilege of entering into the Second Year of the Faculty of Arts and obtaining a diploma of higher grade. On the other hand, graduates of the University may obtain the diploma of the Normal School on passing an examination in the Art of Teaching.

Miss Nannie Green, a teacher trained in the School, and subsequently a pupil of the Art School at South Kensington, has recently been appointed Instructress in Drawing, in place of Mr. H. Bird, resigned. Mr. G. W. Parmelee, also a teacher trained in the School, and late of St. Francis College, has been appointed Head Master of the Boys' Model School.

In the past session we were indebted to the Rev. E. I. Rexford, B.A., Fellow of the University and one of the Secretaries of the Department of Public Instruction, for a special course of lectures on the School Law and the Duties of Teachers.

The Normal School offers to its students the Prince of Wales Medal and Prize, the Lansdowne Silver Medal, and the J. C. Wilson Prize, and bursaries in aid of board and travelling expenses are paid to students from the country to facilitate their attendance. The sessions of the School extend from September 1st to June 1st,—and three sessions, including practice in the Model schools as well as attendance on lectures, are required to complete the full course.

According to statistics collected by the Principal of the School, out of 776 persons trained in it, 681 are known to have been engaged in teaching, and the average duration of their employment has been $6\frac{1}{2}$ years. This is a very satisfactory result, more especially as it is certain that several of those who have actually taught have not been heard from.

The number of students in the present session is 77, and at the close of last session the following diplomas were granted by the Superintendent of Education :—

For Elementary schools	37
For Model schools	30
For Academies	9

The number of pupils in the Model schools attached to the Normal School is 341.

SCHOOL EXAMINATIONS OF THE UNIVERSITIES.

These examinations, which are carried on jointly by the Universities of McGill and Bishop's College, are intended to test the work of the higher schools, and to afford their pupils the opportunity of obtaining University Certificates, to which are attached, on certain conditions, the title of Associate in Arts or of Senior Associate in Arts. These examinations are also received for Matriculation in the Faculties of Arts and Applied Science.

In the past session candidates were sent up from eight schools. Of these, 30 passed for the Certificate of Associate in Arts and two for the Junior Certificate. Only one candidate passed as Senior Associate. It is greatly to be desired that a larger number of the academies and high schools should take advantage of these examinations.

THE LIBRARY.

The report of the Library Committee is appended to this report. From this it appears that our library at length exceeds 25,000 volumes, and this, it is to be observed, does not include the valuable professional library of the Medical Faculty, containing about 10,000 volumes.

In the past year the Library has been largely used by students and by original workers, and has been enriched by several important donations, among which those of Mr. Peter

Redpath, the Hon. Judge Mackay, and the McGill College Book Club, deserve special mention.

Much useful work has also been done by the Assistant Librarian in cataloguing and arrangement, and satisfactory progress has been made in binding the large number of periodical and other works hitherto unbound and therefore liable to loss and difficult of access.

THE PETER REDPATH MUSEUM.

As will be seen by its report, which is appended, the Museum has enlarged its collections and appliances for instruction in several directions in the past year. It affords suitable accommodation to the Natural Science classes of the Faculties of Medicine, Arts and Applied Science, has special classes in Botany for men and women, with practical work, and extends its advantages under proper regulations to schools and to the general public.

It serves also to give to all the students of the University, whether taking the classes in Natural Science or not, important facilities for learning something of the aspects of nature in this country, and of the present magnitude of our knowledge of natural objects.

It also offers facilities to original workers in Natural History not previously possessed in this country; and a number of papers and memoirs published in Scientific Transactions and Journals in the past year are based on materials in its collections, or on work done in the Museum.

Details as to the numerous valuable donations which it has received, the additions made to its appliances for teaching, and the number of visitors, will be found in the Appendix.

THE OBSERVATORY.

The report of the Superintendent shows that the Meteorological and Time Services have been regularly and efficiently conducted during the year. He notes the fact that the railway companies centering in Montreal continue to receive our time signals without any payment therefor; and were the University more wealthy and better able to support its scientific work, we would be content to give this privilege freely; but as it is, and

when we consider that much more wealthy observatories in the United States are in receipt of handsome remuneration for similar services, we can scarcely regard the arrangement as satisfactory.

An important improvement in the apparatus for time is the purchase of a Sidereal clock, costing \$500, for \$300 of which we are indebted to the Government Time Service. The clock was made by the Ballou Company of Harvard, and through the kindness of Prof. Pickering was tested for three months at the observatory of Harvard College. The chronograph procured in 1883, and which did not prove satisfactory, has also been repaired and rendered serviceable.

The important observations to determine the longitude of Montreal, carried on with the kind assistance of Prof. Pickering and Prof. Rogers of the Harvard University, have been completed, so that we have now one point in Canada, namely, the pier of our transit instrument, the longitude of which is accurately known.

The Observatory has thus been doing good work for science and for the interests of the Dominion; and in its relation to the University it affords the means of instruction to students desirous of training in methods of observation. Six students took advantage of these facilities last session.

In concluding this Report, the Governors, Principal and Fellows desire to express their gratitude to God for the measure of success which has attended their work, and their obligations to the many friends, who have aided through them the higher education, which is so important as an element in the prosperity and greatness of our country.

I have the honour to be,

Your Excellency's obedient servant,

JAMES FERRIER,

Chancellor.

*STATEMENT of the RECEIPTS and EXPENDITURE of the
from 1st July, 1884,*

RECEIPTS.

GOVERNMENT GRANTS :—		
Provincial	\$ 2,500 00	
Superior Education Grant.....	1,650 00	
Dom. Govt. Grant, Observatory, \$500; Observers, \$775.....	1,275 00	
City of Montreal, to Observatory, \$150; Harb'r Com'rs. do \$250.....	400 00	\$ 5,825 00
SCHOLASTIC FEES :—		
Faculty of Arts (Ordinary, \$811; Library, \$568).....	1,379 00	
Faculty of Applied Science, (Ordinary, \$2,147; Library, \$188)....	2,335 00	
Botany and Zoology Fees.....	325 00	
Registration (Ordinary, \$258; Higher Degrees, \$2).....	260 00	
School Examinations	75 00	
Diploma Fees	230 00	
Gymnastic Fees	337 50	4,941 50
COLLEGE GROUNDS MAINTENANCE.....		178 00
ANNUAL DONATIONS :—		
Scholarships and Exhibitions	563 75	
Medals and Prizes.....	322 58	886 33
SPECIAL DONATIONS :—		
Redpath Museum, Maintenance.....	1,300 35	
Current Expenses	3,625 00	4,925 35
INTEREST, &C., FROM INVESTMENTS :—		
Net Returns, including arrears from former years.....		34,136 70
ELECTION OF FELLOWS.....		25 50
SUNDRY PETTY RECEIPTS.....		10 47
TOTAL ORDINARY RECEIPTS.....		\$ 50,928 85
RECEIPTS—SPECIAL FUNDS :—		
College Grounds (Iron Fence)	1,000 00	
Chair of Botany.....	1,850 00	
Ladies' Arts Fees, \$387; Donalds, Interest account, \$963 46.....	1,355 46	
Molsons' Museum Maintenance.....	54 43	
Leancoil and Campbell Funds—Interest.....	3,426 16	
Special Donation to Museum.....	511 96	
Gale Chair Fund—Interest	409 61	
Ladies' Class-room Furniture	350 00	
Citizens' Committee, British Association, Apparatus	1,500 00	10,457 62
INVESTMENT ACCOUNT :—		
Gale Chair, on account.....	2,853 75	
Greenshields Chair, final.....	13,333 34	
Campbell Memorial Fund, on account	14,600 09	
Scott Chair, final.....	5,968 00	
Donalds Endowment Fund	50,000 00	
Endowment Fund, 1851, on account	1,500 00	88,255 09
Investments repaid during year		45,869 68
SPECIAL SAVINGS BANK BALANCES, 30th June, 1884, \$12,874 40		
Less overdraft.....	67 66	
	12,806 74	
LEANCOIL AND CAMPBELL FUNDS; BANK BALANCE, 30th June, 1884, 66,493 58		
GENERAL FUND; BANK BALANCE, do.	42,380 82	
	<u>121,687 14</u>	
		<u>\$317,198 38</u>

VERIFIED, A. H. PLIMSOLL, Auditor.

ROYAL INSTITUTION for the ADVANCEMENT of LEARNING,
to 30th June, 1885.

EXPENDITURE.

ADMINISTRATION:—		
Salaries Principal, Secretary and Accountant).....	\$ 3,900 00	
Office expenses.....	193 69	
Porters and Caretakers.....	1,196 00	
		5,289 69
GENERAL EXPENSES:—		
Fuel.....	919 36	
Printing, Advertising and Stationery.....	1,874 52	
Charges (Gibson and Mills Annuities, &c).....	1,544 03	
Insurance, three years.....	1,785 17	
College Repairs, \$430 35; Grounds, Maintenance, \$362 58.....	792 93	
Law Charges, \$185 42; Sundries, \$17.....	202 42	
		7,118 43
EDUCATION:—		
Faculty of Law.....	1,287 50	
Faculty of Arts.....	19,665 33	
Faculty of Applied Science.....	6,722 88	
Observatory.....	1,418 65	
Diplomas.....	156 15	
Nat. Phil. Class, \$65.20; Chemicals, \$49 76.....	114 96	
Gymnastic Instruction.....	335 00	
School Examinations.....	378 25	
		30,078 72
SCHOLARSHIPS AND EXHIBITIONS.....	1,923 50	
MEDALS AND PRIZES.....	615 40	
		2,538 90
LIBRARY, \$102 06; Maintenance, \$908 54; Books and Binding, \$821 04.....		1,831 64
MUSEUM—Maintenance.....		1,385 93
IMPROVEMENTS AND ADDITIONS:—		
College Grounds.....	108 86	
Fixtures and Furniture, \$126 72; Library do, \$70 26.....	196 98	
Philosophical Apparatus.....	354 99	
Chemical Laboratory.....	180 77	
Gymnasium Building.....	88 59	
Observer's House.....	50 00	
Museum.....	258 20	
		1,238 39
TOTAL ORDINARY EXPENDITURE.....		\$49,481 70
EXTRAORDINARY EXPENDITURE:—		
College Grounds (Iron Fence).....	1,600 00	
College Buildings (Alterations to date).....	2,300 00	
		3,900 00
EXPENDITURE—SPECIAL FUNDS:—		
Chair of Botany.....	1,614 51	
Ladies' Arts Classes.....	1,331 82	
Molson's Museum Maintenance.....	540 00	
Leancoil and Campbell Funds, Interest paid Medical Faculty.....	3,966 00	
Special Donation to Museum.....	198 36	
Gale Chair Fund, Interest paid Law Faculty.....	499 61	
Library Committee.....	19 92	
		8,080 22
INVESTMENT ACCOUNT:—		
Invested during year.....	198,988 59	
Medical College, Additions to date.....	5,100 00	
		204,088 59
SPECIAL SAVINGS BANK BALANCES on hand 30th June, 1885.....	8,802 97	
LEANCHOIL and CAMPBELL FUNDS, BANK BALANCE do.....	13,540 94	
GENERAL FUND, do do.....	29,303 96	
		51,647 87
		\$317,198 38

MONTREAL, 2nd July, 1885.

W. C. BAYNES, *Bursar*.

SUMMARY OF STATISTICS.

(Session 1885-6.)

STUDENTS AND PUPILS.

McGill College.

Students in Faculty of Law	25
“ “ Medicine	271
“ “ Arts (Men)	172
“ “ Arts (Women)	51
“ “ Applied Science	50
	<hr/>
Deduct five entries in two faculties	569
	5
Total McGill College	564

Affiliated Colleges.

Students in Morrin College.	22
“ St. Francis College	12
“ McGill Normal School	77
Total	111

DEGREES AND DIPLOMAS.

Degrees Conferred.

Doctors of Medicine	36
Masters of Arts	4
Bachelors of Civil Law	9
Bachelors of Arts	24
Bachelors of Applied Science	7
Total	80

Normal School Diplomas.

Academy	9
Model School	30
Elementary	37
Total	76

School Certificates.

Senior Associate	1
Associate in Arts	30
Junior Certificate	2
Total	33

SCHOLARSHIPS AND EXHIBITIONS.

Faculty of Arts.

- 6 Exhibitions, value \$100 to \$125.
- 5 Scholarships, value \$120 to \$125.
- 96 Free Tuition Scholarships in the gift of benefactors.
- 14 Free Tuition Scholarships given on competition.

The founders or donors of these exhibitions and scholarships were Mr. W. C. McDonald, Mrs. Redpath, Mr. Charles Alexander, Mr. George Hague, Major Hiram Mills and Dr. A. Johnson.

Faculty of Applied Science.

The Scott Exhibition	\$ 60
The Burland Exhibition	100

REPORT OF THE LIBRARY COMMITTEE FOR 1885.

To the Corporation of McGill University.

GENTLEMEN :—

In submitting the following as their third annual Report on the Library, the Committee, whilst they have nothing of a specially noteworthy character to record, are yet able to report that a steady progress has been made in the use and appreciation of the Library on the part of those for whom it is maintained, as also, in its more complete equipment for service in the future.

Most of the additions made during the year have consisted of new books, of which a large number have been sent as donations from the Home and Dominion governments, from the governments of the United States and of France, from societies and institutes in Great Britain and other countries. It is gratifying to note that the list of those in this way contributing to the Library is increasing every year, whilst their contributions are of great value for the purposes of scientific reference. Mr. Peter Redpath has made important additions to his very valuable collection of books in the various departments of English Literature. He has also presented a fac-simile copy of Domesday Book, in two volumes, and bound in exact imitation of the original; and the value of the gift was enhanced by the presentation,—also a fac-simile of the original,—of an iron chest for the safe-keeping of these volumes; all of which cannot fail to be objects of great interest to the historical student and antiquarian. The Hon. Judge Mackay has also continued to add to his valuable collection donations of books in parliamentary history, etc., some of which are rare and not easily obtained. Mr. Arthur Briggs, of Rawdon, Leeds, who visited this city as a member of the British Association, has made a donation in money, which he wished to be used in the purchase of works on British and Irish Numismatics, the order for which, owing to the scarcity of some of the books, has as yet been only partially executed.

The book-case for holding the "T. D. King Shakespeare Collection" has been made and placed in an appropriate position in the Library, free of charge on the Library funds, through the kindness of Prof. Moyse, for which service he received the special thanks of the Corporation. This collection has been made of still greater value to the students of Shakespeare by the presentation, by Mr. W. C. McDonald, of a complete set of the old Shakespeare Society's publications, all handsomely bound.

Donations of books have also been received from Sir William Dawson, the McGill College Book Club, the Trustees of the British Museum, and other societies; which, through the kindness of the editor of the *Montreal Gazette*, have been acknowledged *in extenso* every quarter in that paper, and for which the thanks of Corporation or of the Committee have been duly tendered to the donors.

Your Committee have endeavoured to reduce as far as was practicable the number of unbound volumes, and to have bound, as the volumes were completed, the various periodicals which are taken in: for which expenditure they received a grant of \$150 from the Board of Governors, who also placed the sum of \$100 to the credit of the Committee for general and petty expenses.

It is creditable to the students and others using the Library, that during the year no book has been lost or seriously damaged, nor has any fine been imposed for the violation of rules. A pleasing illustration of the appreciation by the students of the value of the Library is furnished by the fact that the graduating classes of 1885 in the Faculties of Arts and Applied Science have subscribed the sum of \$31, which they wish to be used for the Library, either for the binding of magazines or otherwise as the Library Committee may see fit. Your Committee regard this considerate gift as deserving special recognition from the Corporation, and they accordingly recommend that a special vote of thanks be tendered by the Corporation to the donors.

Something has been done in the way of completing valuable series of Transactions and Periodicals, which from various causes had become broken. And it is greatly to be desired, that

for the future, all proper efforts be made to keep such series complete, from year to year, by carefully noting irregularities of delivery, etc., and by having them bound as soon as the volumes are severally completed.

These matters are now attended to as far as practicable by your Committee, in conjunction with the Honorary and Assistant Librarians. And in this connection, your Committee have much pleasure in bearing their cordial testimony to the care and diligence and efficiency displayed by Mr. Taylor, the Assistant Librarian, in the discharge of his duties during the past year.

It remains only for your Committee to say, that they have met regularly during the year; and have, to the best of their judgment, endeavoured to make the Library more serviceable and complete for those resorting to it. And although much remains to be done, especially in the matter of procuring important works of reference which are much needed, yet when the limited means available for such purposes are taken into account, the progress already made may justly be regarded as encouraging.

Appended to this Report is a tabular statement of the use and condition of the Library during the year now reported on, and at date.

All which is respectfully submitted by your Committee.

GEORGE CORNISH, LL.D.,

Honorary Librarian.

MCGILL COLLEGE,
January 26th, 1886.

CONSPECTUS OF LIBRARY, 1885.

<i>Quarters ending.</i>	<i>Readers.</i>	<i>Visitors.</i>	<i>Books read.</i>	<i>Books lent.</i>	<i>Total vols.</i>
(1885)					
April 21.....	1078	49	1122	125	24,408
June 24.....	33	127	31	332	24,775
Oct. 27.....	350	29	368	450	25,031
(1886)					
Jan. 25.....	992	34	706	579	25,064
	2453	239	2227	1486	

Number of Vols. January 20th, 1885..... 24,322

Increase in 1885—Vols..... 742

REPORT OF THE MUSEUM COMMITTEE FOR THE
YEAR 1885.

To the Corporation of McGill University.

GENTLEMEN :—

The Committee of the Peter Redpath Museum have much pleasure in reporting the continued growth and usefulness of this important institution, and more especially the improvement and extension of its collections by the work of the Honorary Curators and Assistant Curator, and by purchases and donations.

The Museum and its class-rooms have been in constant use by large college classes, visitors to the number of 1,520 have enrolled their names, and, in addition to these, classes from schools have frequently been permitted to inspect the Museum under the care of their teachers.

Mr. Redpath has kindly continued his donation of \$1,000 for current expenses. Mr. J. H. R. Molson has given an additional sum of \$500 for the purchase of specimens, and the salary of the Assistant Curator has been paid by the liberality of a lady friend.

A very valuable addition has been made to the mineral collections by the purchase of the cabinet of the late Mr. J. G. Miller, of Ottawa, which we have been enabled to secure by the liberality of Mr. J. H. R. Molson. It includes a very complete collection of the more important Canadian minerals, especially those of the Laurentian districts, a good general collection, and a large quantity of material suitable for exchanges and donations to foreign museums.

Advantage was also taken of Dr. Harrington's recent visit to Europe to secure a number of minerals and rocks necessary for study, but not hitherto represented in the collections. These, together with the Miller Collection, are now being arranged in the Museum.

We have to thank the Director of the Geological Survey of India for an interesting collection of fossil plants, and have received other donations, a list of which will be appended to

this Report. Of these we may specially mention a series of Vesuvian minerals and rocks from Prof. Guiscardi of Naples, fossils and minerals from the collections of the late George Barnston, Esq., F.R.S.C., and Upper Silurian fossils from Lieut.-Col. Grant of Hamilton, Ont.

Additional cases have been procured for the collections of fossils and rocks and for the Herbarium; and it is proposed, as soon as means permit, to provide suitable cases for collections of Canadian economic minerals, and for the proper display of the collection of woods, more especially for the large collection presented last year by Dr. Mohr, the specimens in which are now being cut and polished.

The fine skeleton of a gorilla presented by the Liverpool Free Museum has been admirably mounted by Messrs. Ward of Rochester, and is now in a suitable case; and a nearly complete skeleton of the American bison, collected by the Principal and Mr. J. H. R. Molson on the plains between Medicine Hat and Calgary, has also been mounted by Mr. Bailly of Montreal, and is now in the Museum.

Much work has been done by the Principal, Dr. Harrington and Prof. Penhallow in improving the arrangement of the specimens, and Mr. Currie has been diligently engaged in mounting and labelling, except for a short time in the autumn, when he was employed in collecting; and secured a large number of Silurian fossils, including some species not hitherto represented in the collections, and many duplicates for exchanges.

The Committee has purchased for the use of the Museum an oxyhydrogen lantern microscope of the best quality, made by Newton & Co. of London, also a small lathe for grinding and polishing, and a few of the excellent models of animal structures prepared by D'Azoux of Paris.

Should other work permit, it is hoped that in the course of the session a number of collections of duplicates will be made up for exchanges.

A new and enlarged edition of the "Guide to Visitors" has been prepared and printed.

On behalf of the Committee,

B. J. HARRINGTON, B.A., PH.D., F.G.S.,
Honorary Curator.

January 26, 1886.

PRINCIPAL DONATIONS TO THE MUSEUM.

- From Dr. Johnston Lavis, Naples—Collection of Vesuvian Minerals.
- “ Prof. Guiscardi, Naples—Collection of Vesuvian Rocks and Minerals.
- “ J. F. Torrance, B.A.—Minerals from Marlow, P.Q.
- “ J. B. Caulfield—Mounted specimen of *Tamias striatus*.
- “ Mr. C. H. Livingstone—Collection of New Brunswick Plants ; Skull of *Ursus Americanus*.
- “ H. H. Winwood, Bath, England—Collection of Rhaetic Fossils.
- “ Charles Gibb, B.A.—Recent Limestones, Florida ; specimens of *Luffa Egyptiaca* ; Sponges from Bahama.
- “ Mr. A. H. McKay, Pictou, Nova Scotia—Specimens of *Spongillidæ*.
- “ Dr. Wolfred Nelson—Specimens of Crustaceans and Reptiles and Indian Skulls, Central America.
- “ Mr. G. F. Matthew, F.R.S.C.—Cambrian Fossils from St. John.
- “ H. A. Ami, B.A.—Specimen of Endoceras, Trenton Limestone.
- “ Mr. W. C. Lyon—Collection of California Plants.
- “ Miss Barnston—Minerals and Fossils from the collection of the late George Barnston, F.R.S.C.
- “ Mr. R. D. Lacoë, Pittston, Pa.—Collection of Carboniferous Plants.
- “ Rev. Dr. Patterson, New Glasgow, Nova Scotia—Micmac Antiquities, Nova Scotia.
- “ Mr. T. Drummond—Star-fishes and Echini, British Columbia.
- “ Lieut.-Col. Grant, Hamilton—Collection of Fossils, Anticosti.
- “ Mr. W. G. Ferrier—Specimens of Minerals from Maine.
- “ Mr. C. Robb—Beryl, etc., Maisonneuve, P.Q.
- “ W. J. Morris, Perth, Ont.—Fossils from the Potsdam Sandstone.
- “ Mr. Thos. Macfarlane, F.R.S.C.—Silver Ore, Silver Islet, Lake Superior.
- “ J. H. R. Molson—The Cabinet of the late Mr. J. G. Miller of Ottawa, containing a very valuable collection of Canadian and Foreign Minerals.
- “ H. Beaugrand, Esq., Mayor of Montreal—Cast of ancient Mexican Calendar of Tenochtitlan.
- “ The Director of the Geological Survey of India—Collection of Jurassic Plants of India.
- “ Dr. A. Van Koenen, Gottingen—Collection of Mesozoic Fossils of Germany.
- “ Mr. Thos. Macfarlane, F.R.S.C.—Collection of Rocks from the Andes.
- “ Mr. A. G. Taylor—Large specimen of Garnetiferous Gneiss.

REPORT OF THE SUPERINTENDENT OF THE
OBSERVATORY FOR THE YEAR ENDING
DECEMBER 31ST, 1885.

To the Corporation of McGill University.

GENTLEMEN :—

I have the honour to present my Report on the Observatory for the year ending December 31st, 1885.

The usual meteorological observations have been continued, throughout the year, without interruption. These have been reduced, and the results for each day have been published in the *Montreal Gazette*. Summaries for each month and for the year have been distributed. The annual course of instruction in meteorological work was attended by six students, undergraduates of the Fourth Year in Arts and in Applied Science.

The time-service has been conducted with much care. Sidereal observations for clock errors were made on 108 nights. The noon time-ball has been dropped and other time-signals distributed, as described in the reports of the past two years. Intercomparisons of clock-signals with the Toronto Observatory have been made on every alternate Friday night throughout the year. The greatest difference which was found on any night between the clocks of the two observatories—after correction for error, personal equation and transmission time—was $0^{\circ}.52$, and the average difference for all the comparisons was $0^{\circ}.26$. The railway companies centering in Montreal continue to receive our time-signals without payment therefor.

A Sidereal clock has been purchased for the Observatory from the Ballou Manufacturing Company, Hartford, Conn., at a cost of \$500. As a condition of purchase, and through the courtesy of Prof. Pickering, a trial of this clock, during three months' running in the Harvard College observatory, was made. Its performance during this time was exceptionally good. The clock has a four-legged Denison gravity escapement and mercurial compensation for the pendulum. It is

now mounted on a brick pier and enclosed in a uniform temperature compartment in the basement of the Observatory.

The chronograph which was obtained from Messrs. Cooke & Sons, York, England, in 1883, proved so unsatisfactory as to be practically useless. It has been converted to the cylinder form, under my direction, and is now a serviceable instrument.

The determination of the difference of longitude between the Harvard College Observatory and this Observatory has been completed, with the result that the pier of our transit instrument is $0^{\text{h}}. 9^{\text{m}}. 47^{\text{s}}. 556 \pm 0^{\text{s}}. 014$ west of the dome of the Harvard College Observatory, and therefore $5^{\text{h}}. 54^{\text{m}}. 18^{\text{s}}. 549 \pm 0^{\text{s}}. 043$ west of the Greenwich meridian. The determination of our longitude was made by reference to Cambridge, because its position in longitude is the most accurately known in America, resting as it does on three independent determinations by the Atlantic cables. Our station is the only one in Canada, the longitude of which has been determined with that accuracy which meets the requirements of modern geodetic work. For a short statement of the methods employed in this work, reference is made to my report for the year 1883. A more detailed account, together with a full discussion of the observations, will appear in the forthcoming volume of the Proceedings of the Royal Society of Canada. The thanks of the University are due to Prof. E. C. Pickering, Director of the Harvard College observatory, for his courteous co-operation in this work, and also to Prof. A. W. Rogers, who has given so much of his valuable time in prosecution thereof.

I have pleasure in stating that the petition to the Honorable the Minister of Marine, presented in January last, praying for an increase of the annual government grant towards the support of the Observatory, was favourably received and the prayer in part granted.

Respectfully submitted,

C. H. McLEOD, MA. E.,

Superintendent of the Observatory.

MCGILL COLLEGE,

Montreal, January 27th, 1886.

McGill College,

MONTREAL.

SESSION 1886-7.

The Session of the *Faculties of Arts and Applied Science*, and of the *Donalda Special Course for Women*, will open on Sept. fifteenth, 1886. That of the *Faculties of Law and Medicine* on October first; that of the *McGill Normal School* on September first.

The calendar of the University, containing detailed announcements of the conditions of entrance, courses of study, exhibitions, scholarships, etc., will be published early in 1886, and may be obtained on application to the Registrar, W. C. BAYNES, B. A., McGill College.

Teachers, intending students or others desirous of receiving special advice or information, are invited to correspond with the Principal, SIR WILLIAM DAWSON, LL.D., or with the Registrar, or with either of the following:—

PROF. A. JOHNSON, LL.D., Vice-Dean of the Faculty of Arts.

PROF. H. T. BOVEY, M.A., Dean of the Faculty of Applied Science.

PROF. J. S. ARCHIBALD, M.A., B.C.L., Secretary of the Faculty of Law.

PROF. JAS. STEWART, M.D., Secretary of the Faculty of Medicine.

PROF. S. P. ROBINS, LL.D., Principal of McGill Normal School.

Copies of the Examination papers of last Session, and of the Statutes and Regulations of the University, will be furnished by the Registrar to any person remitting the sum of 75c. for the same.

W. C. BAYNES, B.A.,

FEBRUARY, 1886.

Registrar.