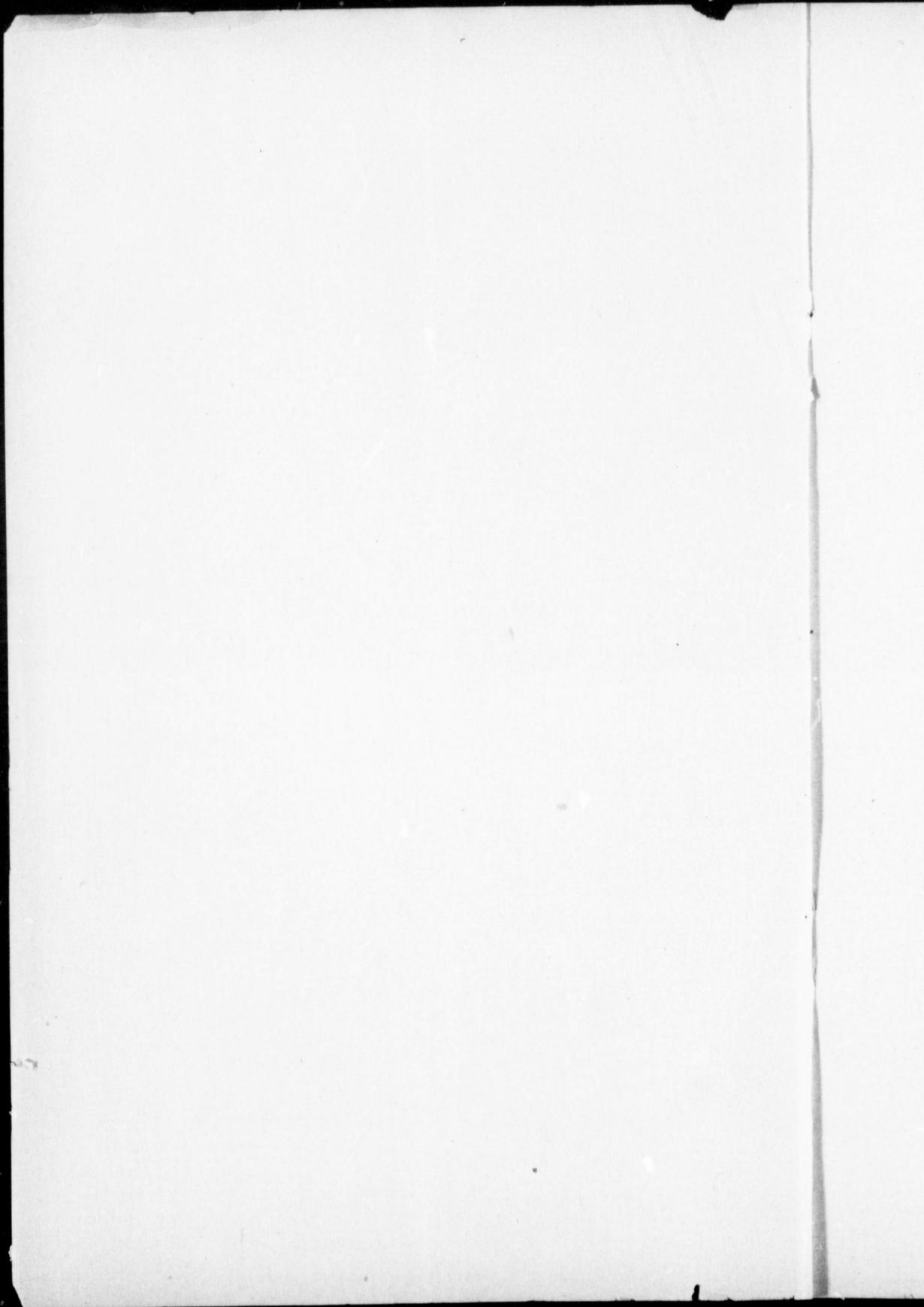


m/15/27
C2

ANNUAL REPORT
OF
McGILL UNIVERSITY,
1886.



ANNUAL REPORT
OF THE
GOVERNORS, PRINCIPAL AND FELLOWS
OF
MCGILL UNIVERSITY, MONTREAL,
FOR THE YEAR 1886.

(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 :—

The report which we had the honour to present to Your Excellency for the last educational year, afforded a very full and complete view of the different departments of the University. Referring to that Report for the organization and working of the several Faculties and Affiliated Institutions, we may, on the present occasion, confine ourselves to the statistics and history of the educational year now completed.

We have to lament the removal by death of two of the oldest and most honoured members of this Corporation, the Venerable Archdeacon Leach, D.C.L., LL.D., Vice-Principal and Dean of the Faculty of Arts, and the Reverend Henry Wilkes, M.A., LL.D., D.D., the representative of the Congregational College of British North America.

Dr. Leach was born in 1805, graduated as Master of Arts in the University of Edinburgh in 1827, and was licensed as a minister of the Gospel in 1831. He became a resident of Canada in 1832, and after spending some time in pastoral work in Toronto, and in St. George's Church, in Montreal, he was appointed in 1845 Professor of Classical Literature in this University, and in 1846, Vice-Principal. The latter office he

continued to hold till the time of his decease, and in the session of 1883-84, discharged the duties of the Principal in the absence of that officer. On the re-organization of the University under the amended charter, he resigned the office of Professor of Classics and was appointed to that of Logic and English Literature, and subsequently assumed the Molson Professorship of the former subject, which he held till 1881, when he was relieved from its active duties, with the title of Emeritus Professor. Dr. Leach, while a man of scholarly culture and tastes, and of refined and somewhat retiring manner, was characterized by a remarkable appreciation and interest in relation to matters of art and science and of social and educational progress, and had much power of influencing students and of communicating to them his own enthusiasm and rich stores of knowledge. He also merits the grateful remembrance of this University as one who remained attached to it, and promoted its interests at some sacrifice to himself, in its period of early struggle, and who was willing to co-operate with earnestness and zeal in those changes by which it entered on its more recent career of increased usefulness and prosperity.

Dr. Wilkes was born in the same year with Dr. Leach, and came to Canada in 1820, returning to Scotland in 1828 to prosecute his studies in the University of Glasgow and in the Divinity School of the Congregational Church. After taking his degree of M.A. and completing his theological course, he entered on pastoral work in Scotland, but in 1836 took up his abode in Canada, and began those ministerial labours which occupied the remainder of his life. In 1870 he became Principal and Professor of Theology in the Congregational College of British North America. Dr. Wilkes always took a warm interest in the Protestant Schools of the city and laboured in their behalf, and was an earnest and judicious promoter of education both in its popular and its higher forms. He was remarkable for the regularity of his attendance at the meetings of all bodies of which he was a member, and for the kindly and hopeful spirit which he always brought to their discussions. Of McGill University he was a steadfast friend, and was enabled to advance its interests in a variety of ways, more especially in its relation to the support accorded it by the citizens of Montreal.

Dr. Leach and Dr. Wilkes had attained to advanced years, and had finished the work of their lives, and to some extent, at least, had retired from active labour. We have had more recently to mourn the removal of two members of the Board of Governors, taken away in their full vigour and in the midst of their usefulness.

The Honourable Frederick W. Torrance, Judge of the Superior Court of the Province of Quebec, was a Master of Arts of the University of Edinburgh and took the degree of B.C.L. in McGill in 1856. He was for many years Professor of Roman Law in this University, and entered into the subject with a zeal and enthusiasm which did much to elevate and render attractive the study of that important subject. He was appointed in 1871 a member of the Board of Governors, and acted on the Library Committee and the Committee of the Normal School. Himself a man of strong literary tastes, he gave much attention to the library of the University, and testified his interest in it by the donation of \$1,000 to form a fund for the purchase of books on Mental and Moral Philosophy. In all cases of doubt, difficulty or legal complication, his wise counsel and conciliatory manner and his thoroughly earnest and Christian character gave a great power for good, which he was always ready to exercise in the interest of the University and of education in general.

Robert Anstruther Ramsay was the youngest member of the Board of Governors, dying at the early age of 41. He was a graduate of this University, both in Arts and Law. In the course in Arts he was a gold-medallist in Natural Science, and might have distinguished himself in scientific work but for his engrossing studies in the profession of his choice. Shortly after his appointment as a member of the Board of Governors in 1880, he was unanimously requested by the Board to assume the duties of Honorary Treasurer, vacant by the removal from the city of Mr. Peter Redpath. In this important office, his care and watchfulness over investments and expenditures have been of the utmost importance to the University, and we are the more indebted to him for this arduous and unrequited labour, that we know it was added to extensive professional work, and was the voluntary offering of a man who had many domestic ties and public engagements,

and who loved to devote his leisure to historical and other inquiries and literary pursuits, the results of which he, from time to time, gave to the public. He was one of those rare men who, with earnest and sterling character, unite business capacity and literary and scientific tastes, and was thus eminently fitted for the important position which he held in the University.

APPOINTMENTS.

By the statutes of the University, the Governors are required to appoint "one of the Professors of the Faculty of Arts Vice-Principal of the College and University and Dean of the Faculty of Arts." Under this statute, the important office left vacant by the decease of Dr. Leach has been filled by the appointment of Alexander Johnson, M.A., LL.D., Professor of Mathematics, and Peter Redpath Professor of Natural Philosophy. Dr. Johnson's long and most able services as Vice-Dean of the Faculty, in which capacity, for several years, the whole of duties of the Dean have been discharged by him, furnish a guarantee that the functions of this office, so essential to the welfare of the University, will continue to be discharged in the most efficient and satisfactory manner.

We regret that the University has been deprived of the services of Mr. J. Mason Mulgan, as assistant Professor in Classics, but his place has been filled by the appointment of A. J. Eaton, M.A., Ph.D., who has entered on the duties of his office with much energy and success.

With the view of providing more fully for the new demands established by the classes for women, Dr. Darey has been relieved from the duty of instructing the classes of the Normal School. While we regret that Dr. Darey's able services will no longer be available in the important work of training elementary teachers, we are glad that he should be enabled more entirely to devote himself to collegiate education, more especially as in this he may aid in training teachers for the higher schools. It is also a source of satisfaction that the Normal School has secured the services of Madame Sophie Cornu, a teacher of the highest qualifications, and whose appointment will add to that influence of feminine culture so important in a school in which the great majority of the students consists of young women.

BUILDINGS, &c.

The arrangement and fitting up of the new Chemical Laboratory for the Faculties of Arts and Applied Science have been completed, and will afford ample accommodation for the work of those faculties without the use of the already crowded Laboratory of the Medical Faculty, which has, in former years, been used by the students in Applied Science. The new laboratories are also models of convenient arrangement and fitting, having been carefully planned by Dr. Harrington, and are, it is believed, superior to any hitherto constructed in this country. The fitting up of the new laboratories permits a separate room to be assigned to such students of the women's classes as have selected this as one of their subjects of study. For the fittings and apparatus of the principal laboratory room, costing more than \$2,000, the University is indebted to the liberality of Mr. W. C. McDonald, one of the members of the Board of Governors. The total laboratory accommodation of the University for practical chemistry, in all the Faculties, now provides for 120 students.

We regret that the additions referred to in the last Report to University buildings in the matter of a Dining Hall and of a building for the Faculty of Applied Science have not yet been carried out, no funds available for these purposes having been obtained. Nor has anything been done toward the endowment of the Hebrew Chair, or the provision of an endowment for the Principalship in case of a vacancy in that office. It is to be hoped that some of these objects may attract attention in the year on which we are now entering.

PROFESSIONAL EXAMINATIONS.

The subject of the entrance examinations into the study of the professions and the value of University examinations relatively to this, has again engaged the attention of the University and of the Protestant Committee of the Council of Public Instruction. No relief in regard to the law of the Province of Quebec on these subjects has been obtained, and on the contrary, the Professional Councils, or some of them, have introduced new and troublesome provisions. An arrangement

has, however, been arrived at with the Protestant Committee of the Council of Public Instruction whereby the Examinations for Associate in Arts can be extended to all the Academies and High Schools, and it is hoped that this, when in operation, may establish a basis on which a system of preparatory instruction at once for matriculation and entrance on professional study can be established.

We regret to say that further encroachments on the rights of the Universities on the part of the Councils of the Bar and of the Medical Profession are contemplated, which may be injurious to the true interests of professional education. These relate to the privileges heretofore enjoyed by graduates as well as to the examinations for entrance to study.

Several educational fallacies underlie these encroachments. One is, that examinations alone can raise the standard of education, whereas this can be done only by well-equipped teaching bodies, such as those furnished by the Universities. Another is, that extra-academical examiners should be employed, whereas experience shows that only those who, by continuous teaching, are induced to keep up their reading and knowledge, can be suitable examiners to maintain and advance the standard of education. A third is, that the multiplication of lectures is the best method to raise the standard of education, whereas it has been proved by experience that this can best be done by the employment of skilled and eminent professors, by the cultivation of habits of independent study and by the extension of practical work. It is lamentable that these and similar fallacies, exploded in the most advanced educational countries, should appear to influence men whom we are bound to believe actuated by the wish to raise the standard of education and not by that spirit of local and race jealousy and professional exclusiveness sometimes attributed to them. In any case, it is time that an active and earnest movement should be made to arrest the evils arising from this cause. A committee of this Corporation has been appointed to consider the matter and to confer with other bodies on the subject.

In so far as the Province of Quebec is concerned, it is believed that the disabilities thus inflicted on the graduates of the Protestant Universities are contrary to the spirit of that

prov
Engl
tiona
that
It ha
coun
and

In
whic
rath
Dom
that
with
ment
great
scar
boar
Boar

In
in M
natio
Univ
an a
neces
rity a

W
whol
and
the C
form
grad
Univ
arran
Univ
Cons
bec i
Cath
It th
privi

provision of the Law of Confederation which guarantees to the English and Protestant minority of this Province the educational privileges which it possessed before Confederation, and that such action is not within the power of the local Legislature. It has been proposed to test this question by submitting a case to counsel, should our present appeals to the Local Government and legislature be unavailing.

In the case of the medical profession, it seems that the rights which educated young men have to a Dominion and Imperial rather than a Provincial career cannot be maintained unless a Dominion Board of Registration can be established, similar to that of Great Britain, and with power to arrange for reciprocity with the mother-country and the other colonies. The amendments recently introduced into the Imperial Medical Act would greatly facilitate such arrangements, but their full benefit can scarcely be obtained by our medical graduates till the local boards be removed and their place occupied by a Dominion Board of Registration.

In the meantime, the proposal to withdraw from graduates in Medicine the privilege of registration without further examination, directly abolishes one of the rights possessed by the University before Confederation, and subjects our graduates to an additional examination on the part of a body which must necessarily be under the influence of the Roman Catholic majority and trained after its methods, as distinguished from ours.

With reference to the Bar Act, it is to be observed that the whole regulation of the examination, both for admission to study and admission to practice, is transferred from the Universities to the Council of the Bar. The privilege hitherto enjoyed by the former as to the shortening of the term of apprenticeship of graduates, without which few students would enter on the University law course, is also made to depend entirely on the arrangements of the Council. In so far as the Protestant Universities are concerned, it is further to be observed that the Constitution of the Council of the Bar in the Province of Quebec is such that it must always have a large majority of Roman Catholics, and that it might consist wholly of Roman Catholics. It thus appears that one of the most important educational privileges enjoyed by the Universities before Confederation has

been removed from them, contrary to the spirit of their Royal Charters, and to the provision in that regard of the Act of Confederation, and transferred by Act of the Quebec Legislature to a body under the control of a Roman Catholic majority. We would be less disposed to make objection to this, were we of opinion that it is calculated to raise the educational standard of the profession ; but, for the reasons above stated, we believe it will have the contrary effect, and can only tend to the exclusion of educated men, more especially those of the English-speaking minority, from entering into the legal profession.

A statement of the rights and privileges claimed by the University has been prepared for submission to the Protestant Committee of the Council of Public Instruction, which is expected to act in the matter on behalf of the Universities as well as of the secondary schools, which are also injuriously affected by the changes in question.

ENDOWMENTS.

In view of the decline in the rate of investments, and of the termination in the present year of the annual subscriptions in aid of the University, given in 1881-82, the Governors, in April last, issued a statement to the friends of the University respecting its financial position. After reciting the steps taken in 1881 to increase its endowments, the following facts were stated respecting the results up to the present time, showing a very large amount of liberality toward the University and a great growth of its resources :

“In response to the appeal made in 1881, endowments were given to the amount of \$33,500, and annual subscriptions, extending over from two to five years, to the amount of about \$3,500 per annum. Subsequently to this, the William Scott Chair of Engineering was founded by the late Miss Barbara Scott, with a capital of \$30,000; the Hiram Mills Chair of Classics, by the late Major Hiram Mills, with a capital of \$43,000; the David J. Greenshields Chair of Chemistry and Mineralogy, by the late David J. Greenshields, E. q., with a capital of \$40,000; and the Gale Chair, in the Faculty of Law, by the late Mrs. Andrew Stuart (*née* Agnes Logan Gale), with a capital of \$25,000. The sum of \$25,000 was also given by

Mr. W. C. McDonald in endowment of his scholarships. In the Faculty of Medicine, the Lean Choil endowment of \$55,000 was given by Sir D. A. Smith, and the Campbell Memorial Endowment of \$50,000, by citizens of Montreal; while the Donalda Special Course for Women has been endowed by Sir D. A. Smith with the sum of \$50,000, to which the same donor has added \$70,000 in June last. Within this period the University has also received a number of gifts of smaller amount for endowment of medals and scholarships, for the purchase of apparatus and for additions to the Museum.

The result has been that while on 1st July, 1881, the revenue-producing investments of the University amounted in round numbers to... .. \$385,000
They stood in 1885 at..... 791,000

Showing an increase of..... \$406,000

Of this sum, the endowments *specially devoted* as detailed above, received to date, such as the Lean Choil and Campbell Funds for Medicine, the Donalda Fund for the education of women, the Gale Fund for Law and the McDonald Fund for scholarships, and other smaller contributions, amount to..... 260,000

On the other hand the subscriptions of 1881-82-83, with the Scott, Mills and Greenshields endowments, amounting to \$146,000, represent the addition to the General Fund of the University, *available for general purposes*, to make good the deficiency of revenue foreseen when the statement of 1881 was laid before the public, and to enable the University to maintain its work."

"Of the larger sums above referred to, amounting to \$260,000, it will be observed that, while enabling the University to enlarge and extend its work, they, being specially applied in *new* directions, have not added to its *general* revenue. For these liberal aids the University has good reason to be grateful; and, with their assistance, it has been enabled to avoid any reduction of its educational work, and to add largely to its means of usefulness, more especially in medical education and the education of women. These benefactions are not, however, available generally, and, as already stated, the full extent

of the benefactions received applicable to general purposes is \$146,000."

On the other hand, the causes above referred to had so far diminished the income that the University was again threatened with a probable deficit at the end of the financial year, while many objects important to its maintenance are yet unprovided for.

In these circumstances, the Governors are desirous that, in order to prevent any reduction of the work now in progress, the friends of the University should consider the expediency of a farther increase of the endowment, so as to meet the probable deficit and to provide a surplus available for unforeseen emergencies and for additions demanded by the increase in the number of students. The greatest amount of relief would be given to the University by the donation of sums to be invested for general maintenance, and which might, if desired, be designated by the names of the donors.

In furtherance of this, the following suggestions are respectfully presented to those desirous of promoting the higher education :

"I. The University would grant to contributors to the general fund a free tuition for one student in the Faculty of Arts for every sum of \$1,000 contributed."

"II. If preferred by contributors, their donations may be devoted to certain special objects, all more or less chargeable, or likely to be chargeable, on the general fund, which would be relieved by their being provided with special endowments. The objects most important in this respect at present are the following :—

1. The Principalship.
2. The Librarianship.
3. The Chair of Hebrew, to which the attention of the friends of the Theological Colleges is specially directed.
4. The Chair of French.
5. The Chair of German.
6. The Assistant Professorship of Classics.
7. The Chair of Mathematics.

8. The Chair of Descriptive Geometry.
9. The Chair of Botany, now temporarily provided for apart from the General Fund.
10. The Maintenance of the Faculty of Law.
11. The Maintenance of the Library, Museum and Apparatus.
12. The further endowment of the Faculty of Applied Science.

An endowment or endowments under either of the above heads to the amount of \$75,000, would enable the University permanently to provide for the whole of its present work under the existing rates of interest on investments: but to meet all the demands now made for increased educational facilities would require an addition of not less than \$250,000 to the present endowment."

"In connection with the larger sum above stated, the Governors will be most grateful for any benefactions leading to new departments of educational work, or to the extension of those now in progress, or to the improvement of its buildings or additions thereto, in connection with any of the Faculties, and more especially to the erection of a college Dining Hall and of a building for the Faculty of Applied Science; but it is thought expedient for the present rather to invite attention to the objects above specified, not as being in themselves more important than others, but as being in such a position that their endowment would give immediate relief to the General Fund, and thus contribute to the security and progress of the University."

"The Governors beg to submit the above facts and suggestions to their fellow-citizens, feeling that the maintenance and progress of an institution so important to the city, which has hitherto so liberally sustained it, is a matter of general interest, and one which will commend itself to the thoughtful consideration of an intelligent and progressive community. The Governors are, on their part, willing as heretofore to give their time and thought to the furtherance of the cause of higher education in connection with the University, and to administer in the most careful manner such funds as may be placed at their disposal. They can assure all benefactors that, from year to year, the expenditures have been sedulously watched with reference to their amounts and the practical utility of the objects for which they were made."

It is thought desirable again to direct attention to this statement, copies of which may be obtained by any desirous of detailed information on the subject, with the view of impressing on the friends of education the fact that there are still important openings for useful benefactions in connection with our work.

FACULTIES AND AFFILIATED INSTITUTIONS, &c.

The work of the several Faculties of Law, Medicine, Arts, and Applied Science goes on in the present session as heretofore. The Affiliated Colleges in Arts show a larger number of students than in previous years, and will send up a number of candidates for the Intermediate and B.A. Examinations.

By the summary of statistics appended to this report, it will be seen that at the close of last session ninety-one degrees were granted in Arts, Medicine, Law and Applied Science. Nine University gold medals were awarded to successful candidates in the examinations, as well as the gold and silver medals kindly presented by Your Excellency. 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.

At the beginning of the present session, eleven Exhibitions and Scholarships were awarded to successful competitors, as well as 110 free tuitions, the gift of Benefactors and of the Board of Governors. In the examinations of the Normal School, 72 diplomas were awarded to candidates of different grades, for Academies, Model Schools and Elementary Schools.

In the Donalda Special Course for Women, now endowed with the sum of \$120,000, by the munificence of Sir Donald A. Smith, the work of the third year in Arts is making satisfactory progress. The number of regular undergraduates has increased to 20, and the total number of students to 78. This affords encouraging evidence of public approval, and shows that these classes are meeting a real educational want. Next session, when the fourth year will be in operation, we may hope to have 30 regular students and a total attendance of

perhaps 100. At the close of next session, we may expect to have a graduating class of eight students coming up for the degree of B.A.

In the present as in the last session a course of evening lectures on important practical subjects has been organized by the Dean of the Faculty of Applied Science, for the benefit of students in that Faculty. These lectures have been delivered by leading engineers and scientific men, and have undoubtedly been of much service, at once as a means of instruction and as an encouragement and stimulus. The University is much indebted to the gentlemen who have kindly aided us in this way.

In the Normal School, several improvements in the course of study have been introduced by Dr. Robins, more especially in the teaching of languages and literature, and in the general arrangement of the work. The extension of the Primary School, asked for some time ago, has not yet been effected, but certain changes required in the heating apparatus and classrooms have been attended to by the Local Government. The attendance of the Principal of the school and some of the professors at the Teachers' Institutes, convened in different districts under the auspices of the Protestant Committee of the Council of Public Instruction, has now become a permanent arrangement of our educational system, and promises to be of great advantage. At the close of the session, 10 diplomas were granted for Academies, 28 for Model Schools, and 34 for Elementary Schools.

The Annual Convention of the Protestant Association of Teachers was held this year in the Normal School, and was very successful. The Peter Redpath Museum was thrown open for the reception tendered by the Principal of the University to the members of the Convention, and the use of the David Morrice Hall of the Presbyterian College was given for the public evening meeting. The attendance of teachers was large, the public interest very general, and, on the whole, the Convention was one of the most successful held by the Association.

In the school examinations of June last, candidates presented themselves from seven schools, and 31 candidates passed for

the certificate of Associate in Arts. In the next examinations it is hoped that the new arrangements, sanctioned by the Protestant Committee of the Council of Public Instruction, whereby the pupils of all the Protestant academies will come up for the examinations, will inaugurate a new epoch in the secondary education of this Province. This is the result at which this University has aimed throughout in its action on this matter, and it has been a source of regret that while we had secured precedence in this work, other provinces have been allowed to outstrip us in its extension to the schools. It is hoped however that, in future, this disadvantage will be removed from our higher schools, and that they will become more closely connected with the Universities in a manner mutually beneficial.

The number of students in the several Faculties and Departments of the University in the present session is large, although the smallness of the entrance classes, occasioned by the epidemic of last year, continues to be felt in the class of the second year. There are, in all, 536 students in the several Faculties of the College proper, namely: 20 in law, 228 in medicine, 234 in arts, and 57 in applied science, three being deducted for entries in two Faculties. In addition to these, there are 41 in colleges affiliated in Arts, and 92 studying for the profession of teaching in the Normal School. There are thus 665 students, without reckoning those in theological colleges or in the model schools of the Normal school.

With reference to the above, it should be understood that we reckon only students in actual attendance on classes, and that, in our system, though students in Applied Science and in Medicine attend classes in Arts, they are not reckoned as of that faculty, but only as of that in which they matriculate. Were the Science school and Medical school distinct institutions from the University, our lists in Arts would be swelled by many occasional and partial students. The majority of the students are from various parts of the Dominion of Canada, beyond the limits of the city of Montreal or its immediate district.

Several College Societies have been organized by the graduates and students, and have been in operation for a number

of years
without
they have
stituted
direct
the spirit
more

The
The
The
The
The
The
The
The

The
Observ
condit

The
this do
the me
35,000
numbe
scien
be esti

In th
and by
import
path, th
and the

Muc
libraria
progres
odicals
to loss

of years. Though informally recognized by the University, without any actual interference with their freedom of action, they have not been noticed in our official reports. They constitute however a most important means of education in directions not provided for in the regular work, and in which the spontaneous exertions of the graduates and students is of more value than any merely official action could be.

The principal associations of this kind at present are :—

- The Graduates' Society.
- The University Literary Society.
- The Undergraduates' Society.
- The McGill Medical Society.
- The Young Men's Christian Association.
- The University Club.
- The Athletic Association.
- The McGill College Book Club.

LIBRARY, MUSEUM AND OBSERVATORY.

The reports of the Library, Peter Redpath museum, and Observatory, appended to this report, will show the present condition of these departments of the University.

The number of volumes in the library is now 25,705, and this does not include about 10,000 volumes in the library of the medical faculty, so that the total number of volumes is over 35,000. It is also to be observed that an unusually large number of the books consists of works of present educational or scientific value, so that the actual value of the library is not to be estimated merely by its magnitude.

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, the McGill College Book Club and the Graduates' Society 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 periodicals and other works hitherto unbound, and therefore liable to loss and difficult of access.

As will be seen by its report, which is appended, the Peter Redpath museum has extended its collections and appliances for instruction in several directions in the past year. More especially, important botanical and zoological specimens have been presented or acquired, and additional microscopes and other apparatus have been purchased. It affords suitable accommodation to the natural science classes of the faculties of medicine, arts and applied science, numbering in the present session 186, 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 students of the University, whether taking the classes in natural science or not, the important advantage of 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.

Mr. Peter Redpath and Mr. and Mrs. J. H. R. Molson have continued in the present year their handsome donations towards the maintenance of the museum, and for the purchase of specimens, and the salary of the Assistant Curator.

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 report of the superintendent of the Observatory shows that the meteorological and time services have been regularly and efficiently conducted during the year. The observatory has thus been doing good work for science and for the interest 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.

The most important addition made to the observatory in the past year is the purchase of a Photoheliograph, for which a

separa
of astr
on he
practi

In c
memb
ness f
attend
the ye

On

separate house has been erected, and which will enable a kind of astronomical work to be undertaken not previously carried on here, and which promises to yield, in the future, important practical results.

In conclusion, while mourning the loss of so many valuable members of the University, we have much reason of thankfulness for its general prosperity, and the success which has attended the labors of its professors and other instructors, in the year that has passed.

On behalf of the corporation,

We have the honour to be,

Your Excellency's obedient servants,

JAMES FERRIER,

Chancellor.

J. WILLIAM DAWSON, LL.D.,

Principal.

*STATEMENT of the RECEIPTS and EXPENDITURE of the
from 1st July, 1885,*

RECEIPTS.

GOVERNMENT GRANTS :—		
Provincial.....	\$ 2,500 00	
Superior Education Grant.....	1,630 00	
Dom. Govt. Grant, Observatory, \$500; Observers, \$800.....	1,300 00	
City of Montreal, to Observatory, \$75; Harb'r Com'rs, do \$250 ...	325 00	
	\$ 5,775 00	
SCHOLASTIC FEES :—		
Faculty of Arts Fees (Ordinary, \$702; Library, \$544).....	1,246 00	
Faculty of Applied Science (Ordinary \$2,135; Library, \$180).....	2,315 00	
Botany and Zoology Fees.....	270 00	
Registration (Ordinary, \$238; Higher Degrees, \$6).....	244 00	
School Examinations.....	197 00	
Diploma Fees.....	410 00	
Gymnastic Fees.....	342 50	
	5,024 50	
COLLEGE GROUNDS MAINTENANCE.....	150 00	
MUSEUM MAINTENANCE.....	70 51	
ANNUAL DONATIONS :—		
Scholarships and Exhibitions.....	401 25	
Medals and Prizes.....	328 09	
	729 34	
SPECIAL DONATIONS :—		
Redpath Museum, Maintenance.....	1,000 00	
Current Expenses.....	1,200 00	
Dom. Govt. for Observatory clock.....	3 0 00	
Chemical Laboratory.....	35 00	
	2,535 00	
INTEREST, &C., FROM INVESTMENTS :—		
Net Returns, including arrears from former years.....	33,194 74	
ELECTION OF FELLOWS.....	383 00	
SUNDRY PETTY RECEIPTS.....	19 63	
	\$47,881 71	
TOTAL ORDINARY RECEIPTS.....		
RECEIPTS—SPECIAL FUNDS :—		
College Grounds (Wire fence).....	18 60	
Chair of Botany.....	750 00	
Ladies' Arts Fees, \$568; Donalds, Interest account, \$2,687.36....	3,255 36	
Philosophical Apparatus.....	50 00	
Molsons' Museum Maintenance.....	39 65	
Leachoil and Campbell Funds—Interest.....	4,093 21	
Special Donation to Museum.....	400 00	
Gale Chair Fund—Interest.....	1,304 84	
Library Committee.....	69 40	
	9,981 06	
INVESTMENT ACCOUNT :—		
Gale Chair, on account.....	2,925 00	
Campbell Memorial Fund, on account.....	2,000 00	
British Association, Gold Medal.....	2,636 47	
Endowment Fund, 1881.....	500 00	
	8,061 47	
Investments repaid during year.....	62,556 01	
SPECIAL SAVINGS BANK BALANCES, 30th June, 1885.....		
LEANCHOIL AND CAMPBELL FUNDS; BANK BALANCE, 30th June, 1885....	13,540 94	
GENERAL FUND; BANK BALANCE, do.....	29,303 96	
	51,647 87	
	\$180,128 12	

(Verified,)

A. H. PLIMSOLL, Auditor.

ROYAL INSTITUTION for the ADVANCEMENT of LEARNING
to 30th June, 1886.

EXPENDITURE.

ADMINISTRATION :—

Salaries (Principal, Secretary and Accountant).....	\$ 3,900 00	
Office expenses.....	231 16	
Porters and Caretakers.....	1,198 50	
		\$ 5,329 66

GENERAL EXPENSES :—

Fuel.....	1,297 18	
Printing, Advertising and Stationery.....	1,606 48	
Charges (Gibson and Mills Annuities, Insurance, &c).....	2,129 67	
College Repairs, \$1,203.31; Grounds, Maintenance, \$245.80.....	1,449 11	
Law Charges, \$114.70; Sundries, \$1.70.....	115 90	
		6,598 34

EDUCATION :—

Faculty of Law.....	1,287 50	
Faculty of Arts.....	19,813 42	
Faculty of Applied Science.....	7,142 76	
Observatory.....	1,935 03	
Diplomas.....	136 69	
Nat. Phil. Class, \$72.46; Chemicals, \$30.76.....	103 22	
Gymnastic Instruction.....	345 00	
School Examinations.....	352 64	
		31,016 26

SCHOLARSHIPS AND EXHIBITIONS.....

1,945 00

MEDALS AND PRIZES.....

525 64

LIBRARY, \$63.78; Maintenance, \$931.53; Books and Binding, \$654.75.

1,650 06

MUSEUM—Maintenance.....

1,519 23

IMPROVEMENTS AND ADDITIONS :—

College Grounds.....	73 95	
Fixture and Furniture.....	395 81	
Chemical Laboratory.....	106 63	
New Engineering Apparatus.....	106 49	
		682 88

ELECTION OF FELLOWS.....

52 00

TOTAL ORDINARY EXPENDITURE.....

\$49,319 07

EXTRAORDINARY EXPENDITURE :—

College Grounds (Wire Fence).....	26 00	
College Buildings (Alterations).....	13,138 05	
Chemical Laboratory (Alterations).....	956 75	
		14,120 80

EXPENDITURE—SPECIAL FUNDS :—

Chair of Botany.....	1,968 75	
Ladies' Arts Classes.....	2,759 00	
Molson's Museum Maintenance.....	540 00	
Leaehoil and Campbell Funds, Interest paid Medical Faculty.....	3,434 04	
Special Donation to Museum.....	757 78	
Library Committee.....	45 00	
Ladies' Class-Room Furniture.....	301 23	
Gale Chair Fund, Interest paid Law Faculty.....	1,272 54	
		11,138 34

INVESTMENT ACCOUNT :—

Invested during year.....	68,189 75	
Medical College.....	20,274 08	
Expended on Properties.....	1,022 06	
		89,485 99

SPECIAL SAVINGS BANK BALANCES on hand 30th June 1886.....

2,531 69

LEANCHOIL AND CAMPBELL FUNDS, BANK BALANCE do.....

5,377 38

GENERAL FUND, do do.....

8,548 85

16,063 92

\$180,128 12

MONTREAL, 16th July, 1886.

W. C. BAYNES, *Bursar.*

SUMMARY OF STATISTICS.

(Session 1886-87).

STUDENTS AND PUPILS.

McGill College.

Students in Faculty of Law	20
“ “ Medicine	228
“ “ Arts (Men)	256
“ “ Arts (Women)	78
“ “ Applied Science	57
	<hr/>
Deduct entries in two faculties	539
	3
	<hr/>
Total McGill College	536

Affiliated Colleges.

Students in Morrin College	25
“ St. Francis College	16
“ McGill Normal School	92
“ Model School	392
	<hr/>
Total	525
	<hr/>
Grand Total	1,061

DEGREES AND DIPLOMAS.

Degrees conferred.

Doctors of Laws	3
Doctors of Medicine	46
Masters of Arts	2
Bachelors of Civil Law	9
Bachelors of Arts	27
Bachelors of Applied Science	9
	<hr/>
Total	96

Normal School Diplomas.

Academy	10
Model School	28
Elementary	34
	<hr/>
Total	72

School Certificates.

Associate in Arts	31
-------------------------	----

SCHOLARSHIPS AND EXHIBITIONS.

Faculty of Arts.

- 8 Exhibitions. value \$100 to \$125.
- 3 Scholarships, value \$120 to \$125.
- 87 Free Tuition Scholarships in the gift of benefactors.
- 23 Free Tuition Scholarships given on competition.

The founders or donors of the 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
THE YEAR 1886.

To the Corporation of McGill University.

GENTLEMEN :—

The Committee for the general management of the Library beg to submit the following as their Fourth Annual Report.

Your Committee are gratified in being able to report continued progress and improvement in the condition and use of the Library. The fact that, with its growth, the advantages it holds forth are more highly appreciated is shown by the memorial, signed by thirty-three Graduates, which prayed that the Library might be opened to them on one evening in the week, at least. This memorial was presented to you, and referred by you to your Committee, with instructions to report thereupon. Your Committee carefully considered the matter and reported, recommending that the request of the Graduates be acceded to, on the following conditions, which the Graduates, on their part, had agreed to :—

1. That the Library be opened on one evening in the week to Graduates of the University and Members of the McGill College Book Club ; *i.e.*, on Thursday evening from 7.30 to 10.30.

2. That admission be free to Graduates and to Members of the McGill College Book Club.

3. That the Graduates' Society will pay a sum sufficient to remunerate the Assistant Librarian for his attendance on the evening in question during the remainder of the present session, the College defraying the expense of heating and lighting.

As this arrangement has been in operation for three weeks only, and that under untoward circumstances, it is too soon to pronounce upon its ultimate success, or otherwise. It is to be hoped that the prompt response made by Corporation to the request of the Graduates will be met by a larger use of the advantages offered by the Library, and an increasing interest in its growth on the part of all to whom this new privilege has been extended.

Your Committee have endeavoured to keep the number of unbound periodicals as low as they could ; and with this object, they obtained from the Board of Governors a grant of \$100, which was expended on binding 135 volumes. At present date, there are about 200 volumes of periodicals which should be sent for binding ; and were the funds at the disposal of the Committee larger for this purpose, there are hundreds of volumes in General Literature, now merely in cloth covers, that well deserve to be bound in proper library style.

Satisfactory progress has been made by the Assistant Librarian in the work of cataloguing, and the whole of the valuable donation of Hon. Judge Mackay is now duly entered. There remain still to be entered 912 volumes, mostly recent additions.

The donations of the year have been large and valuable. Among these is a collection of tracts relating to the American Revolution, which was presented by Mr. Robt. Muir, a former resident of this city, and which supplies a desideratum in the Library in relation to that important period of British history. The collection was made at the suggestion of the late Mr. R. A. Ramsay, who in this, as in so many other ways, manifested his interest in the complete equipment of the Library. Mr. Peter Redpath has augmented his collection by valuable additions of works in History, Antiquities, etc. The Redpath Collection is now so large that more shelf-room is needed for its accommodation and safe-keeping, and your Committee have taken steps to secure the same.

The other principal donors have been—the McGill College Book Club, Hon. Judge Mackay, Principal Sir Wm. Dawson, Prof. Bovey, the McGill Graduates' Society, Dr. Wicksteed, and the various societies, institutions and governments that have been so long our benefactors. To all these, the thanks of the Corporation have been cordially given.

Your Committee are also pleased to have to report that a donation of \$500 has been received from Mrs. Sterry Hunt, for the purchase of books for the Library. It is recommended that the special thanks of Corporation be tendered to Mrs. Hunt for her considerate gift.

From the Conspectus, herewith submitted, it will be noted that a marked increase has taken place in every item reported,

especially in the number of readers, of books read, and of books lent. The total number of volumes is now 25,705, as compared with 25,064, showing an increase of 641 for the year now reported.

Your Committee cannot close this report without grateful reference to the valuable services rendered to the Library by the late Hon. Judge Torrance, a member of this Committee. Himself a lover of books, he took a warm interest in the dissemination and enjoyment by others of the pleasures and benefits to be derived from books ; and in furtherance of this, he was ever ready to render whatever aid he could. He was regular and attentive in the discharge of his duties as a member of this Committee, and none watched the growth of the Library with a keener pleasure than he, or felt more satisfaction in knowing that its advantages were, from year to year being more widely appreciated and enjoyed.

All which is respectfully submitted by your Committee.

GEORGE CORNISH, LL.D.,
Honorary Librarian.

McGILL COLLEGE,
January 25th, 1887.

CONSPICUOUS OF LIBRARY FOR 1886.

<i>Quarters ending.</i>	<i>Readers.</i>	<i>Visitors.</i>	<i>Books read.</i>	<i>Books lent.</i>
April 24, 1886...	1250	1210	798
June 22, " ...	81	43	101	469
Oct. 26, " ...	388	234	661	356
Jan. 24, 1887...	951	35	1077	524
	2670	312	3049	2147
Total number of volumes in Library.....				25,705
Increase for 1886.....				641

REPORT OF PETER REDPATH MUSEUM OF MCGILL
UNIVERSITY, FOR THE YEAR 1886.

The Museum has continued, as heretofore, to afford accommodation for the work of the classes in Geology, Mineralogy, Zoology and Botany, including in all, 186 students, and the number of visitors recorded in the visitors' book has been 1650. In addition to this, classes from schools have often visited the building and examined the collections, and it is proposed, by request of the Committee of the Carnival, to issue tickets through the Committee, to strangers visiting the city on the occasion.

The collections continue to increase by donation, exchange and purchase, and the work of cataloguing and mounting, by Mr. Currie, the Assistant Curator, has been making steady progress. Mr. Bailly has also been employed in mounting skeletons and repairing specimens presented, and the Janitor, Edward Ardley, has done much good work in preparing stands, shelves, &c., and in mounting and cleaning specimens.

Some progress has been made by Dr. Harrington, with the aid of his senior students, in the arrangement of the Miller Collection of Minerals, and Prof. Penhallow has been occupied at intervals with the mounting and arrangement of the valuable collections of economic vegetable productions presented by the Royal Gardens at Kew.

The donations are noticed in detail in the list appended to this Report. Special mention may be made of those already noticed from Kew, and of specimens of the "Challenger" dredgings presented by J. Murray, Esq., of the "Challenger" expedition.

A skeleton of the lesser Rorqual (*Balænoptera rostrata*) has been obtained through the kind agency of Dr. Sutherland, and has been skilfully mounted by Mr. Bailly. It is from a young individual, 16 feet in length, captured in the St. Lawrence, near Montreal, and exhibited for some time in this city. We have also obtained, by the agency of Dr. Harrington, a complete skeleton of the Beluga and another of the common Porpoise. A case is now being prepared to contain these

acquisitions and also the other Cetacean specimens already in the Museum, and we hope when this is ready, to be able to exhibit a more complete collection of our Canadian Cetacea than any heretofore made.

The Principal has placed on exhibition with the Egyptian collection a beautiful bronze model of the obelisk on the Thames embankment, cast by the Messrs. Elkington, and which exhibits the whole of the inscriptions on the four sides. The Committee of the Egypt Exploration Fund has kindly promised us a further collection of specimens from its collections.

Several collections for exchanges have been made up, and sets of specimens of fossils have been sent to specialists for determination.

It has become a question in connection with new and interesting specimens procured and original work done, whether it may not be advisable to publish from time to time bulletins or reports of a scientific character, which might serve to record the new facts obtained and to make the Museum of greater interest to specialists. This was attempted in the Second Report of the Museum but has since been intermitted. It is suggested that some arrangement might be made with the editors of the *Record of Science*, whereby papers might appear in that publication with illustrations furnished by the Museum, and might be reprinted in separate form and with such additions as might be necessary for our use.

Mr. Redpath has continued his gift of \$1,000. Mrs. J. H. R. Molson continues to pay the salary of the Assistant Curator, and we have to acknowledge with thanks an additional donation of \$500 from Mr. J. H. R. Molson for the purchase of specimens.

Orders have been given for four large glass cases; that for Cetaceans already mentioned, two to extend the accommodation in the ante-room for Ethnological and Botanical specimens and one for Economic minerals. The cost of these will somewhat exceed the funds at present available, but it is hoped that by economy they may be paid for in the course of next year, and they will greatly improve the Museum.

Additional microscopes and other apparatus have been procured for the classes in Vegetable Physiology under Prof.

Penhallow ; but as these appliances are properly for educational work in connection with the Faculty of Arts, the Governors have consented to relieve the Museum fund of the cost.

An important and much needed improvement has been made by connecting the water-pipes supplying the heating apparatus with the high-level reservoir. This enables the hot water to circulate thoroughly throughout the building, and has secured adequate warmth in every part of the building even in the exceptionally cold weather of the present winter. The Board of Governors has defrayed the expense of this work.

The use of the Museum rooms was with consent of the Corporation granted to the Young Men's Christian Association of the University for a social meeting, and also to the Principal, that he might entertain the members of the Protestant Association of Teachers on occasion of their meeting in Montreal in October last.

The whole respectfully submitted,

B. J. HARRINGTON, B.A., Ph.D.,
Honorary Curator.

PRINCIPAL DONATIONS TO THE MUSEUM, SINCE DATE
OF LAST REPORT.

- From J. H. R. Molson, Esq.—Collection of Minerals, selected by Dr. Harrington in Europe to supply defects in collection.
- “ Mr. W. A. Carlyle—Collection of Norian Rocks from St. Jerome district.
- “ R. W. Ells, M.A., Ottawa—Specimen of Infusorial Earth from Fountain's Lake, Nova Scotia.
- “ Miss Barnston, Montreal—Collection of Foreign and Native Plants.
- “ Geological Survey of Canada—Specimens of *Buchiceras Cornutum*, Peace River; Model of Meteorite from Macoc, Ont.
- “ T. Drummond, B.A., Sc.—Specimens of Algæ from the Pacific coast.
- “ the Natal Botanic Gardens, through the Agassiz Association, Montreal—Collection of Dried Plants.
- “ Dr. Wolfred Nelson, Panama—Collection of Pottery from Indian graves in Central America; Collection of Orchids from Central America.

- From the Committee of the Egypt Exploration Fund—Collection of Specimens obtained in the recent excavations at San and Naukratis.
- “ Dr. G. Colquhoun, Iroquois, Ont.—Specimen of Rhizoma of Pond Lily.
- “ Mr. J. F. Bailly, Taxidermist, Montreal—Stuffed specimen of Song Sparrow.
- “ Mr. W. A. Oswald, Belle Rivière, P.Q.—Specimen of Natural Graft and Wasp's Nest.
- “ Geological Survey, through Dr. G. M. Dawson, Ottawa—Collection of Woods from British Columbia.
- “ Mr. Fred. Hague, B.C.L., Montreal—Specimen of Fish Hawk from Little Metis.
- “ Dr. Rankine Dawson—Specimens of Fishes and Dried Plants from India.
- “ Mr. R. Rinfret—Indian Hatchet, Portneuf, Que.
- “ Lieut.-Col. Grant, Hamilton, Ont.—Fossils from Niagara Formation, Hamilton.
- “ Rev. M. O'Sullivan, Jamaica—Specimens of Birds, Plants and Minerals from Jamaica.
- “ George A. Drummond, Esq., Montreal—Fifty-four mounted specimens of Canadian Birds.
- “ Mr. W. F. Ferrier, Montreal—Specimens of Stromatopora and Archæopteris; Specimen of Slickenside from Point Levi; Specimens of Beryl and associated Minerals from township of Maisonneuve, Que.; Specimen of Greenockite.
- “ Mr. Charles Robb, Montreal—Specimens of Samarskite and Muscovite from Maisonneuve, Que.
- “ Mr. Charles Gibb, B.A.—Sponge from Bahamas.
- “ the Royal Gardens, Kew, England—Large collection of Economic Vegetable Products, embracing Textile Fibres, Resins, Dyes, Medicinal Products, Woods, etc., chiefly from India.
- “ Hon. F. W. Torrance, Montreal, on behalf of Mr. G. Woodbridge, Ohio—Specimen of White Oak, showing 401 Annual Rings.
- “ John Murray, Esq., F.G.S., England—Selection of Soundings from the “Challenger” Expedition.
- “ J. Armstrong, Esq., Montreal.—Specimen of Snake (“Lance de Fer” or “Rat-tail”), Island of St. Lucia, W.I.
- “ Richard White, Esq., Montreal.—Tamarac Water Pipe from St. Paul Street Aqueduct,—in use for eighty years.

REPORT ON THE MCGILL COLLEGE OBSERVATORY,
FOR THE YEAR ENDING
DECEMBER 31ST, 1886.

To the Corporation of McGill University.

GENTLEMEN,—In presenting my Report for the year now closed, I thought it would be desirable, in connection with the usual brief review of the work of the year, to submit a statement of the instrumental equipment of the observatory.

METEOROLOGICAL WORK.

The Chief Station series of observation, in connection with the Canadian system, has been continued without interruption. The bi-hourly temperature series, commenced in October, 1884, has also been carried forward uninterruptedly. The results of the observations have been published and distributed in the usual way. The principal instruments employed in the work, are the following :—

- 2 Standard mercurial barometers.
- 1 Kew standard thermometer.
- 2 Pastorelli thermometers.
- 1 Maximum and 1 minimum thermometer.
- 1 Set of six self-recording thermometers, with controlling clock, battery, &c.
- 2 Anemometers.
- 1 Wind vane (wind-mill pattern).
- 1 Anemograph, with battery, &c.
- 1 Sunshine recorder.
- 1 Rainband spectroscope.
- 1 Raingauge and several spare thermometers.

The anemometer and vane are on the summit of Mount Royal, at a point about three-quarters of a mile north-west of the Observatory. Their exposure was improved this year by a slight change in position and an increase in altitude. The instruments are now 57 feet above the surface of the ground and 810 feet above sea level.

ASTRONOMICAL WORK.

Time-service.—Observations for the determinations of clock errors were made on 104 nights. The noon time-ball has been dropped, for the benefit of the shipping, and other time-signals distributed throughout the city and country as in former years. The interchanges of clock-signals with the Toronto Observatory have been continued, comparisons having been made on 24 nights. After correcting for known errors and personal equation, the average of the differences obtained between the mean-time clocks of the two observatories was $0^{\text{s}}.17$ and the greatest difference on any one night was $0^{\text{s}}.41$. The arrangements for this interchange of signals, provide that the beats of the clocks are transmitted simultaneously along the line, those of the distant station being received on a relay which is also in the local clock circuit. The relays are in the chronograph circuits and thus—except when the clocks are nearly in coincidence—an accurate measure of the wave transmission time is obtained at each exchange. Arrangements have also recently been made with the Harvard College Observatory for co-operation in further perfecting the time-service. Under the present arrangement—which is a tentative one—the beats of the normal (sidereal) clock in Cambridge are received, at a specified time, each evening if required, and the result of their comparison with our sidereal clock transmitted to the Harvard College Observatory and, if necessary, employed here in the adjustment of our clock errors.

The apparatus employed in connection with the time-service consists of :—

- One 3.25 in. transit, with striding level.
- Two 2 in. transits employed as collimating telescopes.
- One sidereal and one mean-time clock.
- One sidereal and one mean-time chronometer.
- One chronograph, batteries, telegraph lines and sundry minor instruments.

Blackman telescope.—Observations are at present in progress with this instrument, with a view to investigating the law of the personal equation in transit observations. The observers engaged in the work are Professor G. H. Chandler and myself.

Solar photography.—A photoheliograph has recently been purchased. It is equatorially mounted, has a good driving clock and is arranged so that photographs may be taken either in the primary focus or by enlarging lenses which give images of 2 in., 4 in. and 8 in. diameter. A house has been built for its reception and the permanent adjustments have been made. Arrangements for beginning work are not expected to be complete before the early spring, when, it is hoped, we shall be able to undertake the regular work of photographing the sun once on each clear day.

EDUCATIONAL WORK.

Instruction in meteorological observations was given to a class of six undergraduates in Arts, and in Applied Science. Six students in the Civil Engineering department have attended the course in transit observations. The Blackman telescope has been employed in connection with the astronomical classes in the Faculty of Arts.

Respectfully submitted,

C. H. McLEOD,
Superintendent of the Observatory.

MCGILL COLLEGE,
Montreal, Jan. 12th, 1887.