

ROYAL SOCIETY OF CANADA

MONTREAL MEETING, 1891.

HAND=BOOK

FOR THE USE OF MEMBERS AND VISITORS

GIVING THE RULES OF THE SOCIETY, ITS HISTORY,
AND A HISTORICAL SKETCH OF MONTREAL
WITH PLACES OF INTEREST IN
ITS VICINITY.

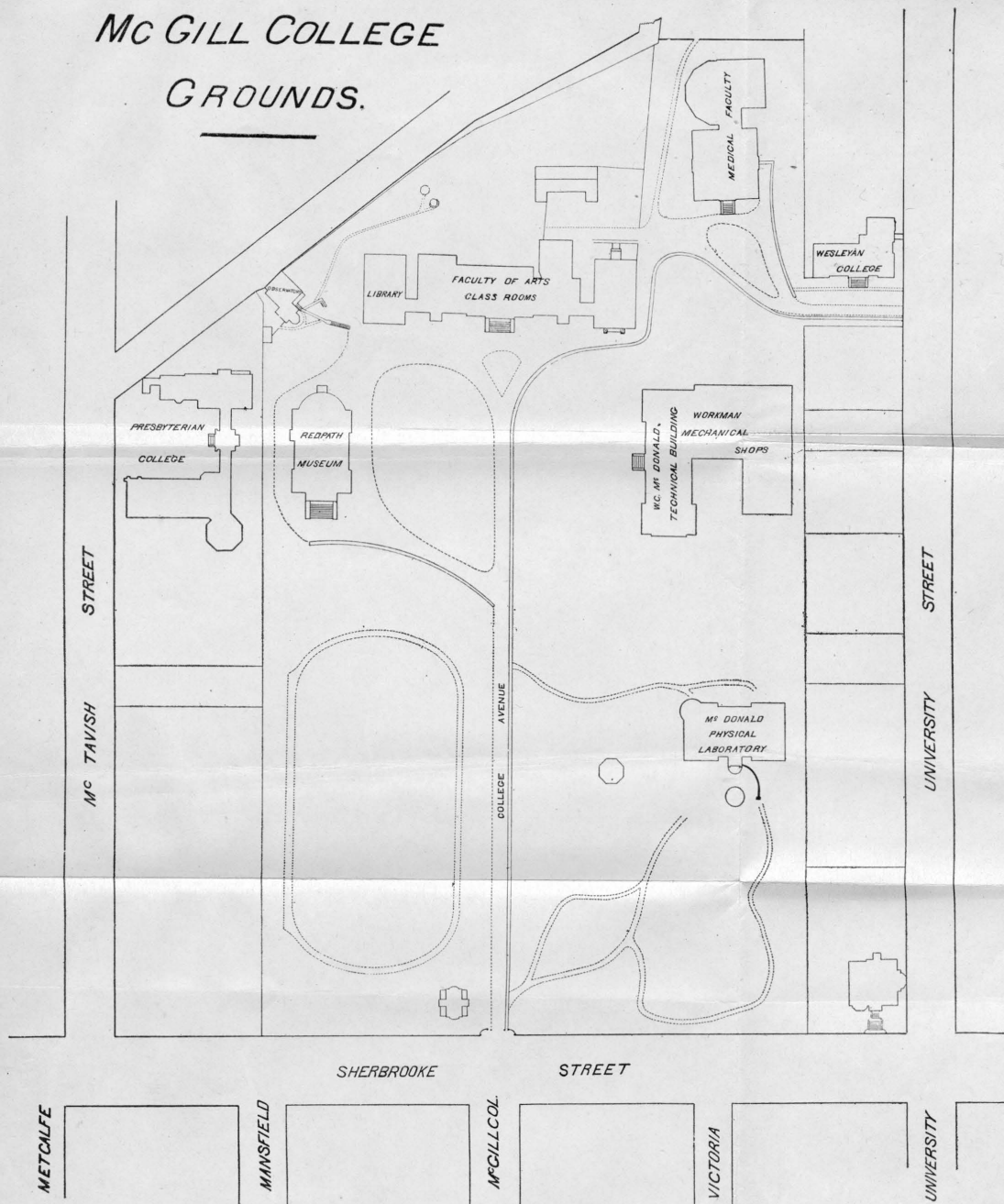
27TH MAY, 1891.

COMPILED BY THE LOCAL COMMITTEE.

MONTREAL :

1891.

Mc GILL COLLEGE GROUNDS.



PREFACE.

The Royal Society of Canada was founded by the Marquis of Lorne in 1882. Hitherto its annual meetings have been held in Ottawa. Last year the Natural History Society of Montreal invited the Society to meet in this city, and the invitation having been accepted, citizens' committees were appointed to make the necessary preparations for the reception and entertainment of the Society. It was thought well that a Manual of the Royal Society, giving the main facts as to its origin, objects and operations, should be compiled and printed, and to this end a sub-committee, consisting of Dr. Bourinot, C.M.G., Hon. Secretary of the Society; Prof. Penhallow, B.Sc., and Mr. John Reade, was constituted at a meeting of the General Committee, in December. The Printing and Publishing Committee also undertook to prepare a historical and descriptive sketch of Montreal, for the benefit of the visitors, the task being entrusted to Mr. R. W. McLachlan. The two-fold result is the present little volume, which, it is hoped, will prove acceptable to those for whom it is intended.

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THE
ROYAL SOCIETY OF CANADA.



THE Royal Society of Canada owes its existence to the thoughtful interest of Lord Lorne in the intellectual progress of Canada. The movement out of which its organization arose was inaugurated in 1881. Already its enlightened founder had established a Canadian Academy of Arts, for the encouragement of design as applied to painting, sculpture, architecture, engraving and the industrial arts, and the promotion and support of art education. The success which had attended the formation and early proceedings of this institution led his Lordship to believe that a national organization which would be to science and literature what the academy was to art would be of real service to the cause of the higher intellectual culture

in the Dominion. After consulting with the leading men of science and letters, both French and English, his Lordship invited the gentlemen whom he had designated as provisional officers of the proposed organization to meet in Montreal. The meeting accordingly took place on the 29th and 30th of December, 1881, and thereat a memorandum from Lord Lorne on the subject was read and considered.

A provisional basis was then agreed upon for the constitution of the new society, the first meeting of which took place at Ottawa on the 25th of May, 1882. The Governor General (Lord Lorne) had invited the members of the provisional council to Government House for the settlement of the procedure, and the arrangements proved entirely satisfactory. The Council consisted of Principal (now Sir) J. W. Dawson, C.M.G., LL.D., F.R.S., President; the Hon. P. J. O. Chauveau, LL.D., Docteur ès Lettres, Vice-President; and the Presidents and Vice-Presidents of sections: J. M. Le Moine, Esq., and Faucher de Saint Maurice, Esq., first section; Dr. (now Sir) Daniel Wilson, F.R.S.E., and Goldwin Smith, Esq., D.C.L., second section; Dr. T. Sterry Hunt, F.R.S., and Charles Carpmael, Esq., third section, and Dr. A. R. C. Selwyn, F.R.S., and Dr. George Lawson, Ph.D., fourth section; J. G. Bourinot, Esq., F.S.S., Honorary Secretary. All these members of Council were present except Dr. Goldwin Smith, then absent in England.

At the general business meeting, held in the railway committee room, Parliament Building, Ottawa, on the morning of the 25th of May, the Honorary Secretary read the Council's report, the recommendations of which were afterwards embodied in the charter and constitution of the Society. The public inauguration of the Society took place in the Senate Chamber, at 4 o'clock in the afternoon. The members of the Society having been formally presented to the noble Founder, His Excellency set forth the aims of the Society, and expressed the hope that its creation would promote the intellectual development of the Dominion in the higher ranges of thought, letters and research. "Imperfections," said his Lordship, "there must necessarily be at first in its constitution—omissions in its membership and organization there may be. Such faults may be hereafter avoided. Our countrymen will recognize that in a body of gentlemen drawn from all our provinces and conspicuous for their ability there will be a centre around which to rally. They will see that the welfare and strength of growth of this association shall be impeded by no small jealousies, no carping spirit of detraction, but shall be nourished by a noble motive common to the citizens of the republic of letters and to the students of the free world of nature, namely, the desire to prove that their land is not insensible to the glory which springs from numbering among its sons those whose success will become the heritage of mankind."

The President, in his address, mentioned some of the reasons which, in his opinion, justified the institution of such a body in Canada. If the idea had been broached in the past, it had been abandoned owing to obvious difficulties. But it had at last presented itself under happier conditions which gave fair hopes of success. It was fitting that the representative of a Sovereign, whose rule had been so favorable to culture and research in the United Kingdom, should show himself the patron of letters and science in the new world. The time, moreover, was auspicious. Political consolidation had been drawing nearer to each other the once scattered and isolated scientific workers of the North American provinces. Such a society would be to them a bond of union and sympathy, and by the interchange of ideas would supply a needed stimulus to men of kindred pursuits. It would, by the publication of its Transactions, be of incalculable benefit to Canadian naturalists, hitherto so largely dependent on foreign aid for placing the results of their labours, in a worthy form, before the world. As a centre of literary and scientific effort, it would, without interfering with the claims of older local societies, be of very real help to them. Comparing Canada with other countries, the President thought it was rather matter for surprise that so many persons amongst us had won distinction in the paths of research and of letters than that there were not more. Finally he spoke of the great

responsibility of the members, and he hoped that by earnest and united effort they would prove themselves deserving of the name to which they aspired. The Vice-President set forth in French, with his customary grace of style, the intellectual progress that Canada had already achieved, dwelling especially on its literary, as Dr. Dawson had dwelt on its scientific aspects. He trusted that the Royal Society would prove a common meeting ground not only for scientific and literary workers, but also for the culture of the two great races whose lot was cast together in this broad Dominion.

The Society then separated into sections. Fifty-six papers, embracing nearly all the departments of research, were either read or presented at the first meeting, and of these thirty-three were published in the Transactions. Referring a year later to the general results of the meeting Sir William Dawson was able to express a high degree of satisfaction at what had so far been accomplished. "We have occasion," he said, "to congratulate ourselves on the reception which our inaugural meeting met with at the hands of the public and the newspaper press. Everywhere the institution of the Society was recognized as wise and beneficial, and if any doubts were expressed with reference to it, they were based not on hostility to the Society, but on a very natural diffidence as to the capacity of Canada, in its present state of development, to sustain a body comparable with the great national

societies of other countries. The amount of original work produced at our first meeting was evidently an agreeable surprise to many ; and while there was some friendly criticism by which we may hope to profit, on the whole our début was regarded with that feeling at once kindly, considerate and patriotic which becomes all true Canadians in witnessing any effort, however feeble, to sustain and exalt the greatness of our country."

Meanwhile the Society had obtained the recognition of the Queen and of the Canadian Parliament. A letter from Lord Kimberley, Secretary of State for the Colonies, dated the 22nd of August, 1882, to the Marquis of Lorne, gave the pleasing information that Her Majesty had graciously permitted the Society to be styled "The Royal Society of Canada." On the 1st of March, 1883, a Bill to incorporate the Society was introduced in the House of Commons by Mr. Tassé. It was read a second time on the 19th of the same month, and on the 6th of April it was considered in committee, read a third time and passed. It received the royal assent on the 25th of May. The following is the

ACT OF INCORPORATION.

(46 VICTORIA, CHAPTER 46.)

Whereas the persons hereinafter mentioned have, by their petition, represented that a Society called, with the sanction of Her Most Gracious Majesty the Queen,

"The Royal Society of Canada," has been founded in Canada by His Excellency the Right Honourable the Marquis of Lorne, Governor-General of Canada; that the said Society has been maintained for some months by the petitioners and others, and that the objects of the said Society are: first, to encourage studies and investigations in literature and science; secondly, to publish Transactions annually or semi-annually, containing the minutes of proceedings at meetings, records of the work performed, original papers and memoirs of merit, and such other documents as may be deemed worthy of publication; thirdly, to offer prizes or other inducements for valuable papers on subjects relating to Canada, and to aid researches already begun, and carried so far as to render their ultimate value probable; fourthly, to assist in the collection of specimens, with a view to the formation of a Canadian museum of archives, ethnology, archæology and natural history; and whereas the said petitioners have prayed that, for the better attainment of the said objects, the Society may be incorporated by Act of the Parliament of Canada, and it is expedient to grant the prayer of the said petition: Therefore, Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. J. W. Dawson, C.M.G., LL.D., F.R.S., President; the Honorable P. J. O. Chauveau, LL.D., Docteur ès

Lettres, Vice-President ; J. M. LeMoine, Esquire, Daniel Wilson, LL.D., F.R.S.E., T. Sterry Hunt, LL.D., F.R.S., A. R. C. Selwyn, LL.D., F.R.S., Presidents of Sections ; Faucher de St. Maurice, Esquire, Charles Carpmael, M.A., George Lawson, Ph.D., LL.D., Vice-Presidents of Sections ; J. G. Bourinot, F.S.S., Honorary Secretary ; J. A. Grant, M.D., F.G.S., Honorary Treasurer ; Goldwin Smith, D.C.L. ; the Reverend Abbé Bégin, D.D. ; the Reverend Abbé Bois, Napoléon Bourrassa, Esquire, the Reverend Abbé Casgrain, Docteur ès Lettres, Paul DeCazes, Esquire, Oscar Dunn, Esquire, the Honourable Hector Fabre, Louis H. Fréchette, LL.D., Napoléon Legendre, Esquire, Pamphile LeMay, Esquire, the Honourable F. G. Marchand, Joseph Marmette, Esquire, the Honourable Mr. Justice Routhier, Docteur ès Lettres, Benjamin Sulte, Esquire, the Reverend Abbé Tanguay, Joseph Tassé, Esquire, the Rev. Abbé Verreau, Docteur ès Lettres, R. Maurice Bucke, M.D., the Reverend Æneas McDonell Dawson, Lieutenant-Colonel G. T. Denison, B.C.L., the Very Reverend G. M. Grant, D.D., William Kirby, Esquire, John Lesperance, Esquire, Charles Lindsey, Esquire, the Reverend W. Lyall, LL.D., George Murray, B.A., the Rev. J. Clark Murray, LL.D., Evan McColl, Esquire, John Reade, Esquire, Charles Sangster, Esquire, George Stewart (the younger), Esquire, Alpheus Todd, C.M.G., LL.D., J. Watson, M.A., LL.D., G. Paxton Young,

M.A., C. Baillargé, C.E., Herbert A. Bayne, Esquire, E. J. Chapman, Ph.D., LL.D., J. B. Cherriman, M.A., E. Deville, C.E., N. F. Dupuis, M.A., F.R.S.E., Sandford Fleming, C.M.G., C.E., P. Fortin, M.D., G. P. Girdwood, M.D., F. N. Gisborne, M. Inst. C.E., E. Haanel, Ph.D., the Very Reverend T. E. Hamel, M.A., B. J. Harrington, B.A., Ph.D., G. C. Hoffman, F.I.C., A. Johnson, LL.D., J. T. Loudon, M.A., T. Macfarlane, M.E., J. G. McGregor, M.A., D.Sc., F.R.S.E., L. W. Bailey, M.A., Ph.D., Robert Bell, M.D., C.E., F.G.S., G. M. Dawson, D. Sc., A.R.S.M., F.G.S., Edwin Gilpin, M.A., F.G.S., J. Bernard Gilpin, M.D., M.R.C.S., the Reverend D. Honeyman, D.C.L., J. M. Jones, F.L.S., the Reverend Professor J. C. K. Laflamme, D.D., J. Macoun, M.A., F.L.S., G. F. Matthew, M.A., Alexander Murray, C.M.G., F.G.S., W. Osler, M.D., W. Saunders, Esquire, D. N. St. Cyr, Esquire, J. F. Whiteaves, F.G.S., and R. Ramsay Wright, M.A., B.Sc., together with such other persons as now or may hereafter become members of the Society, to be hereby incorporated under the provisions of this Act and the by-laws made under the authority thereof, and their successors shall be and are hereby constituted a body politic and corporate, by the name of "The Royal Society of Canada," hereinafter called the Society, and may, by any legal title, acquire, hold and enjoy, for the use of the Society, any property whatever, real or personal, and may alienate, sell and

dispose of the same, or any part thereof, from time to time, and as occasion may require, and other property, real or personal, may acquire instead thereof; Provided always, that the annual value of the real estate held at any one time for the actual use of the Society shall not exceed four thousand dollars.

2. The Society shall not hold any property except as aforesaid, and such as shall be derived from the following sources, that is to say: the life, annual and other subscriptions of members, donations, bequests, or legacies made to the Society, and such other moneys or property as may be acquired by and from the ordinary transactions of the Society, or may now belong to the existing Society, and the moneys arising from fines and forfeitures lawfully imposed by their by-laws: Provided always, that the Society shall sell and convey any real estate acquired by them under the provisions of this section, within ten years after they shall have acquired the same, unless the same be required for the actual use of the Society under the provisions of the next preceding section.

3. The affairs and business of the Society shall be managed by such officers and committees, and under such restrictions, touching the powers and duties of such officers and committees, as by by-law in that behalf the Society may from time to time ordain; and the Society may assign to any of such officers such remuneration as they deem requisite.

4. The Society may make such by-laws, not contrary to law, as they shall deem expedient for the administration and government of the Society, and may repeal, amend or re-enact the same from time to time, observing always, however, such formalities as by such by-laws, or by the by-laws now in force, may be prescribed to that end, and generally shall have all the corporate powers necessary for the purposes of this Act.

5. The present by-laws of the existing Society, not being contrary to law, shall be the by-laws of the Society hereby constituted, until they shall be repealed or altered as aforesaid.

6. Until others shall be elected according to the by-laws of the Society, the present officers of the existing Society shall be those of the Society.

7. All subscriptions and all penalties due to the Society under any by-law may be recovered by suit in the name of the Society ; but any member may withdraw therefrom at any time, on payment of all amounts by him due to the Society, inclusive of his subscription for the year then current, and shall, upon such withdrawal and payment of amounts due, cease to be a member of the Society.

8. No person otherwise competent to be a witness in any suit or prosecution, in which the Society may be engaged, shall be deemed incompetent to be such witness by reason of his being or having been a member or officer of the Society.

9. The Society shall make annual reports to the Governor-General and to both Houses of Parliament, containing a general statement of the affairs of the Society, which said reports shall be presented within the first twenty days of every session of Parliament.

As adopted at the opening meeting, and subsequently modified from time to time, the following are the Regulations of the Society :—

REGULATIONS OF THE ROYAL SOCIETY OF CANADA.

1.—*Objects of the Society.*

The objects of the Society are set forth in the preamble of the Act of Incorporation, as follows : first, to encourage studies and investigations in literature and science ; secondly, to publish Transactions annually or semi-annually, containing the minutes of proceedings at meetings, records of the work performed, original papers and memoirs of merit, and such other documents as may be deemed worthy of publication ; thirdly, to offer

prizes or other inducements for valuable papers on subjects relating to Canada, and to aid researches already begun and carried so far as to render their ultimate value probable, fourthly, to assist in the collection of specimens with a view to the formation of a Canadian museum of archives, ethnology, archæology and natural history.

2.—*Name.*

By the gracious permission of Her Majesty the Queen, the Society will bear the name of the Royal Society of Canada, and the members shall be entitled “Fellows of the Royal Society of Canada.”

3.—*Honorary President and Patron.*

His Excellency the Governor-General shall be the Honorary President and Patron of the Society.

4.—*Division into Sections.*

The Society shall consist of the four following sections :—

1. French Literature, with History, Archæology and allied subjects.
2. English Literature, with History, Archæology and allied subjects.
3. Mathematical, Chemical and Physical Sciences.

4. Geological and Biological Sciences.

The sections may meet separately for the reading and discussion of papers, and for business, at such times and places as may be fixed by the sections under the control of the Council.

5.—*Officers.*

The officers of the Society shall be a President and Vice-President, with an Honorary Secretary and a Treasurer, to be elected by the whole Society, besides a President, Vice-President and Secretary of each section, to be elected by the section. The elections shall be annual.

The Council of the Society shall consist of the officers so elected, and of ex-presidents, during three years from the date of their retirement from the office of president, and of such ex-members of the Council, not exceeding four in number, as may be selected by the Council itself. The ex-members, so elected, shall continue in office for three years, and afterwards until successors are appointed.

6.—*Members.*

The Fellows shall be persons resident in the Dominion of Canada, or in Newfoundland, who have published original works or memoirs of merit, or have rendered eminent services to Literature or to Science.

The number of members in each Section shall be in general limited to twenty, but may be increased if any section should so desire, in the manner hereinafter indicated. Nominations to fill vacancies in any Section may be made at any time in writing by any three members of that section, and the nomination papers shall be lodged with the Honorary Secretary, who shall make a record of them. When the vacancy occurs, the Honorary Secretary shall notify the members of the section in which it has taken place, and transmit to each a printed list of the candidates nominated, together with the reasons in writing for such nomination, at least four months before the annual or any general meeting of the Society. Each member may then place a mark (X) opposite the name of the candidate for whom he votes, and return the voting paper to the Honorary Secretary, who shall report to the Council at a meeting, to be held at least two months before the annual meeting, the number of votes obtained by each candidate. Should any of these have obtained two-thirds of the votes of the whole section, the Council shall so report to the Society. Should this result not be attained, then the Council may select one or more of the candidates obtaining the highest number of votes of the section, and cause the members of the Society to be advised of the names of the candidates so selected, at least one month previous to the date of the annual meeting,

when the election may take place by vote of the members present, or the matter be referred back to the section concerned.

In any year, when no vacancy occurs in the membership of a section, the section shall have power to increase its number by electing one new member from among those who have presented papers at its meetings, which have been subsequently printed in the Transactions of the Society.

The proposal to elect an additional member shall be made by nominations in the usual manner, but each member of the section shall have the opportunity of voting against the election of an additional member absolutely ; and if the majority of votes be against the election of an additional member, then no such member shall be elected for that year. This clause shall cease to operate as soon as the total number in any section shall have reached twenty-five.

7.—*Duties of Members.*

Members shall sign the regulations of the Society, shall be presented by the President to the Society at a general meeting of the same, shall attend its stated meetings, or send reasons of absence to the Honorary Secretary, and shall pay an annual subscription of \$2.00, or the sum of \$20.00 in one payment, in commutation of the same for life membership. These payments shall

entitle members to receive the Transactions of the Society.

Any member may withdraw from the Society, and the Society may, by resolution in general session on the recommendation of the Council, grant to such member the privilege of retaining his title, and his name shall thenceforward be entered on the lists as a retired member retaining title.

Any member failing to attend three years in succession, without presenting a paper, or assigning reasons in writing satisfactory to the Society, shall be considered to have resigned.

8.—*Corresponding Members.*

The Society may elect by ballot on proposal by three members, or on recommendation of the Council, persons not resident in Canada as corresponding members. Such persons must be eminent in Literature or Science, and evidence to that effect must be presented to the Society at the time of their proposal or recommendation. The number of corresponding members shall be limited to sixteen.

That in acting under Rule 8 of the Constitution, four of the corresponding members shall be elected for each Section; and the name or names proposed, the names of the proposers, and the reasons in writing, shall be announced to the Society through the Honorary Sec-

retary, at least one day before the balloting for any such corresponding member. (Resolution of May, 1884.)

9.—*Meetings.*

The Society shall hold an annual meeting in such city of the Dominion as it may determine from time to time. It may at any annual meeting appoint other meetings to be held in the course of the year. The time of holding the annual meeting shall be on a day or days to be determined at the next previous meeting, or, failing this, by the Council. The offices of the Society shall be in the city of Ottawa, and its meetings shall be held in that city, unless otherwise determined.

10.—*Papers.*

The title of any Paper, Memoir or other production, by a member, intended to be read at a meeting of the Society, shall be submitted, together with an abstract of its contents, to the Council, through the Secretary, previous to the meeting at which it is to be read. On its approval, each such communication shall be assigned to the section to which it belongs, and having been therein read and discussed, shall be submitted to a committee of the section, and on report of said committee, may be recommended to the Council for publication, either entire or in abstract, in the Transactions of the Society

Communications by persons not members of the Society may be submitted by members on the same conditions as their own productions.

11.—*Associated Societies.*

Every scientific or literary society in the Dominion, which may be selected by vote of the Society, shall be invited by circular of the Honorary Secretary, to elect annually one of its members as a delegate to the meetings of the Society, such delegate to have, during his term of office, the privilege of taking part in all general or sectional meetings for the reading and discussion of papers, and to be empowered to communicate a short statement of original work done and papers published during the year by his Society, and to report on any matters in which the Royal Society may usefully aid in publication or otherwise.

12.—*Circulation of Transactions.*

Copies of the Transactions of the Society shall be sent to the following :—

All members who have paid their subscriptions.

All Associated Societies.

Such foreign Societies as may be selected by the Council.

The Lieutenant-Governors of the Provinces of the Dominion and Newfoundland.

The members of the Privy Council of Canada.

The Chief Justice and Judges of the Supreme Court of Canada.

The Speakers of the Senate and House of Commons.

The Chief Justice of each Province.

The Premier of each Province.

The Speakers of the Legislatures of each Province.

The Minister or Superintendent of Education in each Province.

The Universities, the Library of Parliament and the Libraries of Provincial Legislatures.

13.—*Duties of Council.*

The Council shall manage all the affairs of the Society in the intervals of its meetings, and shall make arrangements for the meetings. It shall meet at the call of the President. Three members shall be a quorum.

The Council shall report its proceedings at each meeting of the Society for sanction.

The Council shall have the custody and disposal of all moneys, collections and other property of the Society, subject to sanction of its proceedings as above.

In the absence of the President and Vice-President, the Council may appoint a temporary chairman, and in the case of vacancy of the office of Honorary Secretary

or Treasurer may appoint a temporary Secretary or Treasurer to hold office till the next meeting of the Society.

14.—*Duties of the Honorary Secretary.*

The Honorary Secretary shall keep the minutes of the Society and Council, and shall conduct their correspondence, shall receive and attend to all nominations for members and officers of sections, shall keep the lists and records of the Society, and, under advice of the President, shall attend to any business that may arise in the intervals of meetings. He may, with consent of the Council, delegate any part of his duties to a paid assistant appointed by the Council.

15.—*Duties of the Treasurer.*

The Treasurer shall have the custody of all moneys of the Society, shall keep account of the same, and submit these to the Council at its meetings, and shall receive subscriptions, grants and donations, and make disbursements as shall be ordered by the Council.

16.—*Addresses and Special Reports.*

It shall be the duty of the President, or, in event of his being unable to do so, of the Vice-President, to prepare an address for each annual meeting.

It shall be the duty of the President of each section, or, in event of his being unable to do so, of the Vice-

President, to prepare an address, having reference to the special objects of the section, for each annual meeting.

The Society in general session, or any of the sections, with consent of the Society, may appoint committees to prepare reports on any special literary or scientific matters, or on the progress of literature and science, or on works published in Canada, and to suggest such honorary notice as may seem desirable in the case of meritorious works or researches.

The ordinary committee of the section shall be limited to three in number, and consist of the officers of the section, or any members that the section may select to make up the number.

17.—*Reading of Papers.*

I.—The representatives of each section in the Council shall be the judges of the papers to be accepted or rejected. No paper shall be read in any section, at any general meeting of the Society, unless it has been presented, either in full or in abstract, at least three weeks before the first day of the meeting, and formally accepted by the Council, in accordance with Rule X of the Society, except by special permission of the Council. The publication of any paper not so accepted, as having been read before or presented to it, may be disavowed by the Society.

II.—No paper already published shall be accepted by the Society, except in cases where it shall have been entirely recast.

III.—A programme containing the titles of papers to be read shall be printed, and sent to the members of the Society at least one week before the time of meeting.

IV.—It shall be the duty of the Secretaries of each section to prepare before each day's meeting a list of the papers to be presented to each section, with the names of the authors and the time demanded for their reading. These lists shall be printed and made public each morning before the time fixed for the meeting.

18.—*Publication of Papers.*

I.—The author shall revise his MS. after reading, to prepare it for the press.

II.—The first proof in galley shall be sent to the author, and also a revise in galley.

III.—The matter shall then be put into page, and a proof sent to the Secretary of the section to which it belongs, who will sign the proof when he has corrected it. Should the author demand it, he may see a proof in page.

IV.—The chairman of the Printing Committee or his deputy will sign the final revise, and will see that conformity in headings and in type is observed.

V.—If the authors of papers are to be absent in places not accessible without delay, they shall indicate some person by whom the proofs shall be read; failing which, the Secretary of the section shall be responsible for their reading and correction.

VI.—If, from the absence of the author, the proof of a paper cannot be read by him, and he has named no representative, and if the Secretary will not read it, the Printing Committee shall not delay the volume for the author's return, but shall omit the paper.

VII.—All matter in the French language shall be read for literal errors by a French proof-reader skilled in the typographic art, and familiar with the present usage in France.

Rule 11, regarding the affiliation of local literary and scientific societies throughout the Dominion, has proved most fruitful in concentrating and developing the intellectual efforts of all the provinces of the Dominion. In 1883, twelve societies responded to the Hon. Secretary's invitation by sending delegates. This number has increased from year to year, until now there are altogether twenty-four literary, scientific, philosophical, and historical societies represented in the Transactions. The full reports of their proceedings submitted by these organizations of kindred aim are extremely valuable, as indicating the work that Canada is doing in the various fields of scientific research, historical investigation and

literary creation or criticism. Some of the delegates have contributed records covering the whole period of their Society's existence—records of undoubted interest and value to the future historian of our intellectual progress. The following is a list, in the order of their seniority, of these

AFFILIATED SOCIETIES.

Literary and Historical Society of Quebec	1824
Natural History Society of Montreal.....	1827
(Incorporated, 1832.)	
Institut Canadien, Quebec	1846
Canadian Institute, Toronto.....	1851
Institut Canadien, Ottawa.....	1852
Hamilton Association, Hamilton.....	1856
Société Historique, Montreal.....	1858
Nova Scotia Inst. Natural Science.	1862
Natural History Society, New Brunswick.....	1862
Numismatic and Antiquarian Society, Montreal.	1862
Entomological Society of Ontario.....	1863
Ottawa Literary and Scientific Society.....	1869
Murchison Scientific Society, Belleville	1873
Nova Scotia Historical Society.....	1878
Ottawa Field and Naturalists' Club.....	1879
Geographical Society of Quebec.....	1879
Historical and Scientific Society of Manitoba.....	1879
Society for Historical Studies, Montreal.....	1885

Cercle Littéraire Français, Montreal.....	1885
Cercle A. B. C. (Philosophical), Ottawa.....	1886
Canadian Society of Civil Engineers.....	1888
Wentworth Historical Society, Hamilton.....	1888
Society of Canadian Literature.....	1889
Natural History Society of British Columbia, Victoria.....	1889

Every one of these societies has its special place in the advance guard of Canadian enlightenment. Some of the older historical societies, especially those of Halifax, of Quebec, of Toronto, and of Montreal, have published valuable documents, and have materially contributed to the promotion of historical enquiry and the preservation of the provincial and national archives. The younger societies, led by that of Winnipeg, have used their time to like good advantage. The writings of Prof. Bryce, of Mr. C. N. Bell, of Mr. Gerald E. Hart, of Mr. W. D. Lighthall, of Mrs. S. A. Curzon, of Mr. W. J. White, of Mr. Ernest Cruikshank and others, have added to the store of knowledge already amassed by the Faribaults, Murdochs, Scaddings, Le Moines, Vigers, Croftons, Stewarts, Archibalds, Hannays, Verreaus and Babys of the older organizations. In all the branches of science, admirable work has been done by these local societies, and several of them have, through a common membership, enriched the Transactions of the Royal

Society. Their membership includes representatives of every branch of science from pure mathematics to the latest application of electricity ; astronomy and meteorology ; physics, mechanics, engineering ; geology and mineralogy, chemistry and microscopy, biology in all its departments, botany, zoology, ichthyology, ornithology, entomology, medicine in its various significance, including hygiene ; economics, sociology, and that borderland of research where science and literature meet on equal terms.

Though the work of the sections can hardly be said to have been fairly divided, some members contributing much more than others, while of a certain number the names have been conspicuous by their absence from the yearly programmes ; it may, on the whole, be said that the promise of the opening session has been fulfilled in the successive meetings of the last eight years. In their chosen branches of study and research, all the four sections have added not a little to the sum of the world's knowledge, and if this total be enlarged by the aggregate of work done by the affiliated societies, the whole makes an intellectual product of which the Dominion has no reason to be ashamed.

The points most criticized in the constitution of the Society were the combination of science and literature and its bi-lingual character. As to the former, the first president took occasion, in the address already quoted

from, to show that, instead of being a drawback, it was an advantage. After indicating the close relations between the two departments of intellectual effort, he thus expressed his satisfaction at the Society's comprehensiveness :—" For these reasons I rejoice that our Society embraces both science and letters, and I am profoundly convinced that it is for the highest interest of Canada that her scientific men shall be men of culture, and that her literary men shall be thoroughly imbued with scientific knowledge and scientific habits of thought." In a paper read before the Society on the relation of such bodies to the State, the late Dr. Todd showed that New South Wales had anticipated Canada by forming a Royal Society on the like broad basis, its avowed object being " the encouragement of studies and investigations in science, art, literature and philosophy." Lord Lansdowne also expressed his satisfaction at its two-fold division, which, he said, greatly enhanced the interest and value of the Transactions.

As to the other point which was the subject of discussion—the union of French and English speaking members, so far from proving an obstacle to the Society's usefulness, has been one of its most fruitful features. The French and English sections have, by their harmony and goodwill, set an example which the whole Dominion might follow with advantage. Differences of race and creed have been revealed only by mutual courtesy and

willing co-operation in the grand aims of the Society. From the rule of kindness and deference there has been, from the opening of the first to the closing of the last meeting, no instance of departure. It is also noteworthy that the Society has been the means of renewing relations between the two branches of the French race in the new world—that of Canada and Acadia, and that of Louisiana—the *Athénée Louisianais*, of New Orleans, being one of the first of foreign organizations to respond to the invitation of the Honorary Secretary. In the list of corresponding members, moreover, eminent sons of the French race have their places along with distinguished Anglo-Saxons of both hemispheres. Had the Society effected nothing else than these exchanges of cordial sympathy it would not have lived altogether in vain.

The letters from eminent foreign societies which greeted the entrance of Canada into their exalted sisterhood were most gratifying. M. Camille Doucet, perpetual secretary of the French Academy, in acknowledging the Hon. Secretary's invitation to the Institute of France to send a delegate to the meeting at Ottawa, said that Dr. Bourinot's letter had been received with the most cordial sympathy by each of the five Academies that constitute that great centre of universal learning.*

*A private letter addressed by Mr. Doucet to the late Hon. Mr. Chauveau, which was cited by Mr. Tassé in his admirable speech in moving the second reading of the Incorporation Act, is so pertinent as evidence of the sentiments which the formation of the

M. Xavier Marmier, an old and much prized friend of Canada, would gladly have responded to the call, had not an untimely illness stood in the way. The Belgian Academy, through its Secretary, Mr. Liagre; the British Association, through Professor T. G. Bonney, whom Montrealers have not forgotten; the National Academy of Sciences, of Washington, through Mr. A. Hall; the New York Academy of Sciences, through Dr. Albert Leeds; the American Academy of Arts and Sciences, through Mr. Josiah P. Cooke; the Association Française

new Society awakened in Canada's ancient motherland that it is a pity not to reproduce it. "I am in receipt," writes Mr. Camille Doucet, "with the letter which you did me the honour of writing to me on the 3rd of this month, of the report which it contains of the inaugural meeting of the Royal Society of Canada, and I hastened to lay it in its entirety before the Academy at its last assembly. In organizing, as you say, in imitation of our French Institute and of the Royal Society of England, the Canadian Academy has given to friendly nations a testimony of goodwill and affectionate esteem. The Academy thanks you for having informed it of your organization, and for having done so with so much cordiality, and in language so elevated, so pure, so French. The old Academy of France delights to extend the right hand of fellowship to the newborn Royal Society of Canada, and wishing that it may, after three hundred years of existence, be as flourishing as its elder sister has the happiness to be to-day. The addresses delivered at the second session have been greatly appreciated by my fellow members, who all applauded their eloquence. Particularly impressed with the sympathy which your illustrious patron desires to show for France, the Academy wishes you to convey to His Excellency the expression of its respectful gratitude."

pour l'avancement des Sciences, through Mr. Dubuisson ; the New Orleans *Athénée Louisianais* (already mentioned), through Mr. A. Mercier—these and others of the world's centres of science and learning sent heartiest greetings.

The circulation of the Transactions has done much to make Canada better known at the chief seats of enlightenment in the Old World. "Not a week passes," says the report of the Council for 1887, "without some evidence being furnished of the attention that the papers are receiving in cultivated circles abroad, and requests for the volumes are constantly at hand from various centres of intelligence to which they have not hitherto been sent. Only a fortnight ago, for instance, the Hon. Secretary received some very interesting volumes from the Imperial University of Japan, at Tokio, with an expression of the wish that the Transactions should be regularly sent to that institution." More than six hundred copies are thus distributed every year, and that they do not lie unread on dusty shelves is shown by the best of evidence—the extent to which they are quoted in works dealing with the themes of which they treat.

Apart from its relations to the centres of learning and research in other lands, and its attractive potency on the scattered circles of local intellectual effort in the Dominion, the Royal Society can play a not unimportant rôle in connection with the State. This phase of its usefulness

(which has hardly yet, perhaps, been allotted due significance) was very clearly illustrated in a paper read by the late Dr. Alpheus Todd, C.M.G., before the Society not long before his death. Citing the example of New South Wales, which was the first of the British colonies to establish a Royal Society, he commended the statesmen of that great country for availing themselves of the co-operation of learned and capable advisers to advance the public welfare in matters that lay distinctly apart from the domain of party politics. In so doing, however, they were simply following the precedent of the motherland, which had long assigned to the Royal Society of London certain duties of a scientific nature which it was peculiarly qualified to discharge. The application of the same principle in Canada was a logical sequel of the formation of such a body. The same subject was very appositely though indirectly treated by the first president in his second address (1883), wherein he outlined the progress already achieved mainly through the Geological and Natural History Survey and the provisions for science teaching in the Universities. A perceptible stimulus was given to the scientific movement in Canada, both in its practical and scientific aspect, by the departure of the British Association from its narrower early traditions in consenting to hold a meeting in Montreal. In that meeting (1884) members of Canada's Royal Society took an active part, and among the sub-

jects which they chose for their papers there were several which had a distinct relation to the State—such as those on Standard Time, on Tidal Observations in Canadian Waters, on our Mineral Resources, on various branches and details of economic science, and on questions pertaining to our native races.

But, in reality, it is not occasionally but always that the Royal Society is, in sympathy, aspiration and the sphere of its labours, in close relation to the State and the needs of the country at large. Such relation arises necessarily from the fact that the membership of the Scientific sections is so largely composed of officers of the scientific departments of the Government. The head of the Geological Survey and the principal members of his staff, the Surveyor-General, the director of the Experimental Farms, the chief Analyst, the head of the Meteorological Service, the director of State Telegraphs, the Government Entomologist, more than one *emeritus* official of high standing, and several members of corresponding services in the provinces—these, with representatives of the universities occasionally employed in public functions, form a sort of State Council on the whole range of important questions in which scientific knowledge and experience are essential to the general welfare. An examination of the contents of the Transactions for any and every year will, in fine, furnish convincing proof of the alliance between the Royal Society and the

State, and of the benefits which the former renders to the latter.

Nor is it the scientific sections alone that stand in this beneficial relation to the State. In seconding Mr. Tassé's motion for the second reading of the Act of Incorporation, Mr. Ross, of Middlesex (the present able Minister of Education for Ontario), pointed out very clearly the services which such a Society might render in the field of historical research. He reminded his hearers of the passages in our annals that were still shadowed by obscurity—such as the great struggle of 1812 and the boundary treaties that left behind them such deplorable confusion. Nor did he withhold his sympathy from the attempt to encourage Canadian literature, and to make it, as far as possible, characteristic of the life, the thought and the aspirations of the people.

“As I have the honour,” said Mr. Tassé, in discussing this same feature of the Society's allotted task, “of sitting beside three gentlemen who bear the poetic names of Homer, Shakespeare and Burns, it will suffice for me to remark that the three great poets from whom, I hope, these gentlemen are lineally descended have done more to immortalize Greece, England and Scotland than the most eminent statesmen and distinguished warriors. And in so far as the Royal Society devotes itself to the cultivation of what is highest in thought and sentiment, to the study of the beautiful and the pursuit of the

true, its mission is a noble and enlightened one, which merits the support of all patriotic Canadians."

Since its formation in 1882, the membership of the Society has been considerably modified. The original composition of the Council has been already mentioned. The following tabulated statement shows at a glance the changes that it has undergone from year to year to the present :—

OFFICERS OF THE ROYAL SOCIETY OF CANADA, 1882-1891.

1882-83.

1883-84.

1884-85.

Hon. President and Patron

The Marquis of Lorne

The Marquis of Lorne

Marquis of Lansdowne

President..... Sir J. W. Dawson, C.M.G., F.R.S.

Dr. T. S. Hunt

Vice-President ... Hon. P. J. O. Chauveau, LL.D.

Dr. T. S. Hunt

Sir D. Wilson

Section I.

President..... J. M. LeMoine

Dr. L. Fréchette

Hon. F. G. Marchand

Vice-President. . . Faucher de Saint-Maurice

Hon. F. G. Marchand

Paul DeCazes

Secretary..... Benjamin Sulte

B. Sulte

B. Sulte

Section II.

President..... Sir D. Wilson, LL.D., F.R.S.E.

Sir D. Wilson

Rev. Dr. J. C. Murray

Vice-President. . . Goldwin Smith, D.C.L.

Rev. Dr. J. Clark Murray

Lt.-Col. G. T. Denison

Secretary..... George Stewart, jr.

G. Stewart

G. Stewart

Section III.

President..... T. Sterry Hunt, LL.D., F.R.S.

J. B. Cherriman

Dr. A. Johnson

Vice-President. . . Chas. Carmichael, M.A., F.R.A.S.

Thos. Macfarlane

Chas. Carmichael

Secretary..... J. B. Cherriman, M.A.

Dr. A. Johnson

Dr. J. G. McGregor

Section IV.

President..... A. R. C. Selwyn, LL.D., F.R.S.

Dr. Selwyn

Dr. Selwyn

Vice-President.... George Lawson, Ph.D., LL.D.

Dr. Lawson

Secretary..... J. F. Whiteaves, F.G.S.

J. F. Whiteaves

J. F. Whiteaves

Hon. Secretary..... J. G. Bourinot, C.M.G., LL.D., DCL.

Dr. Bourinot

Dr. Bourinot

Hon. Treasurer... Sir J. A. Grant, F.G.S., K.C.M.G.

Sir James A. Grant

Sir James A. Grant

1885-86.		1886-87		1887-88	
Marquis of Lansdowne		Marquis of Lansdowne		Marquis of Lansdowne	
Hon. President and Patron	Sir D. Wilson	Monsignor Hamel	Dr. G. Lawson	Dr. G. Lawson	S. Fleming, C.M.G.
Vice-President ...	Mgr. Hamel	Dr. G. Lawson			
Section I.					
President	B. Sulte	Paul De Cazes		Faucher de St. Maurice	
Vice-President	P. De Cazes	P. LeMay		P. LeMay	
Secretary	A. Lusignan	A. Lusignan		A. Lusignan	
Section II.					
President.....	Lt.-Col. Denison	Dr. Bucke		Very Rev. Dr. G. M. Grant	
Vice-President ...	R. M. Bucke, M.D.	W. Kirby		John Reade	
Secretary.....	G. Stewart	Dr. G. Stewart		Dr. G. Stewart	
Section III.					
President.....	C. Carpmael	T. Macfarlane		Dr. T. S. Hunt	
Vice-President.....	T. Macfarlane	S. Fleming, C.M.G.		E. Deville	
Secretary	G. C. Hoffmann	G. C. Hoffmann		G. C. Hoffmann	
Section IV.					
President	Sir J. W. Dawson	Abbé Lafamme		Dr. R. Bell	
Vice-President.....	Abbé Lafamme	Dr. R. Bell		Dr. L. W. Bailey	
Secretary.....	J. F. Whiteaves	J. F. Whiteaves		J. F. Whiteaves	
Hon. Secretary.....	Dr. Bourinot	Dr. Bourinot		Dr. Bourinot	
Hon. Treasurer	Sir J. A. Grant	Sir J. A. Grant		Sir J. A. Grant	

1888-89.		1889-90.		1890-91.	
Hon. President and Patron	Marquis of Lansdowne	Lord Stanley of Preston	Lord Stanley of Preston	Very Rev. Dr. G. M. Grant	Very Rev. Dr. G. M. Grant
President	Dr. S. Fleming, C.M.G.	Abbé Casgrain	Abbé Casgrain	Very Rev. Dr. G. M. Grant	Very Rev. Dr. G. M. Grant
Vice-President	Abbé Casgrain	Very Rev. Dr. G. M. Grant	Very Rev. Dr. G. M. Grant	Abbé Lafamme	Abbé Lafamme
Section I.					
President	P. LeMay	Joseph Marmette	Joseph Marmette	N. Legendre	N. Legendre
Vice-President	Abbé Verreau	A. Lusignan	A. Lusignan	Monsignor Tanguay	Monsignor Tanguay
Secretary	A. Lusignan			A. D. DeCelles	A. D. DeCelles
Section II.					
President	John Reade	Dr. John Watson	Dr. John Watson	Dr. G. Stewart	Dr. G. Stewart
Vice-President	Dr. John Watson	Dr. G. Stewart	Dr. G. Stewart	Rev. Dr. G. Patterson	Rev. Dr. G. Patterson
Secretary	Dr. G. Stewart	Rev. Dr. J. Clark Murray	Rev. Dr. J. Clark Murray	Rev. Dr. J. C. Murray	Rev. Dr. J. C. Murray
Section III.					
President	E. Deville	Dr. S. Fleming	Dr. S. Fleming	Monsignor Hamel	Monsignor Hamel
Vice-President	S. Fleming	Monsignor Hamel	Monsignor Hamel	Dr. J. G. McGregor	Dr. J. G. McGregor
Secretary	G. C. Hoffmann	G. C. Hoffmann	G. C. Hoffmann	G. C. Hoffmann	G. C. Hoffmann
Section IV.					
President	Dr. L. W. Bailey	Dr. G. M. Dawson	Dr. G. M. Dawson	W. Saunders	W. Saunders
Vice-President	Dr. G. M. Dawson	W. Saunders	W. Saunders	G. F. Matthew	G. F. Matthew
Secretary	J. F. Whiteaves	J. F. Whiteaves	J. F. Whiteaves	J. F. Whiteaves	J. F. Whiteaves
Hon. Secretary		Dr. Bourinot, C.M.G.	Dr. Bourinot, C.M.G.	Dr. Bourinot, C.M.G.	Dr. Bourinot, C.M.G.
Hon. Treasurer		Sir J. A. Grant	Dr. Selwyn, C.M.G.	Dr. Selwyn, C.M.G.	Dr. Selwyn, C.M.G.

The membership of the sections was thus composed in 1882 :—

Section I.—French Literature, History, Archæology and kindred subjects.—The Rev. Abbé Begin, D.D., Laval University, Quebec ; The Rev. Abbé Bois, Maskinongé, P.Q. ; Napoléon Bourassa, Esq., Montreal ; the Rev. Abbé H. R. Casgrain, Rivière Ouelle, P.Q. ; the Hon. P. J. O. Chauveau, LL.D., etc., Montreal ; Paul De Cazes, Esq., Quebec ; Oscar Dunn, Esq., Quebec ; the Hon. Hector Fabre, Paris ; N. Faucher de Saint Maurice, Esq., Quebec ; Louis Fréchette, Esq., Lauréat de l'Académie Française, Montreal ; Napoléon Legendre, Esq., Quebec ; Pamphile LeMay, Esq., Quebec ; J. M. LeMoine, Esq., Spencer Grange, Quebec ; the Hon. F. G. Marchand, St. Johns, P.Q. ; Joseph Marmette, Esq., Quebec ; the Hon. Judge Routhier, Quebec ; B. Sulte, Esq., Ottawa ; the Rev. Cyprien Tanguay, Ottawa ; Joseph Tassé, Esq., Ottawa ; the Rev. Abbé H. Verreau, Montreal.

Section II.—English Literature, History, Archæology and kindred subjects.—John George Bourinot, Esq., F.S.S., Ottawa ; Dr. R. M. Bucke, London, Ont. ; Rev. Æneas Macdonell Dawson, Ottawa ; Lieut.-Col. G. T. Denison, Toronto ; the Very Rev. G. M. Grant, D.D., Principal of Queen's College, Kingston ; William Kirby, Esq., Niagara, Ont. ; John Talon Lespérance, Esq., Montreal ; Charles Lindsey, Esq., Toronto ; the Rev.

W. Lyall, LL.D., Dalhousie College, Halifax ; George Murray, Esq., Montreal ; the Rev. J. Clark Murray, McGill College, Montreal ; Evan McColl, Esq., Kingston, Ont. ; John Reade, Esq., Montreal ; Charles Sangster, Esq., Ottawa ; Dr. Goldwin Smith, Toronto ; George Stewart, jr., Esq., Quebec ; Alpheus Todd, Esq., C.M.G., Ottawa ; Dr. J. Watson, Queen's College, Kingston, Ont. ; Dr. Daniel Wilson, President of the University of Toronto ; Dr. G. Paxton Young, M.A., University College, Toronto.

Section III.—Mathematical, Physical and Chemical Sciences.—C. Baillargé, Esq., C.E., Quebec ; Herbert A. Bayne, Esq., Royal Military College, Kingston, Ont. ; C. H. Carpmael, Esq., Superintendent Meteorological Service, Toronto ; Prof. E. J. Chapman, University College, Toronto ; Prof. J. B. Cherriman, Superintendent of Insurance, Ottawa ; E. Deville, Esq., Chief Inspector of Surveys, Ottawa ; N. F. Dupuis, Esq., F.R.S.E., Queen's College, Kingston, Ont. ; Sanford Fleming, Esq., C.E., C.M.G., Ottawa ; Dr. P. Fortin, M.P., Montreal ; Dr. G. P. Girdwood, McGill College, Montreal ; F. W. Gisborne, Esq., C.E., M.I.T.E.E., Ottawa ; Prof. E. Haanel, Victoria College, Cobourg ; B. J. Harrington, Esq., Ph.D., McGill College, Montreal ; G. C. Hoffmann, Esq., F. Inst. Chem., Geological Survey, Ottawa ; T. Sterry Hunt, Esq., LL.D., Cantab., F.R.S., Montreal ; A. Johnson, LL.D. (Dublin), McGill College,

Montreal; J. T. Loudon, Esq., University College, Toronto; T. Macfarlane, M. Eng., Actonvale, P.Q.; J. G. McGregor, D.Sc., F.R.S.E., Dalhousie College, Halifax.

Section IV.—Geological and Biological Sciences.—I. W. Bailey, Esq., Ph.D., University of New Brunswick, Fredericton, N.B.; George Barnston, Esq., Montreal; Dr. Robert Bell, C.E., F.G.S., Assist. Director Geological Survey, Ottawa; Dr. G. M. Dawson, D.Sc., F.G.S., A.R.S.M., Assist. Director Geological Survey, Ottawa; Dr. J. W. Dawson, C.M.G., F.R.S., Principal McGill University, Montreal; Edwin Gilpin, Esq., F.G.S., Inspector of Mines, Halifax; J. Bernard Gilpin, Esq., M.D., Halifax; Dr. J. A. Grant, F.G.S., Ottawa; the Rev. Dr. Honeyman, Museum, Halifax; J. M. Jones, Esq., F.L.S., Halifax; the Rev. Prof. Laflamme, Laval University, Quebec; Prof. G. Lawson, LL.D., Dalhousie College, Halifax; J. Macoun, Esq., F.L.S., Albert University, Belleville; Alex. Murray, Esq., C.M.G., F.G.S., Director of the Geological Survey of Newfoundland; Dr. William Osler, McGill College, Montreal; W. Saunders, Esq., London, Ont.; Dr. A. R. C. Selwyn, LL.D., F.R.S., F.G.S., Director of the Geological Survey of Canada, Ottawa; D. N. St. Cyr, Esq., Quebec; J. F. Whiteaves, Esq., F.G.S., Geological Survey, Ottawa; Prof. R. Ramsay Wright, M.A., B.Sc., University College, Toronto.

Twelve members of the Society have been removed by death :—Mr. George Barnston, Dr. Todd, Mr. Murray, C.M.G., Director of the Geological Survey of Newfoundland, and for years Sir William Logan's assistant ; Rev. Dr. Honeyman, of Halifax ; Mr. J. C. Dent, the historian ; Dr. Fortin, M.P. ; Mr. Herbert A. Bayne, of the Royal Military College, Kingston ; Mr. Oscar Dunn, Prof. George Paxton Young, Toronto ; the Abbé Bois, the Hon. P. J. O. Chauveau, and John Lesperance. Others have, for various reasons, withdrawn from the Society, and others have left the country. The actual membership is as follows :—

THE ROYAL SOCIETY OF CANADA.

LIST OF MEMBERS 1890-91.

I.—FRENCH LITERATURE, HISTORY, ARCHÆOLOGY, ETC.

Bégin, S. G. Mgr. L. N., Bishop of *Chicoutimi*.

Casgrain, l'Abbé H. R., LL.D., *Quebec*.

Cuoq, l'Abbé, *Montreal*.

David L. O., *Montreal*.

DeCazes, Paul, *Quebec*.

DeCelles, A. D., *Ottawa*.

Fabre, Hector, *Paris. France*.

Faucher de Saint-Maurice, N., *Quebec*.

Fréchette, Louis, LL.D., *Montreal*.

Legendre, Napoléon, *Quebec*.
 LeMay, Pamphile, *Quebec*.
 LeMoine, J. M., *Quebec*.
 Lusignan, A., *Ottawa*.
 Marchand, Hon. F. G., *St. Johns, P.Q.*
 Marmette, Joseph, *Ottawa*.
 Routhier, A. B., LL.D., *Quebec*.
 Sulte, Benjamin, *Ottawa*.
 Tanguay, Mgr. Cyprien, L.D., *Ottawa*.
 Tassé, Joseph, *Montreal*.
 Verrcau, l'Abbé Hospice, LL.D., *Montreal*.

II.—ENGLISH LITERATURE, HISTORY, ARCHÆOLOGY, ETC.

Bourinot, John George, C.M.G., LL.D., D.C.L., *Ottawa*.
 Bucke, R. Maurice, M.D., *London, O.*
 Dawson, Very Rev. Æneas Macdonell, LL.D., *Ottawa*.
 Denison, Lt.-Col. G. T., B.C.L., *Toronto*.
 Grant, Very Rev. G.M., D.D., Principal of Queen's University,
Kingston.
 Hale, Horatio, *Clinton*.
 Kingsford, William, LL.D., *Ottawa*.
 Kirby, William, *Niagara*.
 Mair, Charles, *Prince Albert, N. W. T.*
 Murray, George, B.A., High School, *Montreal*.
 Murray, Rev. J. Clark, LL.D., McGill University, *Montreal*.
 McColl, Evan.
 Patterson, Rev. George, D.D., *New Glasgow*.
 Reade, John, *Montreal*.
 Roberts, Charles, King's College, *Windsor, N.S.*
 Stewart, George, jun., D.C.L., D.L., F.R.G.S., *Quebec*.
 Watson, J., M.A., LL.D., Queen's University, *Kingston*.
 Wilson, Sir Daniel, LL.D., F.R.S.E., President of University of
 Toronto, *Toronto* (ex-President).
 Withrow, Rev W. H., D.D., *Toronto*.

III.—MATHEMATICAL, PHYSICAL AND CHEMICAL SCIENCES.

- Baillargé, C., C.E., *Quebec*.
 Bovey H. T., M.A., C.E., McGill University, *Montreal*.
 Carpmael, C., M.A., Superintendent of Meteorological Service, *Toronto*.
 Chapman, E. J., Ph.D., LL.D., University of Toronto, *Toronto*.
 Deville, E., Surveyor General, *Ottawa*.
 Dupuis, N. F., M.A., F.R.S.E., Queen's University, *Kingston*.
 Fleming, Sanford, C.M.G., LL.D., C.E., *Ottawa* (ex-President).
 Girdwood, G. P., M.D., McGill University, *Montreal*.
 Gisborne, F. N., M.I.T.E.E., C.E., *Ottawa*.
 Hamel, Monsignor, M.A., Laval University, *Quebec* (ex-President).
 Harrington, B. J., B.A., Ph.D., McGill University, *Montreal*.
 Hoffmann, G. C., F. Inst. Chem., Geological Survey, *Ottawa*.
 Hunt, T. Sterry, M.A., LL.D., F.R.S., *Washington, D.C.* (ex-President).
 Johnson, A., LL.D., McGill University, *Montreal*.
 Loudon, J. T., M.A., University of Toronto, *Toronto*.
 Macfarlane, T., M.E., *Ottawa*.
 MacGregor, J. G., M.A., D.Sc., F.R.S.E., Dalhousie University, *Halifax*.

IV.—GEOLOGICAL AND BIOLOGICAL SCIENCES.

- Bailey, L. W., M.A., Ph.D., University of New Brunswick, *Fredericton*.
 Bell, Robert, M.D., C.E., F.G.S., Geological Survey, *Ottawa*.
 Burgess, T. J. W., M.D., *Montreal*.
 Dawson, G. M., D.Sc., LL.D. A.R.S.M., F.G.S., Geological Survey, *Ottawa*.
 Dawson, Sir J. William, C.M.G., LL.D., F.R.S., Principal of McGill University, *Montreal* (ex-President).

- Fletcher, James, the Government Entomologist, *Ottawa*.
 Gilpin, Edwin, M.A., F.G.S., Inspector of Mines, *Halifax*.
 Grant, Sir J. A., K.C.M.G., M.D., F.G.S., *Ottawa*.
 Laflamme, Abbé J. C. K., D.D., M.A., Laval University, *Quebec*.
 Lawson, G., Ph.D., LL.D., Dalhousie University, *Halifax* (ex-President).
 Macoun, J., M.A., F.L.S., Geological Survey, *Ottawa*.
 Matthew, G. F., M.A., *St. John, N.B.*
 MacKay, A. H., B.A., B.Sc., High School, *Halifax, N.S.*
 Mills, T. Wesley, M.A., M.D., McGill University, *Montreal*.
 Penballow, D. P., B.Sc., McGill University, *Montreal*.
 Provancher, Abbé, *Cap Rouge, Quebec*.
 Saunders, W., Director of the Experimental Farm, *Ottawa*.
 Selwyn, A. R. C., C.M.G., LL.D., F.R.S., F.G.S., Director of the Geological Survey, *Ottawa*.
 Whiteaves, J. F., F.G.S., Geological Survey, *Ottawa*.
 Wright, R. Ramsay, M.A., B.Sc., University of Toronto, *Toronto*.

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THE TRANSACTIONS.

Subjoined are the titles of papers read before the Society and published in the Transactions from 1882 to 1890, arranged according to sections :

SECTION I.

1882.

Nos quatre historiens modernes, Bibaud, Garneau, Ferland, Faillon, par J. M. LeMoine.

Discours d'inauguration, par Faucher de Saint-Maurice.

Quelques scènes d'une comédie inédite, par F. G. Marchand.

- Familles canadiennes, par l'Abbé Tanguay.
Les interprètes du temps de Champlain, par B. Sulte.
Le bien pour le mal (poésie), par P. LeMay.
Etude sur les commencements de la poésie française au
Canada, par P. J. O. Chauveau.
Notre passé littéraire et nos deux historiens, par l'Abbé
Casgrain.
Vive la France (poésie), par L. H. Fréchette.

1883.

- Les archives du Canada, par J. M. LeMoine.
Louis Turcotte, par l'Abbé Tanguay.
Etude sur les noms, par l'Abbé Tanguay.
Notre histoire—à la mémoire de F. X. Garneau (poésie),
par L. H. Fréchette.
Les premiers seigneurs du Canada, par B. Sulte.
Un bonheur en attire un autre—comédie en un acte,
par F. G. Marchand.

1884.

- Deux points d'histoire—(1) Quatrième voyage de
Jacques-Cartier ; (2) Expédition du Marquis de la
Roche, par Paul de Cazes.
Etude sur une famille canadienne—Famille de Cata-
logne, par l'Abbé Tanguay.
La province de Québec et la langue française, par Napo-
léal Legendre.
Les races indigènes de l'Amérique devant l'histoire, par
Napoléon Legendre.

Poutrincourt en Acadie, 1604-1623, par B. Sulte.

Les quarante dernières années—Le Canada depuis l'Union de 1841, par John Charles Dent. Etude critique, par l'Abbé Casgrain.

Les commencements de l'Eglise du Canada, par l'Abbé Verreau.

Une promenade dans Paris—Impressions et souvenirs, par Joseph Marmette.

Les aborigènes de l'Amérique—Leurs rites mortuaires, par J. M. LeMoine.

Le Sacré-Cœur (poésie), par P. J. O. Chauveau.

Au bord de la Creuse, par L. H. Fréchette.

L'Espagne, par Louis Fréchette.

Trois Episodes de la Conquête, par L. H. Fréchette :

I. Fors l'honneur !

II. Les dernières cartouches.

III. Le drapeau fantôme.

Les travers du siècle, par F. G. Marchand.

1885.

Les premières pages de notre histoire, par Louis Fréchette.

Prétendues origines des Canadiens-Français, par B. Sulte.

Lettre d'un volontaire du 9ième Voltigeurs campé à Calgary, par A. B. Routhier.

Un des oubliés de notre histoire—Le capitaine de vaisseau Vauguelain, par Faucher de Saint Maurice.

Les derniers seront les premiers—Hommage à son Honneur Rodrigue Masson, lieutenant-gouverneur de la province de Québec, par Pamphile LeMay.

Biographie de Gérin-Lajoie—Fragment, par l'Abbé Casgrain.

La race française en Amérique, par Napoléon Legendre.
L'Angleterre et le clergé français, réfugié pendant la Révolution, par l'Abbé Bois.

La frontière nord de la province de Québec, par P. de Cazes.

Epître à M. Prendergast, après avoir lu son "Un soir d'automne," par P. J. O. Chauveau.

L'élément étranger aux Etats-Unis, par Faucher de Saint-Maurice.

Autrefois et maintenant, par Napoléon Legendre.

L'anatomie des mots, par Napoléon Legendre.

Le dernier boulet—Nouvelle historique, par J. Marmette.

L'aigle et la marmotte—Fable, par F. G. Marchand.

A travers les registres, par l'Abbé Tanguay.

1886.

Le pionnier, par Louis Fréchette.

Le Golfe Saint Laurent (1600-1625), par B. Sulte.

Un pèlerinage au pays d'Évangéline, par l'Abbé Casgrain.

Oscar Dunn, par A. D. Decelles.

Les pages sombres de l'histoire, par J. M. LeMoine.

1887.

La cloche, par Napoléon Legendre.
Les Acadiens après leur dispersion, par l'Abbé Casgrain.
Un vieux fort français, par P. J. U. Baudry.
La fileuse, par Napoléon Legendre.
La noce au village, par Napoléon Legendre.
La langue que nous parlons, par Paul de Cazes.
La langue que nous parlons, par Napoléon Legendre.
In formâ pauperis, par Rémi Tremblay.
Des commencements de Montréal, par l'Abbé Verreau.
La crise du régime parlementaire, par A. D. Decelles.
Hosanna, par Pamphile LeMay.

1888.

La fin de la domination française et l'historien Parkman,
par Hector Fabre.
Par droit chemin, par Pamphile LeMay.
Les souffrants, par Pamphile LeMay.
Eclaircissements sur la question acadienne, par l'Abbé
Casgrain.
Sainte Anne d'Auray et ses environs, par Louis Fré-
chette.
Le Général Frédéric Haldimand à Québec, 1778-1784,
par J. M. LeMoine.
Trois mois à Londres—Souvenirs de l'exposition coloniale
—Fragments, par J. Marmette.

1889.

Montcalm peint par lui-même d'après des pièces inédites,
par l'Abbé Casgrain.

Le Golfe Saint Laurent (1625-1632), par B. Sulte.

Parallèle historique entre le Comte de la Galissonnière
(1747-1749) et le Comte de Dufferin (1872-1878),
par J. M. LeMoine.

Ma imilien, voyageur, écrivain, critique d'art, poète,
marin, observateur, philosophe, bibliophile et chré-
tien, par Faucher de Saint Maurice.

SECTION II.

1882.

Inaugural Address, by Daniel Wilson.

On the Establishment of Free Public Libraries in Canada,
by Alpheus Todd.

Language and Conquest—a Retrospect and a Forecast,
by John Reade.

1883.

Pre-Aryan American Men, by Daniel Wilson.

Some Old Forts by the Sea, by J. G. Bourinot.

The Literature of French Canada, by John Lesperance.

A Problem of Visual Perception, by J. Clark Murray.

The Nomenclature of the Laws of Association, by J. Clark
Murray.

An Addition to the Logical Square of Opposition, by J.
Clark Murray.

1884.

The Making of Canada, by John Reade.

The Literary Faculty of the Native Races of America, by
John Reade.

The Poets of Canada, by John Lesperance.

A Plea for a Canadian Camden Society, by G. Bryce.

The Huron-Iroquois of Canada, a typical race of American
Aborigines, by D. Wilson.

1885.

The Half-breed, by John Reade.

Vita sine Literis, by John Reade.

Sources of Early Canadian History, by George Stewart, jr.

The Adventures of Isaac Jogues, S. J., by Rev. W. H.
Withrow.

The Annals of an Old Society, by John M. Harper.

The Artistic Faculty in Aboriginal Races, by Daniel
Wilson.

Palæolithic Dexterity, by Daniel Wilson.

The Five Forts of Winnipeg, by Rev. G. Bryce.

1886.

The Right Hand and Left-handedness, by D. Wilson.

Local Government in Canada : an Historical Study, by
J. G. Bourinot.

Historical Record of St. Maurice Forges, the Oldest
Active Blast Furnace on the Continent of America,
by F. C. Wurtele.

Brief Outlines of the Most Famous Journeys in and about
Rupert's Land, by Rev. G. Bryce.
The Lost Atlantis, by Daniel Wilson.

1887.

Some Wabanaki Songs, by John Reade.
Aboriginal American Poetry, by John Reade.
The Eskimo, by Franz Boas.
First Siege and Capture of Louisburg, by Sir Adams Archibald.
The Analytical Study of Canadian History, by John Lesperance.
Notes and Observations on the Kwakwiool People of the
Northern part of Vancouver Island and adjacent
coasts, made during the Summer of 1885, with a
Vocabulary of about seven hundred words, by G. M.
Dawson.
On the Indians and Eskimo of the Ungava District
Labrador, by Lucien M. Turner.
Jacques Cartier's First Voyage, by W. F. Ganong.

1888.

The Romance of the History of Canada, by John Lesperance.
The Last Decade of French Rule in America, 1749–
1759, by J. M. LeMoine.
The Basques in North America, by John Reade.
Some Indoor and Outdoor Games of the Wabanaki Indians, by Mrs. W. W. Brown.

The Indians of British Columbia, by Franz Boas.
A Grammar of the Kwagiutl Language, by the Rev.
Alfred J. Hall.

1889.

The Study of Political Science in Canadian Universities,
by J. G. Bourinot.
The Cartography of the Gulf of St. Lawrence from Car-
tier to Champlain, by W. F. Ganong.
Trade and Commerce of the Stone Age, by Sir D. Wil-
son.
Expedition to the Pacific, with a brief reference to the
voyages of discovery in seas contiguous to Canada
in connection with a Western passage from Europe
to Asia, by Sandford Fleming.

SECTION III.

1882.

The Relations of the Natural Sciences. Inaugural
Address, by T. Sterry Hunt.
On the Line of Facility of Error, etc., by Charles Carp-
mael.
On an Application of a Special Determinant, by J. B.
Cherriman.
The Motion of a Chain on a Fixed Plane Curve, by J
B. Cherriman.
Note on the Bishop's Move in Chess, by J. B. Cherri-
man.

On the Measurement of the Resistance of Electrolytes,
by J. G. McGregor.

Note on Molecular Contraction in Natural Sulphids, by
E. J. Chapman.

Symmetrical Investigation of the Curvature of Surfaces,
by A. Johnson.

Note on Zinc Sulphid, by Thos. Macfarlane.

1883.

On the Reduction of Sulphate of Soda by Carbon, by
Thos. Macfarlane.

On some Experiments showing that the Electromotive
Force in Polarization is independent of the difference
of Potential of the Electrodes, by J. G. McGregor.

Note on Spectroscopic Scales, by E. J. Chapman.

On Cryptomorphism in its relation to Classification and
Mineral Types, by E. J. Chapman.

Sur la mesure des distances terrestres par des observations
astronomiques, par E. Deville.

On the Application of Hydriodic Acid as a Blowpipe
Reagent (with four plates), by E. Haanel.

On the Mechanical Means of making a Sidereal Clock
show Mean Time, by N. F. Dupuis.

On some Minerals new to Canada, by B. J. Harrington.
Reports on the Transit of Venus of December 6, 1882,
as follows:

The Preparations at Montreal, by Alex. Johnson.

- General Report, by Charles Carpmael.
Observations at Winnipeg, by Prof. McLeod.
Observations at Kingston, by Prof. Williamson.
Observations at Cobourg, by A. R. Bain.
Observations at Ottawa, by F. L. Blake.
On the Transition Resistance of the Electric Current,
etc., by J. G. McGregor.

1884.

- The Origin of Crystalline Rocks, by T. Sterry Hunt.
On the Density and Thermal Expansion of Solutions of
Copper Sulphate, by J. G. McGregor.
Blowpipe Reactions on Plaster of Paris Tablets, by E.
Haanel.
A Particular Case of Hydraulic Ram or Water Hammer,
by C. Baillargé.
Notes sur un fait météorologique particulier à Québec,
par l'Abbé Laflamme.
Essaie sur la constitution atomique de la matière, par
l'Abbé Hamel.

1885.

- Presidential Address, by Alexander Johnson.
Blowpipe Reactions on Plaster of Paris Tablets, by E.
Haanel.
On some Iron Ores of Central Ontario, by E. J. Chap-
man.
On the Density of Weak Aqueous Solutions of certain
Salts, by J. G. McGregor.

On the Analysis of Silk—Quantitative Estimation of Silk in a Mixed Texture, by H. A. Bayne.

On a Natural System in Mineralogy, with a Classification of Native Silicates, by T. Sterry Hunt.

Tidal Observations in Canadian Waters, by Alexander Johnson.

On the Determination in terms of a Definite Integral of the value of an Algebraical Expression, the series to be continued only as long as the quantity raised to power, $m + n$, is positive, n being a positive integer, and m a positive integer, zero, or a negative integer numerically less than n ; and on the deduction therefrom of approximate values in certain cases, by Charles Carpmael.

The Longitude of McGill College Observatory, by W. A. Rogers and C. H. McLeod.

1886.

Presidential Address, by Charles Carpmael.

The Generic History of Crystalline Rocks, by T. Sterry Hunt.

On the Colouring Matter of Black Tourmalines, by E. J. Chapman.

Time Reckoning for the Twentieth Century, by Sandford Fleming.

Du choix d'une projection pour la carte du Canada, par E. Deville.

Supplement to "A Natural System in Mineralogy, etc.,"
by T. Sterry Hunt.

On some Canadian Minerals, by B. J. Harrington.

On some Points in Reference to Ice Phenomena, by
Robert Bell.

Abel's Forms of the Roots of the Solvable Equation of
the Fifth Degree, by G. Paxton Young.

A Meteorite from the North-West, by A. P. Coleman.

1887.

Presidential Address, by Thomas Macfarlane.

On a Specimen of Canadian Native Platinum from Bri-
tish Columbia, by G. C. Hoffmann.

Notes on the Analysis of Coffee, by Anthony McGill.

Remarks on the Use of Asbestos in Milk Analysis, by
Thomas Macfarlane.

The Analysis of Milk, by W. H. Ellis.

On the Sap of the Ash-leaved Maple (*Negundo aceroides*), by B. J. Harrington.

Microscopic Petrography of the Drift of Central Ontario,
by A. P. Coleman.

The Digestibility of Certain Varieties of Bread: an Ex-
perimental Study of the Alum Question, by Dr. R.
F. Ruttan.

An Investigation as to the Maximum Bending Moments
at the points of support of Continuous Girders of n
Spans, by Henry T. Bovey.

1888.

A Table of the Cubical Expansion of Solids, by J. G. McGregor.

Occultations of Fixed Stars by the Moon: Prediction for a given place by a graphical method, by W. F. King.

Determination of Time by Transits across the Vertical of Polaris, by E. Deville.

The Longitude of Toronto Observatory, by Charles Carpmael and C. H. McLeod (with Appendix on the Longitude of Cobourg, Ontario, by C. H. McLeod and G. W. Chandler).

ABSTRACTS.

The Classification and Nomenclature of Metalline Minerals, by T. Sterry Hunt.

Revision des Eléments de Géométrie d'Euclide, par C. Baillargé.

1889.

The Maximum Shear and Bending Moment produced by a Live Load at different points of Horizontal Girder A B of Span 1, by H. T. Bovey.

Notes on Mathematical Physics, by J. Loudon.

A National Standard of Pitch, by J. Loudon

- Notes on some Unexplained Anomalies in the Flame
Reactions of certain Minerals and Chemical Bodies,
by E. J. Chapman.
- Cruces Mathematicæ, by N. F. Dupuis.
- On the Variation of Density, with the Concentration of
weak Aqueous Solutions of certain Salts, by J. G.
McGregor.
- A Problem in Political Science, by Sandford Fleming.
- On the Hygroscopicity of certain Canadian Fossil Fuels,
by G. C. Hoffmann.
- Computation of Occultation and Eclipses for a given
locality by Graphic Construction, by N. F. Dupuis.
- Annotated List of Minerals occurring in Canada, by G.
C. Hoffmann.

SECTION IV.

1882.

- On the Quebec Group in Geology (with woodcut), by
A. R. C. Selwyn.
- On the Cretaceous and Tertiary Floras of British
Columbia and the North-West Territories (with
eight plates), by J. W. Dawson.
- On the Importance of Economizing and Preserving our
Forests, by W. Saunders.
- On a General Section from the Laurentian Axis to the
Rocky Mountains (with a woodcut), by G. M.
Dawson.

Notes on the Distribution of Northern, Southern and Saline Plants in Canada, by John Macoun.

Notes on the Birds of Hudson's Bay, by R. Bell.

On the Glaciation of Newfoundland, by Alex. Murray.

On the Introduction and Dissemination of Noxious Insects, by W. Saunders.

On the Lower Cretaceous Rocks of British Columbia, by J. F. Whiteaves.

Illustrations of the Fauna of the St. John Group (with two plates), by G. F. Matthew.

On some supposed Annelid Tracks from the Gaspé Sandstone (with two plates), by J. F. Whiteaves.

On the Classification of Crinoids, by E. J. Chapman.

1883.

On the Geology of Lake Superior, by A. R. C. Selwyn.

On the Influence of Sex upon the Hybrids among Fruits, by W. Saunders.

On the Flora of the Gaspé Peninsula, by John Macoun.

On the Folding of the Carboniferous in the Maritime Provinces of Canada, by E. Gilpin, jr.

On the Triassic of the Rocky Mountains and British Columbia, by G. M. Dawson.

On a Method of Distinguishing Lacustrine from Marine Deposits, by G. F. Matthew.

Notes on Canadian Polypetala, by John Macoun.

Causes of the Fertility of the Land in the Canadian North-West by R. Bell.

Note sur la géologie du Lac Saint Jean, par l'Abbé Laflamme.

The Geological History of Serpentine, including Notes on Pre-Cambrian Rocks, by T. Sterry Hunt.

A Historical Account of the Taconic Question in Geology, with a discussion of the relations of the Taconian Series to the older Crystalline and to the Cambrian Rocks, Part I., by T. Sterry Hunt.

Illustrations of the Fauna of the St. John Group (supplement), by G. F. Matthew.

NOTES AND ABSTRACTS.

On the Physical and Geological History of the St. John River, N.B., by L. N. Bailey.

On some Ferruginous Concretions, by D. Honeyman.

On Erosion from Coast Ice and Floating Ice in the Baie des Chaleurs, by R. Chalmers.

On a Specimen of the Inferior Maxilla of *Phoca Groenlandica*, by J. A. Grant.

1884.

On some Relations of Geological Work in Canada and in the Old World, by Sir J. W. Dawson.

Notes on the Manganese Ores of Nova Scotia, by Edwin Gilpin.

Revision of the Canadian Ranunculaceæ, by George Lawson.

- On Geological Contacts and Ancient Erosion in Southern and Central New Brunswick, by L. W. Bailey.
- Illustrations of the Fauna of the St. John Group (continued): On the Corocoryphea, with further remarks on Paradoxides, by G. F. Matthew.
- A Historical Account of the Taconic Question in Geology, with a discussion of the relations of the Taconian Series to the older Crystalline and to the Cambrian Rocks, Part II., by T. Sterry Hunt.
- On some Deposits of Titaniferous Iron Ore in the Counties of Haliburton and Hastings, Ontario, by E. J. Chapman.
- On Mimetism in Inorganic Nature, by E. J. Chapman.
- Canadian Filiciniae, by J. Macoun and T. J. W. Burgess.
- Notes sur certains dépôts aurifères de la Beauce, par l'Abbé Laflamme.
- Notes sur un gisement d' émeraude au Saguenay, par l'Abbé Laflamme.
- Notes on the Occurrence of Certain Butterflies in Canada, by W. Saunders.
- Note on a Decapod Crustacean from the Upper Cretaceous of Highwood River, Alberta, N.W.T., by J. F. Whiteaves.
- Description of a new species of Ammonite from the Cretaceous Rocks of Fort St. John, on the Peace River, by J. F. Whiteaves.

ABSTRACTS.

The Geology and Economic Minerals of Hudson Bay and Northern Canada, by R. Bell.

Notes on Observations, 1883, on the Geology of the North Shore of Lake Superior, by A. R. C. Selwyn.

1885.

On the Mesozoic Floras of the Rocky Mountain Region of Canada, by Sir J. W. Dawson.

On the Wallbridge Hematite Mine, as illustrating the stock-formed mode of occurrence in certain ore deposits, by E. J. Chapman.

Geology of Cornwallis or McNab's Island, Halifax Harbour, by Rev. D. Honeyman.

Illustrations of the Fauna of the St. John Group (continued): No. III.—Descriptions of New Genera and Species (including a description of a new Species of *Selenopleura*, by J. F. Whiteaves), by G. F. Matthew.

Catalogue of Canadian Butterflies, with notes on their distribution, by W. Saunders.

On the Skull and Auditory Organ of the Siluroid *Hypophthalmus*, by R. Ramsay Wright.

1886.

Presidential Address: Some points in which American Geological Science is indebted to Canada, by Sir J. W. Dawson.

- Recent Additions to Canadian Filicineæ, with new stations for some of the species previously reported, by T. J. W. Burgess.
- On the Fossil Plants of the Laramie Formation of Canada, by Sir J. W. Dawson.
- On the Silurian System of Northern Maine, New Brunswick and Quebec, by L. W. Bailey.
- Note sur le contact des formations paléozoïques et archéennes, de la province de Québec, par l'Abbé Laffamme.
- Mechanism of Movement in Cucurbita, Vitis and Robinia, by D. P. Penhallow.
- On Certain Borings in Manitoba and the North-West Territory, by G. W. Dawson.
- Illustrations of the Fossil Fishes of the Devonian Rocks of Canada (Part I.), by J. F. Whiteaves.
- On some Marine Invertebrata, dredged or otherwise collected by Dr. G. M. Dawson, in 1885, in the Northern part of the Strait of Georgia, in Discovery Passage, Johnstone Strait, and Queen Charlotte and Quatsino Sounds, British Columbia, with a Supplementary List of a few Land and Freshwater Shells, Fishes, Birds, etc., from the same region, by J. F. Whiteaves.
- On the Glaciation and Pleistocene Subsidence of Northern New Brunswick and South-Eastern Quebec, by R. Chalmers.

On the Cambrian Faunas of Cape Breton and Newfoundland, by G. F. Matthews.

Notes on the Limestones of East River, Pictou, N.S., by Edwin Gilpin, jr.

Preliminary Report of some Graptolites from the Lower Palæozoic Rocks on the South side of the St. Lawrence, from Cape Rosier to Tartigo River, from the North Shore of the Island of Orleans one mile above Cap Rouge, and from the Cave Fields, Quebec, by Charles Lapworth.

1887.

Michel Sarrazin : matériaux pour servir à l'histoire de la science en Canada, par l'Abbé Laflamme.

The Faults and Foldings of the Pictou Coal Field, by Edwin Gilpin, jr.

Note on Fossil Woods and other Plant Remains from the Cretaceous and Laramie Formations of the Western Territories of Canada, by Sir William Dawson.

Notes on the Physiography and Geology of Aroostook County, Maine, by L. W. Bailey.

A Review of Canadian Botany from the First Settlement of New France to the Nineteenth Century, Part I., by D. P. Penhallow.

The Correlation of the Animikie and Huronian Rocks of Lake Superior, by Peter McKellar.

The Geography and Geology of Baffin Land, by Franz Boas.

The Physical and Zoological Character of the Ungava District, Labrador, by Lucien M. Turner.

Do any Canadian Bats Migrate? Evidence in the Affirmative, by Dr. C. Hart Merriam.

Glacial Erosion in Norway and in High Latitudes, by J. W. Spencer.

On the Theory of Glacial Motion, by J. W. Spencer.

The Petroleum Field of Ontario, by R. Bell.

Illustrations of the Fauna of the St. John Group: No.

IV, Part I.—Description of a new species of *Paradoxides* (*paradoxides regina*). Part II.—The Smaller Trilobites with Eyes (*Ptychoparidæ* and *Ellipsocephalidæ*), by G. F. Matthew.

Marine Algæ of New Brunswick, by George U. Hay (with an Appendix containing a list of the Marine Algæ of the Maritime Provinces of the Dominion of Canada, with Notes, by G. U. Hay and A. H. Mackay).

Squirrels: their Habits and Intelligence, with special reference to Feigning, by Dr. T. Wesley Mills (with an Appendix upon the Chickaree, or Red Squirrel, by Dr. R. Bell).

Arctic Plants Growing in New Brunswick, with Notes on their Distribution, by the Rev. James Fowler.

Remarks on the Flora of the Northern Shores of America, with Tabulated Observations made by F. F. Paine on the Seasonal Development of Plants at Cape

Prince of Wales, Hudson Strait, during 1886, by
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vonian Rocks in Southern New Brunswick, by G.
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Illustrations of the Fossil Fishes of the Devonian Rocks
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Presidential Address : On the Progress of Geological
Investigation in New Brunswick, by L. W. Bailey.

- Notes on Devonian Plants, by D. P. Penhallow.
- On New Species of Fossil Sponges from the Siluro-Cambrian at Little Métis on the Lower St. Lawrence, by Sir William Dawson (including Notes on the Specimens, by G. J. Hinde).
- On some Relations between the Geology of Eastern Maine and that of New Brunswick, by L. W. Bailey.
- On Fossil Plants collected by Mr. R. A. McConnell on Mackenzie River, and by Mr. T. C. Weston on Bow River, by Sir William Dawson.
- Descriptions of Eight New Species of Fossils from the Cambro-Silurian Rocks of Manitoba, by J. F. Whiteaves.
- Fresh-water Sponges of Canada and Newfoundland, by A. H. Mackay.
- Notes on the Geography and Geology of the Big Bend of the Columbia, by A. P. Coleman.
- The Yield of Spring Wheat, Barley and Oats, grown as single Plants, by W. Saunders.
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Presidential Address : On the later Physiographical Geology of the Rocky Mountain Region in Canada, with special reference to Changes in Elevation and to the History of the Glacial Period, by George W. Dawson.

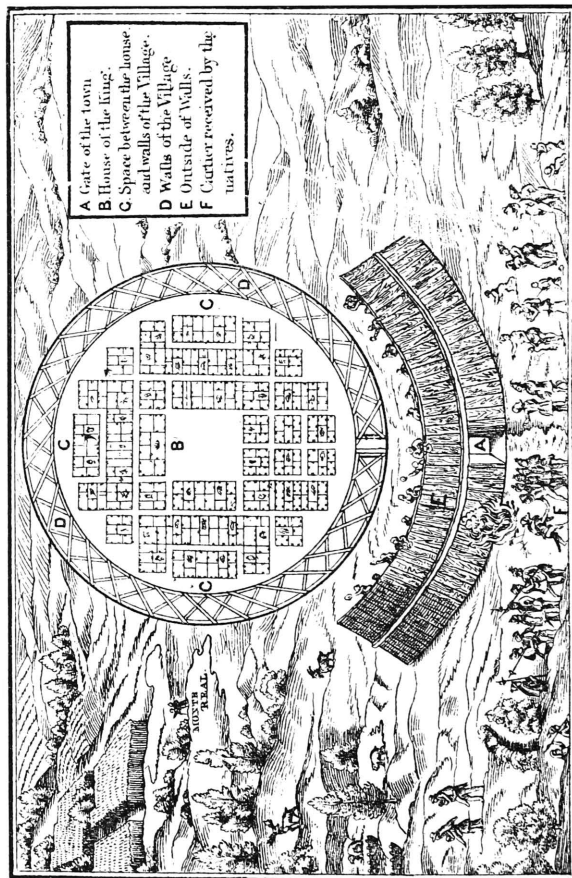
On Fossil Plants from the Similkameen Valley and other places in the southern interior of British Columbia, by Sir J. William Dawson.

Descriptions of some new or previously unrecorded species of Fossils from the Devonian Rocks of Manitoba, by J. F. Whiteaves.

Foraminifera and Radiolaria from the Cretaceous of Manitoba, by Joseph B. Tyrrell.

The evidence of a Nova Scotia Carboniferous Conglomerate, by E. Gilpin, Sr.

Illustrations of the Fauna of the St. John Group, by G. F. Matthew.



CARTIER'S MAP OF HOCHELAGA IN 1535.

HISTORICAL SKETCH OF MONTREAL.

In tracing the history of many of the more important cities of the New World as well as of the Old, we find their origin dating back to prehistoric times, shewing that the pioneer races, uncivilized as they were, were not slow to recognize the beauty and natural advantages of these sites. Thus in this connection it has been said : "Stadaconé and Hochelaga, Quebec and Montreal in the sixteenth century as well as in the nineteenth were the centres of Canadian population." It was to this Hochelaga that Jacques Cartier, in 1535, directed his course, after leaving his larger vessels at Stadaconé. He found it a thriving centre of population, such as were the Indian towns of the time, surrounded with fields of Indian corn. From the delightful view as seen from the top of the mountain, he called it Mount Royal, and this name has supplanted the Indian original, and Hochelaga is now only the name of the most eastern ward and the farthest removed in the city from the primitive site. He describes the place as well fortified and of a circular form, and from the similarity of the dwellings to the descriptions given in the Jesuit Relations as prevailing

in Huron and Iroquois towns, there is little doubt that the inhabitants belonged to the Huron-Iroquois family.

Traditions among the Mohawks point to the banks of the St. Lawrence as their old home. Another tradition relates that a Seneca maiden who was rejected by her fiancé at the command of his father, a chief of the same tribe, refused to marry any brave until he had sworn to avenge her of the insult. A Huron chief accepted her under this condition, and his slaying the Seneca chief brought the enmity of that tribe upon his own. In the war that ensued, the Hurons were at first successful, probably destroying Hochelaga in one of their attacks, but this success was dearly bought, for it resulted at length in the extermination of the tribe in the succeeding century.

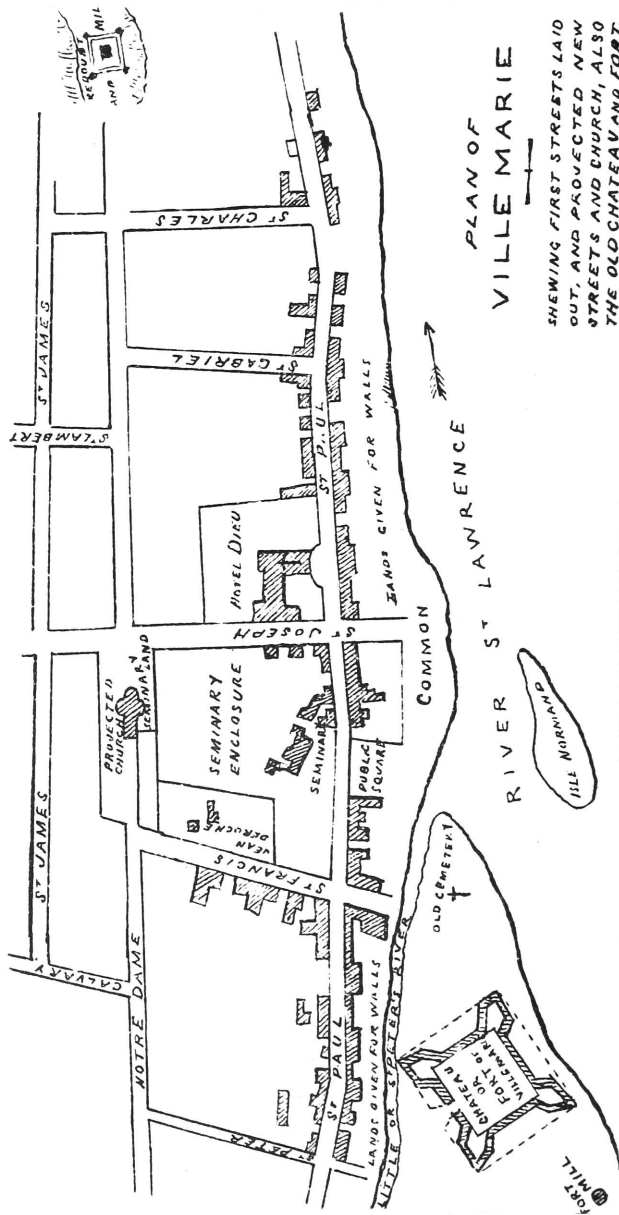
In 1611, Champlain ascended the St. Lawrence, and disembarking at Hochelaga, near the spot afterward known as Point à Callière (the present site of the Custom House), he put up some buildings, and built a wall of bricks made from local clay deposits. He pronounced the site one on which a large and important city should at some time be built, but he found no trace of the Indian town. The movement had begun among the Indian tribes resulting in the final supremacy of the Iroquois, which first drove them from their flourishing settlements on the banks of the St. Lawrence.

HAND-BOOK.

The memory of the place had remained forgotten for three hundred years, until, Herculaneum-like, it was discovered by men excavating for foundations. First, a skeleton was found in a sitting posture, then other skeletons. Then specimens of pottery. On a more careful search being made by local antiquarians, the rubbish heap of the town was discovered. This consisted of broken pottery and pipes, with bones of the animals used as food, besides the fragments of other items in their bill of fare. Much of the habits of the old townspeople was gathered from these researches. But the whole work was desultory, being left to the caprice of individuals. Had a more careful survey been made, we would possibly have known the extent of the town and its true shape. So far only the western border was touched upon—that by the brook which, running through McGill College grounds, passed down by Metcalfe Street. The place is now covered with buildings, and further opportunity for research is gone. The particular spot was chosen because of its warm sandy soil, suitable for the cultivation of the Indian corn, the chief food product of the people.

After Champlain's visit, the place remained unheeded, except that it was commented upon in the Jesuits' Relations as a favorable spot for settlement, until Jérôme le Royer de la Dauversière, as is related, received a revelation to found an order of Hospital Nuns at Montreal. About the same time, Jean Jacques Olier, a

priest, afterwards founder of the Seminary of St. Sulpice, in Paris, was filled with inner promptings to found a society of priests and establish them at Montreal. These two enthusiasts met and talked of their scheme: they were joined by others, some with means, and the Associates of Notre Dame de Montréal were banded together for the settlement of a community in the wilderness. The seignior, which included the whole island of Montreal, was purchased from the Hundred Associates. In 1641, the plans of the Society, who now numbered forty-five, including Mademoiselle Mance, were so matured that the expedition was ready to sail. The command was given to Paul de Chomedy, Sieur de Maisonneuve, who as much of an enthusiast as the originators of the scheme was in every way qualified for the arduous task. He arrived at Quebec too late in the season to proceed farther up the river, and had to winter there amid trials and difficulties thrown in his way. The time was spent preparing for the voyage up the river, which was commenced as soon as spring opened. It was not therefore until the 18th of May, 1642, that the little company of settlers, numbering fewer than fifty, landed and took possession of Villemarie de Montréal. Thus next year, when all America will be celebrating the four hundredth anniversary of the landing of Columbus, Montreal will, on the 18th of May, celebrate the 250th anniversary of its foundation.



The first sermon or address on landing given by their pastor, Father Vimont, seemed prophetic: "You are few, but your work is the work of God. His smile is on you, and your children shall fill all the land."

Pitching their tents in this wilderness they laid themselves down to sleep by their bivouac fires, and dreamed no doubt of the greatness of a city filled with a devout and God-loving people such as the Old World with all its evils could not produce. The little colony continued on in that pioneer settlement, threatened now with hunger and then with the ever-watchful Iroquois, and hampered with the jealousy of Quebec. It seems a wonder that the new community continued to exist through all these evils. The first of the two projected institutions, that of the Hospital Nuns, was founded with Mademoiselle Mance as the director. In 1647, the Abbé de Quélus and three other priests were sent out by Olier to found a branch of the Seminary of Saint Sulpice in Montreal. About this time the settlement was joined by another of those who devoted their lives to the good work in founding this city—Mademoiselle Marguerite Bourgeoys. She became the founder of the Congregational Nunnery here. Thus these three flourishing institutions of to-day date back to the inception of the city.

The fur trade tended to Montreal as the most convenient place, soon intercepting much that had formerly proceeded to Three Rivers and Quebec. It at length became the

entrepôt of the traffic. In 1660, there was a determined raid made upon the town by the Iroquois. The warriors covered the island, ready to capture or kill any that should leave the cover of the fortifications.

In 1722, the fortifications were built, and these old walls enclosing the whole town were not removed until 1808. A remnant continued until the demolition of the Quebec Gate Barracks in 1881. A citadel was built on a high mound near the eastern limits of the city. In the centre of the citadel stood a large windmill, where the grain brought in from the country was ground. When Earl Dalhousie was made Governor General he caused the mound to be removed, and his name was given to the Square now occupying its place.



The town continued slowly to make progress until the Conquest, when, invested by the two armies from the North and South, it capitulated in September, 1760. A medal awarded by Sir William Johnson to the Indian chiefs who went with him to Montreal gives a very old but conventional view of the town.

With this change came a time of peace, the first respite from a state of warfare or of expectancy of war ever enjoyed by Montreal. A new race came, too, inspiring fresh energy and a revival of the old-time love of enterprise in the citizens. And these two races have continued to emulate and stimulate each other with a harmony hardly elsewhere to be found.

When the colonies to the South revolted, although there were some restless spirits in the city, the people remained firm to the rule which they found to be such an improvement on the carnival of extravagance and fraud that had prevailed in the years preceding the Conquest. Although the invading army under Montgomery, with Franklin as its mouthpiece, used all its persuasive powers to induce the citizens to throw in their lot with the Thirteen Colonies, these citizens could not forget the old feuds; so, with the defeat of the invaders at Quebec and the advance of succour, Montreal soon returned to her British allegiance, with which nothing has since happened to interfere.

The fur trade now began to centre more and more in the town, the Hudson Bay Company diverting much of

its business to the St. Lawrence route, while a new competition in the shape of the Northwest Company was organized. This grew out of the wrecks of the old French trade. The chief promoters of this company were energetic Scotchmen, who, seeming to have caught the spirit of the old voyageurs, made their company prosperous and famous. Among these voyageurs, French and Scotch, was organized a club, in which social intercourse was enjoyed in recounting during the long winter evenings their summer adventures in the Western wilds. Many prominent names in the city's history were enrolled as its members. It was the first organization of the kind in the city, and, although mainly social in its character, was the forerunner of those literary and scientific institutions that have helped so much to stimulate the study of literature and science throughout Canada.

The war of 1812 stimulated the patriotism of the citizens to its utmost, while the capture of Fort Detroit and the bringing of General Hull to Montreal inspired unbounded enthusiasm. The proximity of the city to the border and its defenceless condition kept it in constant alarm whenever a rumor of an invading army was approaching.

On the close of the war the citizens returned to their avocations, and quiet reigned until the years preceding the memorable days of 1837. The agitation for responsible government which pervaded the whole Province

culminated in that year in open strife, it could not be called warfare. The centre of the movement was in Montreal, but the attempts at independence, notwithstanding the sympathy from the United States, soon proved abortive.

Yet the main point in the dispute was secured, for responsible government was granted. But shortly afterward, on a bill passing the Legislature indemnifying all who had sustained loss in the rebellion, a riot ensued in which the Parliament House was burnt. This caused the removal of the seat of government permanently from Montreal, although the most convenient centre. The greatest loss of the occasion was the burning of the parliamentary library, rich in Canadian archives and works on Canadian history.

Since then, although there have been times of dullness and depression, the city has continued to advance in material wealth. Science and literature have not been neglected. Many of our citizens have made themselves famous in all departments. While such is the scientific reputation of our students, coupled with private munificence, that the two foremost Scientific Associations of the English-speaking world, the British Association and the American Association for the Advancement of Science, have held meetings in Montreal, an honour that no other city has enjoyed.

PUBLIC LIBRARIES.

Little is recorded regarding the facilities enjoyed by the reading public in Montreal in the olden time. Most of the early attempts to found Public Libraries seem in the long run to have proved failures. Of the first institution of the kind in the city, known as the "Montreal Library," we learn that it was founded in 1796, that it was owned by a joint stock company, and that it continued to exist in various habitations until 1844, when the books, 2,980 in number, were purchased by the Mercantile Library Association.

In 1811, a Library Association was established under the auspices of Governor Craig, known as the "Craig Library," but it seems never to have grown beyond a small beginning.

The Mercantile Library Association was organized in 1840, and continued with varying success until 1864, when a lot was purchased on Bonaventure Street (now St. James), and a suitable building erected thereon. Although the new move was entered upon with much enthusiasm and a large membership roll secured, the interest began to flag, and, after a time, active work was given up, when, in 1886, the books, numbering less than 5,000, became the first instalment placed on the shelves of the newly organized Fraser Institute.

The Institut Canadien was founded in 1844 and incorporated in 1852. In 1854 a building was erected,

and, for a time, the Institute was a successful factor in the education of the people. A valuable donation of books, most beautifully illustrated, was presented by Prince Napoleon. The library, by this time, had increased to 7,500 volumes ; but the institution falling at length into financial difficulties, the building was sold and the books handed over to the Fraser Institute.

This Institute was founded by Hugh Fraser, Esq., who, by his will, left the bulk of his estate, valued at \$500,000, to found a free public library to be known by his name. A prolonged litigation prevented for many years the executors from carrying out the provisions of the will. After a final judgment in favour of the Institute, it was organized with the books from the Mercantile Library Association and Institut Canadien, together with the private library of the Hon. Justice Mackay. Additions have from time to time been made, bringing the total number to 30,000 volumes. Thus the Fraser Institute is a lineal descendant of the Montreal Library of 1796, the first organized in the city.

The Mechanics' Institute, founded in 1828 and incorporated in 1845, is the only one of the old public libraries that has retained its corporate existence until now. It still continues to occupy its original building, erected over forty years ago, and has proved highly beneficial in the city as an educator of young men. It has a library aggregating over 5,000 volumes. The other Libraries are :—

McGill College,	about.....	30,000	volumes
McGill College (Medical)	“	7,000	“
Advocates' Library	“	16,000	“
Union Catholique,	“	20,000	“
St. Mary's College,	“	10,000	“
Presbyterian College,	“	10,000	“
Congregational College	“	4,000	“
Young Men's Christian Association,	“	3,000	“
Cabinet de lecture,	“	5,000	“
Seminary, Notre Dame street,	about...	25,000	“
“ College, Sherbrooke st.,	“ ...	40,000	“
Jacques Cartier Normal School and Société Historique,	“ }	15,000	“

A F F I L I A T E D S O C I E T I E S.

N A T U R A L H I S T O R Y S O C I E T Y.

This Society was founded on the 16th of May, 1827. On August 20th of the same year the *Montreal Gazette* gives an account of the Society, placing the membership at fifty-three, with encouraging prospects. The officers were :—President, S. Sewell, Esq. ; Vice-Presidents, Cols. Hill and Mackay and Dr. Wm. Caldwell ; Secretaries, T. S. McCord, Esq., and Dr. A. F. Holmes ; Librarian and Cabinet Keeper, Mr. H. H. Cunningham ; Committee men, Rev. H. Esson, Dr. J. Stephenson, and Mr. J. M. Cairns.

In 1832, the Museum had so grown that an Act of Incorporation was secured, and later, the Rev. James Sommerville bequeathed a sum of money to found a course of free public lectures. Since then the Sommer-ville Lectures have been an annual feature of the Society's work. In 1858 a permanent building was secured and the Museum so arranged as to be made a more available factor for scientific education in the city.

The *Canadian Naturalist and Geologist*, commenced in 1857 by Mr. E. Billings, was in the following year

made the organ of the Society. In 1884 the name of the publication was changed to the *Canadian Record of Science*. In all, over twenty volumes have been published, replete with articles bearing on Canadian Science.

SOCIÉTÉ HISTORIQUE.

The Société Historique of Montreal, founded in 1857, was regularly incorporated in 1858 under the presidency of Mr. Commander Viger. It has published, under the title of *Memoires et Documents relatifs à l'histoire du Canada*, the following eight volumes :—

- 1st. De l'esclavage en Canada.
- 2nd. La famille de Lauson et les vice-Rois et Lieutenants Généraux des Rois de France en Amérique.
- 3rd. Ordonnances de M. de Maisonneuve, Gouverneur de Montréal.
- 4th. Histoire du Montréal, 1640–1672, par M. Dollier de Casson.
- 5th. Règne Militaire en Canada.
- 6th. Voyage de MM. Dollier et Gallinee.
- 7th. Voyage de Kalm en Amérique.
- 8th. Les véritables motifs des Messieurs et Dames de la Société de Notre Dame de Montréal.

NUMISMATIC AND ANTIQUARIAN SOCIETY.

This Society was founded in December, 1862, by a few gentlemen interested in the study of Numismatics,

under the name of "The Numismatic Society of Montreal." In 1866, the name was changed ; and in 1870, an act of incorporation was secured. Early in the history of the Society a work was commenced describing the coins of Canada, but, as one of the committee died and another removed from the city, the work was dropped. Another committee took it up and brought the work to completion.

In 1872, the publication of the *Canadian Antiquarian* was commenced, and so far fourteen volumes have appeared with articles on the antiquarian and numismatic history of the Dominion.

In 1877, the fourth centenary of Caxton was held under the auspices of the Society, at which the wealth of our public and private libraries in early printing, *editions de luxe* and rare and valuable works.

The twenty-fifth anniversary of the Society was celebrated two years ago, with an exhibition of portraits of persons celebrated in Canadian history.*

THE SOCIETY FOR HISTORICAL STUDIES

was the outcome of a movement among a few young men of Montreal, specially interested in the study of Canadian History. Towards the close of 1885, work was commenced, and a room secured in the Fraser

*Copies of the Historical Portrait Catalogue can be had from any of the officers of the Society.

Institute, where fortnightly meetings were held. In all some thirty-six papers have been read, each devoted to a special period in our history. A number of these have been published in *Canadiana*, the organ of the Society. Two of the papers have appeared in book form, meeting with a large sale, and receiving favorable notice from literary critics.

CERCLE LITTÉRAIRE FRANÇAIS.

This Society, organized in 1885, has for its object the cultivation of a literary taste among its members. Many original papers have been read at its meetings, a number of which have been published.

THE CANADIAN SOCIETY OF CIVIL ENGINEERS.

This Society was organized and incorporated in 1887 for the furtherance of a more extended knowledge of practical science among its members. Its membership, including associates, now numbers considerably over five hundred. A hall with reading-room has been secured at 112 Mansfield Street, where the library of the Society, already very complete on the subjects relating to the science, may be consulted. Meetings are held twice a month, at which papers are read and discussed. These papers appear in the Society's Proceedings, published semi-annually.

SOCIETY OF CANADIAN LITERATURE.

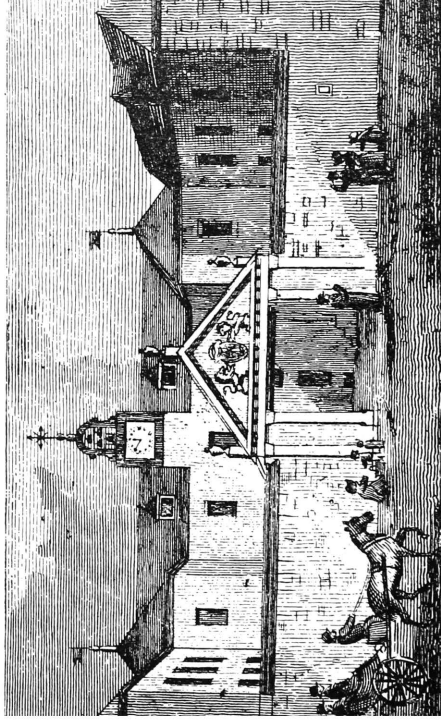
This Society was organized January 27th, 1889, for "the acquirement and diffusion of a knowledge of our best poetry, romance, historic works and other writings, the provision of a centre for local literary life.. .. and for the encouragement of all proper literary works and movements throughout the country."

A number of papers read before the Society have been published.

ART.

The Art Association of Montreal was instituted in 1860. Annual exhibitions were held of such works of art as were produced or brought into the city during the year. This was almost the only means available to educate the citizens in the love of the higher art until the death of Mr. Benaiah Gibb, in 1877. He bequeathed his valuable collection of ninety paintings, a lot of land and \$8,000 in money to found an Art Gallery. Many paintings, especially by Canadian artists, have since been added. The annual exhibition of the Royal Canadian Academy are re-exhibited in the Gallery, which, with local exhibits, art classes and lectures, has created an atmosphere of higher art in the city that had heretofore been wanting .

There are a number of private collections in the city, some of them far exceeding that of the Association in value, and in containing representatives of the different schools of the present as well as of the past.



THE SEMINARY, NOTRE DAME STREET.

HISTORIC BUILDINGS.

Very little remains of old Montreal. The necessities of commerce have carried most of it away, and what little remains seems destined soon to disappear. It was only the other day that the old building occupied by the Fabrique was torn down.

THE SEMINARY.

Part of the old building next to Notre Dame Church, built by Abbé Quélus in 1657 for the Seminary, is still standing, apparently as strong as ever. The strength of these walls to-day attest the thoroughness of the work performed by the first builders of Montreal. The stones were not hewn like those of to-day from the quarries, but were such boulders as were scattered over the ground belonging to the boulder clay period. They were in fact quarried from the old Laurentide mountains by frost and transported hither by ice. Thus was the first work of our first building performed without hand ages ago. The clock in this building still strikes the hours and quarters, telling the time to the citizens of Montreal at the close of the nineteenth century as well as it did in the seventeenth.

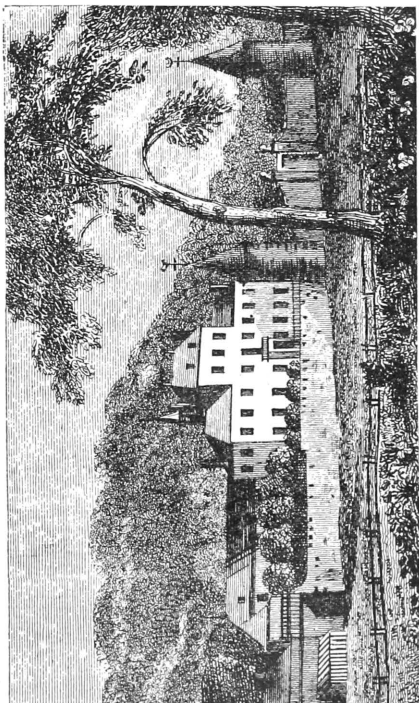
THE TOWERS.

The "old fort de la montagne," as it was wont to be called, erected as a bulwark against the inroads of the Indians, was flanked by two towers, which towers were allowed to remain when the new college on Sherbrooke street was erected. Mrs. Leprohon, in a beautiful poem, has so graphically given the history of the place, that it may be well to quote it here in full.

THE OLD TOWERS OF MOUNT ROYAL OR VILLE MARIE.

On proud Mount Royal's eastern side,
In view of St. Lawrence's silver tide,
Are two stone towers of masonry rude,
With massive doors of time-darken'd wood :
Traces of loop-holes are in the walls,
While softly across them the sunlight falls ;
Around broad meadows, quiet and green,
With grazing cattle—a pastoral scene.

Those towers tell of a time long past,
When the red man roamed o'er regions vast,
And the settlers—men of bold heart and brow—
Had to use the sword as well as the plough ;
When women (no lovelier now than then)
Had to do the deeds of undaunted men,
And when higher aims engrossed the heart
Than study of fashions and toilet's art.



THE OLD SEMINARY TOWERS.

A hardy race from beyond the sea
Were those ancient founders of Ville Marie !
The treacherous Sioux and Iroquois bold
Gathered round them as wolves that beset a fold,
Yet they sought their rest free from coward fears ;
Though war-whoops often reached their ears,
Or battle's red light their slumbers dispel, —
They knew God could guard and protect them well.

Look we back nigh two hundred years ago :
Softly St. Lawrence bright waters flow,
Shines the glad sun on each purple hill,
Rougemont, St. Hilary, Boucherville,
Kissing the fairy-like isle of St. Paul's,
Where, hushed and holy, the twilight falls
Or St. Helen's, amid the green wave's spray,
All lovely and calm as it is to-day.

No villas with porticos handsome, wide,
Then dotted our queenly mountain's side ;
No busy and populous city nigh
Raised steeples and domes to the clear blue sky ;
Uncleared, unsettled our forests hoar ;
Unbridged our river, unwharved each shore :
While over the waves of emerald hue
Glided, lightly, the Indian's bark canoe.

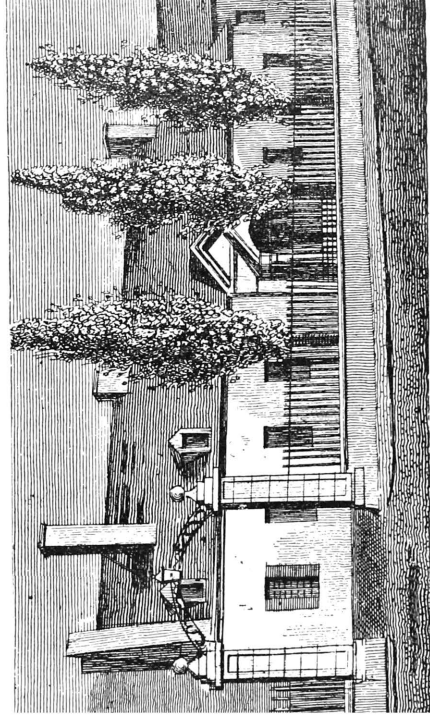
It was in those towers—the Southern one—
Sister Margaret Bourgeoys, that sainted nun,
Sat patiently teaching, day after day,
How to find to Jesus the blessed way,
'Mid the daughters swarth of the forest dell,
Who first from her lips of a God heard tell,
And learned the virtues that woman should grace,
Whatever might be her rank or race.

Here, too, in the chapel-tower buried deep,
An Indian *brave* and his grand-child sleep.
True model of womanly virtues—she—
Acquired at Margaret Bourgeoys' knee ;
He, won to Christ from his own dark creed,
From the trammels fierce of his childhood freed,
Lowly humbled his savage Huron pride,
And amid pale-faces lived and died.

With each added year grows our city fair,
The steepled church, and spacious square ;
Villas and mansions of stately pride
Embellish it now on every side ;
Buildings—old landmarks—vanish each day,
For stately successors to make way ;
But from change like that may time leave free
The ancient towers of Ville Marie !

CHÂTEAU DE RAMEZAY,

Opposite the City Hall on Notre Dame street, was known as “le vieux château,” and then as the old Government house. It was built by Claud de Ramezay shortly after his appointment as Governor of Montreal in 1704. In 1745 it was purchased from his heirs by the “Compagnie des Indes,” and thus became the *chef-lieu* of the fur trade. Shortly after the Conquest it was purchased by the Government, and was made an official residence of the Governors. During the American War and occupancy of 1775–1776 it was the headquarters of Generals Wooster and Arnold. Since then it has been put to various uses, as Government offices, Normal School,



CHATEAU DE RAMBEZAY.

Laval Law School and Court House. On several occasions its destruction has been threatened for permanent improvements. Should not the Government make the building over to the city with the proviso that it should be retained as a specimen of Old Montreal? A museum could be collected of objects bearing on the history of the city. A goodly collection of these things could yet be got together which may soon be lost.

BONSECOURS CHURCH,

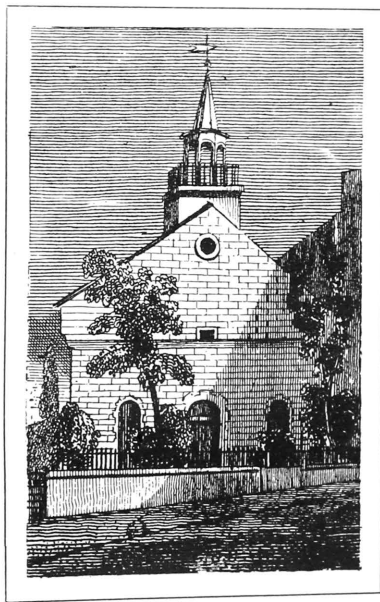
St. Paul street. Until a few years ago this church, with its cluster of small stores along the side next the Bonsecours market, was an object of much historical interest. The foundations were laid by Margaret Bourgeoys in 1658, but the building was not completed until 1675. In 1754 it was destroyed by fire and remained a ruin until 1771. It was re-dedicated in 1773, a century after its first dedication. Some years ago an intention was expressed that it should be removed, but the lovers of the antique in the city interfered and it was spared. But they might have saved themselves the trouble. Masons were set to work not to restore but to veneer the venerable pile, and it has been so modernized that nothing appears but the design of a modern architect. Still on the water front the old sacristy remains, and is well worthy a visit.

ST. GABRIEL STREET CHURCH,

Next the Champ-de-Mars, was the first Protestant place of worship in the city. A Presbyterian congregation had been formed shortly after the Conquest, and through the kindness of the Recollet Fathers were afforded a place of public worship in the Recollet church until such time as they should be able to secure a building for themselves. In 1792, this building was erected, and in it have worshipped many of those energetic Scotsmen who made Montreal famous in the early days of the new régime. A few years ago the building was purchased by the Government, and its removal has ever since been threatened.

NELSON'S MONUMENT

Jacques Cartier Square, was erected in 1809. When the news of Nelson's death reached Montreal towards the close of the year 1805, a meeting of the citizens was called and a committee appointed to raise subscriptions and arrange for the erection of a monument worthy the memory of the great admiral. At the cost of five thousand dollars, the Doric column, surmounted by the figure of Nelson, was raised, reaching to a height of seventy feet. This, with the exception of the Queen's statue on Victoria Square, is the only thing of the kind to be found in any of the public places in the city. All the old citizens famous in the annals of Montreal remained unhonored.



ST. GABRIEL, STREET CHURCH.

THE MCTAVISH MONUMENT.

About the beginning of the century, Simon McTavish commenced the erection of a residence on the slopes of Mount Royal, far surpassing in grandeur anything standing at that time in Montreal. Before its completion he died, and the building, afterwards known as the "haunted house," remained standing unfinished until twenty years ago. The obelisk erected to his memory in rear of the house may be seen close to the western wall of the Allan property.

PRIVATE HOUSES OF THE OLD RÉGIME.

Very little remains of the better class of residences during this period. Most of them have been destroyed by fire, or removed, or altered to make way for the inroads of commerce. One of the best specimens extant may be seen in St. Nicholas Street, nearly opposite the Lovell Printing offices. There the vaulted ceiling carried to the second floor may be seen.

POST CONQUEST HOUSES.

Perhaps the best specimen of this period in Montreal architecture may be found at the corner of Notre Dame and St. Peter streets. The great fire of 1765 had swept away everything from St. Peter street to the western wall, now McGill street, so everything in

that part of the city may be classed as modern. In 1767 this building was erected by Fortier, a wealthy merchant, and much of the richness of its internal fittings remained up to a few years ago.

EDUCATIONAL INSTITUTIONS.



THE UNIVERSITY OF MCGILL COLLEGE.

In 1813, James McGill, a merchant who had done business for many years in Montreal, died, leaving the bulk of his fortune to the recently established Royal Institution for the Advancement of Learning, to found a college to be known by his name. A prolonged litigation prevented the institution from carrying out the details of the will until 1821. A Royal Charter was then obtained, but it was not until 1833 that the first degree (M.D.) was granted.

The college continued to struggle on, hampered for lack of means, until 1856, when it was reorganized and a large addition made to the endowment funds. Since then the munificence of the citizens has contributed to the effectiveness of the institution, until its landed property and invested funds has grown from the original gift of \$120,000 from James McGill, to over one million dollars.

The different faculties are :—

Arts—Granting the degrees, B.A., M.A. and LL.D.

Applied Science—Granting degrees of Bachelor of Applied Science, Master of Applied Science, and Master of Engineering.

Medicine—Leading to degree of M.D., C.M.

Law—With degree of B.C.L. and D.C.L.

Faculty of Comparative Medicine and Veterinary Surgery—With degree D.V.S.

Theology—Is represented by four affiliated Colleges, representing four different denominations; most of these have the power to grant the degrees of B.D. and D.D.

The Donalda College, or the Faculty of Arts for Women, has lately been amply endowed, and a building will soon be erected for its accommodation.

The new building and provision for securing all the latest appliances in Mechanical, Electrical, and Mining Engineering brings the College abreast with the first schools of learning on the Continent. The library is especially rich in Medicine and History. The Canadian Department is also worthy of mention.

McGill Normal School, connected with the College, trains most of the teachers for the Protestant Schools in the Province.

SEMINARY OF ST. SULPICE.

This institution dates back to the founding of Montreal. The Seminary in Paris was organized by Olier, with the intention of extending its operations to Montreal.

In 1647, Abbé de Quélus came out and soon secured possession of the Seigneurie of Montreal from the Associates of Notre Dame de Montreal. A school for the priests was organized, and since then it has continued to educate most of the curés for the district. A department in Philosophy, known as Montreal College, was organized in 1767, in which the training is similar to that given in the High School.

UNIVERSITY OF LAVAL.

A branch of this University, which has its head quarters at Quebec, was established here a few years ago, and seems likely to outshine the parent institution in the number of its students. It has in operation here, Faculties of Arts, Law, Medicine, and Science.

ST. MARY'S COLLEGE.

St. Mary's College, under the management of the Jesuit Fathers, was founded in 1848. In 1855 the large building on Bleury Street was erected, with accommodation for about four hundred students.

BISHOP'S COLLEGE.

The University of Bishop's College, Lennoxville, has its Medical Faculty in Montreal. Its building is on Ontario street, corner of Mance. There are at present eighteen professors and about forty students connected with the Faculty.

JACQUES CARTIER NORMAL SCHOOL.

This school, at which the teachers of most of the French Schools in the district are prepared, is under the Management of the Superintendent of Public Instruction.

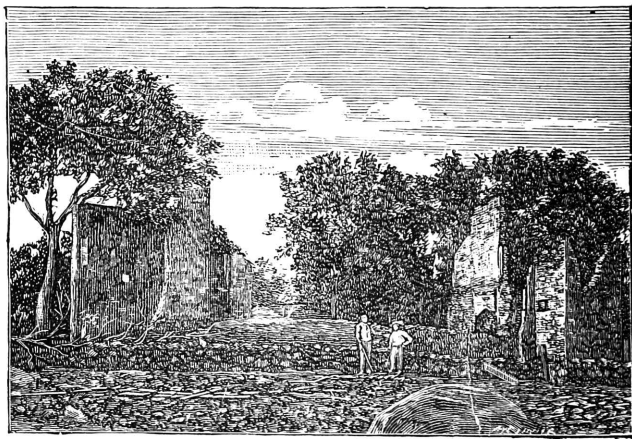
PLACES OF HISTORICAL INTEREST IN THE
VICINITY OF MONTREAL.

LACHINE.

This name was given, according to Abbé Faillon, in derision of LaSalle's "visionary" projects of discovery, and of his expectation of finding the passage to China. In 1666, a large part of the parish was granted to LaSalle, on which he built a fort and a dwelling. The latter is still standing. This place is memorable, too, for the terrible massacre in 1689 by the Indians. A force of 1,500 Iroquois surrounded the village, and killed or captured nearly all its inhabitants. On the river bank is the last of the windmills still in operation. This was the subject of a memorable litigation. The Seminary owned all the water power on the island, and erected the mill at the head of the rapids now in ruins. When the windmill was erected, they claimed that their grant covered wind power also, but in this claim they were not sustained by the courts.

CAUGHNAWAGA.

Opposite Lachine is the Indian village of Caughnawaga, where the converts made among the Iroquois were brought and settled by the Jesuits. Here, removed from the influence of their pagan surroundings, the Jesuits believed they could retain them as converts. By the English they were known as the praying Indians. The old church, the antique appearance of the buildings, with the utter want of order in laying out, is well worthy of a visit.



ST. ANNS.

This place is the scene of Moore's Canadian Boat Song. An old fort was built here by LeBers of Senneville,

who, deciding to return to France after the Conquest, sailed in 1761, in the *Augusta*, and perished when the ship was wrecked. The ruins of the old fort may still be seen on the Abbott farm.

LAPRAIRIE.

This was a flourishing town in the old times, as all trade between Montreal and the South had to be transferred here, and the old batteau men made it famous. Although the place has a decayed appearance, the ruins of an old fort are there, and the houses mostly belong to the past, for the inroads of nineteenth century architecture have made little impression on the place.

LONGUEUIL.

The Seigniori of Longueuil, by patent of Louis XIV., was erected into a barony in 1700, and Charles LeMoine, for his own bravery and that of his father, made a Baron. The Baron of Longueuil is the only one of the old Canadian titles continuing until to-day. The old fort and manor house was removed some years ago to make way for the new church.

ST. HELEN'S ISLAND.

This name was given in honour of Champlain's wife. It formed part of the Seigniori of Longueuil, and Charles LeMoine's second son received his name from the Island.

Although it has been made a public park, the northern end is retained as the only fortified point in the vicinity of Montreal. Part of the old fort can be seen when coming up the river. There is an old block house on the highest point of the island.

MAISONNEUVE.

This suburb below the city was the place of landing and capture of Ethan Allan, one of the American leaders in the war of 1776-80. He was retained a prisoner in England for several years.

VARENNES.

The old fort in this place was a scene of a brave defence by two women, Madame de Verchères and her daughter. The fort was attacked by the Iroquois when the men were at work in the fields, and so steady was their aim that the Indians retired, leaving these two women as victors. Part of the ruined fort can be seen on the point near the steamboat landing.

CHAMBLY.

The Richelieu river was the highway traversed by the Iroquois in their raids on Canada. Consequently a series of forts were erected from its mouth to the head of Lake Champlain. Of these forts, Chambly is the most interesting. It was first built in 1665, but, falling

into ruins, it was rebuilt in 1711. During the stormy times of the old régime, it was well garrisoned. In the war of 1812 and during the Rebellion, Chambly was considered an important point, but since then the fort has been neglected and allowed to fall into decay. It was for a time used as a quarry by the inhabitants, but a few years ago antiquarians came to the rescue, and the fort has been restored. A beautiful statue of De Salaberry, the hero of Chateauguay, has lately been erected in Chambly.

SAULT AU RECOLLET.

When the Island of Montreal was granted to the Associates of Notre Dame de Montréal, a stipulation was made that no fort should be erected. In the meantime the Isle Jésus was granted to the Seminary of Quebec. The branch of the Ottawa called Rivière des Prairies was the channel chosen by Indians who made the Ottawa River their highway. A post was planted here to intercept the trade and a fort built only ten years after the founding of Montreal ; but the place, not being a suitable centre of population, never grew to one of any importance.

LACHINE RAPIDS.

A trap dyke running out from Mount Royal crosses the river below Lachine, causing the obstruction known

as Lachine Rapids. And from the days of Champlain, who was the first white man to chute them, the Rapids have always been an attractive feature to those visiting the city; although now the feat, while still exciting, may be performed by steamer without danger.

BELŒIL

was one of those numerous openings in the great belt of the Utica period. It has suffered less from denudation, and is consequently higher than Mount Royal. The crater, which is about half a mile across, is filled up by a lake of clear water, from which flows a stream sufficient in volume to drive a mill. From it a beautiful view of the surrounding country can be had, and fifty years ago a pilgrimage to the summit was founded; but the large cross then erected was soon blown down, and the chapel has fallen to pieces.

ST. BRUNO.

Here midway between Mount Royal and Belœil occur a series of hills known as Boucherville Mountain. These are the result of the same belt of volcanic action as other elevations in the district. There seems to have been no single crater continuing throughout the volcanic excitement of the period, but a series of openings active for a shorter or longer time. The sites of these small craters are now occupied by seven beautiful lakes that

add a charm to the scene. One of the most successful field days of the Natural History Society was held here.

RIGAUD.

On the top of a hillock to the east of the village is a rectangular barren patch of boulders surrounded by higher land covered by vegetation. The area of this patch is about 100 by 200 yards, and shows a series of ridges as furrowed by an immense plough, and is known as *le gueret*. These ridges are about eighteen to twenty-four inches deep and three or four feet apart; they are composed of well-rounded boulders from three to twelve inches in diameter. These boulders lie thickly piled to a considerable depth (over fifteen feet of excavation shewed no diminution of the boulders), among which the trickling of a brook may be heard running below. Boulders of the same kind cover the surface of the country for some distance round.

THE GEOLOGY OF MONTREAL AND VICINITY.

While scientific study was stimulated in no small degree by the Natural History Society, organized in 1827, geological research may be said not to have made any great advance in Montreal until the advent of Sir William Logan. It was through his instrumentality that the Provincial Geological Survey was established, and Montreal made its headquarters. Although since removed to Ottawa, the Geological Museum thus formed became an educator of the people, and geological study has been carried on in McGill University, and in the Peter Redpath Museum connected with it, which has the best geological collection in Canada for educational purposes.

The rocks in the vicinity of Montreal belong mainly to the Cambrian and Silurian periods, overlaid in most places by the Pleistocene. The different formations appear as sea margins, skirting the shores of the original Laurentian Continent stretching away to the North. This Continent having been gradually pushed up, enlarged its borders with each successive era.

I. POTSDAM.—A bed of this rock crops out at St. Anns, in which the most characteristic fossil is *Scolithus Canadensis*, Billings, now well ascertained to be worm burrows. Similar beds are found at Beauharnois, on which the tracks of crustaceans appear with rain drops and ripple marks. Some of these beds occur of a thickness suitable for pavements, and they have been to a limited extent worked for that purpose.

II. CALCIFEROUS.—Overlying the Potsdam at St. Anns, an outcrop of this formation occurs in which species of *Murchisonia*, *Pleurotomaria* and *Ophileta* are the most prominent fossils. As the stone seems unsuitable for economic purpose, it has not been quarried.

III. CHAZY.—Beds of this formation occur about two miles to the North of Montreal. It is a deeper sea deposit than the two former, in which *Brachiopods* are the prevailing fossils, with *Rhynchonella plana* and several species of *Orthis* as the most abundant forms. Quarries were in early years opened in these beds, but the stone weathers to a brownish colour. These quarries are, therefore, now worked for foundation stone and rock-faced masonry.

IV. BLACK RIVER—There is a fine exposure of these rocks at Point Claire near the station. Fossils are very abundant, and much more varied than in the chazy. *Tetradium fibratum* is everywhere present, occurring

in large masses. Much of the stone used in building the piers of the Victoria Bridge was quarried from this place.

V. TRENTON.—Montreal owes much of the beauty and solidity of its buildings to this formation. Although covered by the Pleistocene, it is mainly the formation on which the city is built. Quarries have been opened out at different points from which the bulk of the building stone used in the city is obtained. This stone, before coal came into general use, retained its fresh appearance for a long time, which freshness strangers visiting the city were not slow to note. The quarries at the Mile End afford a fine field for the geologist as the rocks are rich in fossils. Corals, such as various species of the family *Monticuliporidae*, are most abundant, with *Crinoids*, *Brachiopods*, *Cephalopods* and *Trilobites* in great variety.

VI. UTICA.—This is a black shale found on Moffat's Island and along the banks of the river opposite the city. It cracks in every direction, and falls to pieces if exposed to frost when saturated with moisture. In some beds *Graptolites* and small *Orthoceratites* occur, but other fossils are rare. The eruptive mass composing Mount Royal dates from about this time, but volcanic action continued till the close of the Silurian, as also were the eruptive rocks at Rigaud, St. Bruno,

Belceil, Mount Johnson and Yamaska. The cone of Mount Royal must have been raised to a considerable height, with its base extending beyond St. Helen's Island. Horizontal sheets and vertical dikes alternating with the shale may be seen on Moffat's Island, and St. Helen's Island opposite the city. Fissures were opened up in the Trenton limestone and filled with lava radiating towards all points from the mountain, while the limestone close to these dikes and to the mountain is altered into a lighter coloured and more crystalline rock, with joints in different directions, and from which nearly all the fossils are obliterated. On St. Helen's Island large masses of breccia are exposed, composed of stones thrown by the volcano from the different formations through which it passed. Quarries have been opened up in some of the eruptive rocks near the city by the Corporation, where much of the material used in macadamizing the streets is now obtained.

VII. LOWER HELDERBERG.—A few small patches of this formation occur on the south shore of St. Helen's Island, in which many of the fossils usual to the period are found. As these patches are traversed by dikes it may be inferred that Mount Royal was still an active volcano. We have no trace of any of the intervening periods until the Pleistocene. During the Devonian, Carboniferous and Mesozoic a grand continental period

continued, all traces of which have been removed by denudation.

VIII. BOULDER CLAY.—When foundations are dug in the lower part of the city and along the first ridge above Craig Street, the Boulder Clay is struck, indicating glacial deposit. The rocks when uncovered at the quarries show by their striæ the marks of ice action.

IX. LEDA CLAY.—This overlies the Boulder Clay in the upper portions of the city. Many recent shells now inhabiting the Arctic seas are found in the beds, especially in the upper layers. It is from this clay that most of our bricks are made.

X. SAXICAVA SAND.—This is named from its most characteristic fossil, which around the quarries is so abundant that the soil thrown out from excavations in this deposit is nearly white. This sand was formerly used for building purposes.

Deposits containing recent fresh water shells are found in excavating different parts of the city, shewing that marsh land abounded here in former times.

THE BOTANY OF MONTREAL.

Montreal has been more or less intimately identified with the progress of botanical science in Canada from a very early period in the history of the country. From the latter part of the seventeenth century, it has been a centre about which there have gradually gathered many features of interest, which cannot fail to attract the attention of students from other localities. This has resulted in part from occurrences which are historical; in part from the peculiar situation and physical characteristics of the island itself, and also in large part from the advances which have been made in Canadian botany at this point, within the last few decades, under the direct patronage of the large and influential educational institutions gathered here.

From the first settlements until near the close of the seventeenth century, the seat of government being almost exclusively at Quebec tended to concentrate learning at that point, which is permanently associated with the names of Sarrasin and Gauthier, and with the names of many others who have left a well-defined impression upon the development of Canadian botany.

The peculiar situation of Montreal and its natural advantages, and consequent upon these conditions the gradual formation here of a separate governing body, soon led to its becoming the focus upon which were concentrated the efforts of men who gave a decided impulse to the study of the surrounding flora, and permanently connected Montreal with the future growth of the then infant science.

The Franciscan Hennepin was probably the first to give a somewhat connected though not always reliable account of the plants of this district. His narrative, covering the period from 1679 to 1682, was followed about forty years later by the more reliable and extensive and well-known records of the Jesuit Charlevoix. This zealous missionary gave the first authentic account of the manufacture of maple sugar as prepared by the Indians. In addition to noting the distinction of our native species, he shrewdly observed several also belonging to the Old World flora; though he made the rather serious mistake of confounding squashes and pumpkins, as grown by the Indians, with the musk and water melons of Europe—an error which was repeated by later and even more distinguished naturalists.

The discovery of ginseng in this vicinity by the Jesuit Lafitau in 1716 gave an important impulse to the commerce of Montreal for a number of years, the roots of this plant being exported in large quantities.

In 1749, the Swedish botanist, Peter Kalm, a student of Linnæus, stayed for some time at Montreal, and made it his base of operations for more extended explorations into the interior and down the St. Lawrence. The record of his work here is of very considerable importance as bearing upon the local flora and upon introduced species, several of which he noted at that early date as becoming well established. He also observed a number of indigenous plants which have since become extinct in this neighborhood.

A little more than forty years later, Michaux visited Montreal, and afterwards penetrated east and north ward to Hudson's Bay, making discoveries of very considerable botanical interest.

Within the present century, the German botanist Pursh took up his residence at Montreal, making it the point of departure for his well-known expeditions throughout the country. After a residence of several years, he died here, and his remains were interred in the old cemetery on Papineau road, where they suffered much neglect for many years. Through the efforts of the late Dr. Barnston and the Botanical Society of Montreal, they were finally moved to a more fitting resting place in Mount Royal Cemetery, where a monument was erected to the memory of him who had done much to advance the science in the cause of which he laid down his life. An account of the life and work of Pursh may

be found in the *Canadian Naturalist*, New Series, vol. IX., p. 184.

Prominent among the botanists of this century who have given Montreal more than local interest should be mentioned the late Dr. A. F. Holmes, who was the first occupant of the chair of Botany in the Medical Faculty of McGill University. He was a most diligent and enthusiastic collector, and his Herbarium, which now constitutes a very important part of the Herbarium of McGill University, is a very valuable one. It embraces more than one thousand species collected chiefly in the immediate vicinity of Montreal between the years 1820 and 1826. Particular interest attaches to these plants from the fact that the greater number were obtained from localities which have long since become occupied by factories and dwellings, many of them in places where the heart of the city stands to-day. The collection also contains many introduced species.

At the present time, interest in botanical studies is centered in our various educational institutions, some of which possess important collections, and are more or less thoroughly equipped for the prosecution of advanced work in this branch of Natural Science. The resources thus placed at the disposal of the student have received an important addition in the recent establishment of a Botanic Garden by McGill University. The rapid multiplication of private conservatories within the past few

years, and the valuable work of the Montreal Horticultural Society, have done much to stimulate an interest in plants, both as to their cultivation and scientific study.

The Island of Montreal is situated in about $45^{\circ} 31'$ of N. latitude. It presents a great diversity of soil and exposure, particularly in the immediate vicinity of the city. This has the effect of concentrating within narrow limits a somewhat wide range of species, which in other parts of Canada are widely scattered, and the Island as a whole may, therefore, be regarded as an epitome of the various botanical conditions of the whole central region of Canada.

The very diversified character of the flora about Montreal is one of the first things to impress itself upon the student and attract the attention of strangers, and it is this fact among many others which has lent such a peculiar charm to the beautiful mountain upon whose side the city rests. An additional feature of importance is also to be found in the presence of Old World species which have escaped from cultivation, and, becoming spontaneous, have spread rapidly, often to the serious disadvantage of the farmer. Others, brought hither as seeds in refuse, or with the seeds of other plants, have gained but a precarious hold, and are to be found only in isolated localities, to which they cling with great tenacity, but beyond which they appear incapable of

extending. Numerous instances of this kind occur in the vicinity of Montreal, of which one or two of the more conspicuous will serve as an illustration. The orange hawkweed (*Hieracium aurantiacum*) is not infrequent along roadsides, and has been observed extending far into the Eastern Townships along the United States boundary. The daphne (*Daphne mezereum*) of Great Britain has for some years occupied a small and isolated station on Mount Royal, beyond which it appears to be incapable of extending. A few years since an isolated case of the dwarf elder (*Sambucus elubus*) was brought to my notice as occurring at Cote St. Antoine, where it had established itself upon a heap of rubbish for several years.

That the climate of Montreal is not too severe for the growth of many plants from other parts of the world, and even from more southern latitudes, is evident from the fact that there are now established here fine and thrifty specimens of the salisburia (*Ginkgo biloba*) from Japan, and of the katsura (*Circidiphyllum japonicum*) from the same place; as well as the catalpa (*Catalpa speciosa*) from the Middle United States.

The flora of this district has undergone, and is still undergoing, changes which have greatly modified its character since the time of Charlevoix and Lafitau—changes of considerable importance to the student of

botany who is concerned in tracing the influence of man upon the distribution of species, and the relation of such dispersion to climatic conditions. No systematic study of the botany of the Island of Montreal has been made since Dr. Holmes collected in 1820. Were such a work to be undertaken at the present time, it would, for many reasons, prove of very considerable value.

The earliest spring flowers are to be found on the eastern slope of Mount Royal, where the bold face of the mountain overhangs the road leading past the upper reservoir. A much greater variety, and many of them quite as early, may be found by taking the path which leads from the incline railway station to the Protestant Cemetery. A little more than one hundred yards after leaving the Park road, one turns from the main path to the left, following what is known as Friar's Walk. The path shortly leads between the slope of the mountain and a low hill on the right. Here are to be found a great variety of ferns, and in their season, some of the most charming of spring flowers, such as the spring beauty, the great trillium and the golden yellow bellwort. From this point into the lower lands towards Outremont, or along the slopes past the Protestant and on towards the Catholic Cemetery, one may find a variety of exposures and soil conditions which afford a great diversity of species.

The literature bearing directly upon the flora of Montreal is not very extensive. One of the most complete

publications is a "Catalogue of Canadian Plants in the Holmes Herbarium in the Cabinet of the University of McGill College." This list was prepared by the late Dr. James Barnston, and appeared in the *Canadian Naturalist* for 1859. This latter publication also contains scattered papers bearing more or less directly upon the botany of this district. Apart from the larger works, such as Hooker's *Flora Boreali Americana*, Macoun's Catalogue of Canadian Plants, and the works of Michaux and Pursh, the Manuals of Canadian botany, by the Abbé Moyon and the Abbé Provancher, will be found most useful guides, though Gray's Manual comprises nearly if not quite all the indigenous species likely to be found in this vicinity.

RECEPTION.

The Reception and Invitation Committee will receive the Royal Society and Associate Members in the William Molson Hall,* McGill College, on Wednesday, May 27th at 10 a.m.

ENTERTAINMENTS AND EXCURSIONS.

The Committee on Entertainments and Excursions will do all in their power to provide for the leisure moments of the distinguished guests attending the annual meeting in this city.

Montreal and its immediate vicinity has many points of interest, not only to the tourist on pleasure bent, but also to the scientist seeking for information. It is almost impossible, so early in advance, to precise a list of entertainments and excursions, and the Committee therefore can only indicate in a general manner what they intend doing.

Carriages will be provided to convey the members and associates to the summit of Mount Royal Park, whence, after enjoying a view of the city and surrounding coun-

try, they will continue their drive around the second mountain, and by Notre Dame de Grâce back to the city.

To many, a trip to Lachine and down the far-famed rapids will be an interesting novelty.

The town of Caughnawaga, where live in peace and prosperity the descendants of the Iroquois tribe of Indians, will furnish an opportunity of studying the care taken by the Federal Government in securing the comfort and happiness of its Indian wards.

If possible, the Committee will arrange for a trip either to Rigaud, where "*Les Guérêts*" can be seen, or to Belœil, St. Bruno, Chambly or St. Anns.

As all these points of interest are near Montreal, and are easy of access by rail or by boat, they will prove an agreeable relaxation from the more serious and important features of the meeting.

Garden parties will also be tendered the guests by some of the leading citizens of Montreal; the Natural History Society will hold a reception at McGill University, and a *conversazione* will be held in the Art Gallery of Montreal.

HOTELS AND LODGINGS.

The City of Montreal has gained an enviable reputation, not only for the excellence of its hotels and lodging houses, but also for the hospitality of her citizens.

In this age of ease and luxury, no city can offer a better recommendation to intending visitors than the assurance of good accommodation. The Committee on Hotels and Lodgings, realizing the importance of the work assigned to it, are fully determined that nothing shall be left undone on their part that will in any way contribute to the comfort of members of the Royal Society, or those of its friends, who may attend at the approaching meeting as our guests.

Arrangements are being made to enable those who may so desire to secure comfortable quarters at reasonable prices either at hotels or lodging houses convenient to the places of meeting.

It is also proposed to keep a Directory wherein the names and addresses of all those attending the meeting will be registered, and thus members and associates will be enabled to communicate one with another without delay. To facilitate the work of the Committee in this direction, intending visitors are respectfully requested to send their names and addresses to this Committee at as early a date as possible. All communications to the Committee on Hotels and Lodgings should be addressed to its Secretary, Dr. Lovejoy, 2428 St. Catherine St., Montreal.

CONVEYANCE.

Arrangements have been made by which ladies and gentlemen from a distance, desiring to attend the meet-

ings of the Society, can obtain fares from the various Railways at the following rates :

Intercolonial Railway.—Return tickets will be granted on this Road at a single fare to its terminus at Levis, to which will be added the proportion charged to Montreal by either the Grand Trunk or Canadian Pacific Railways.

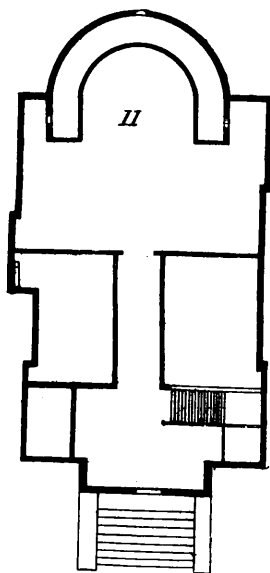
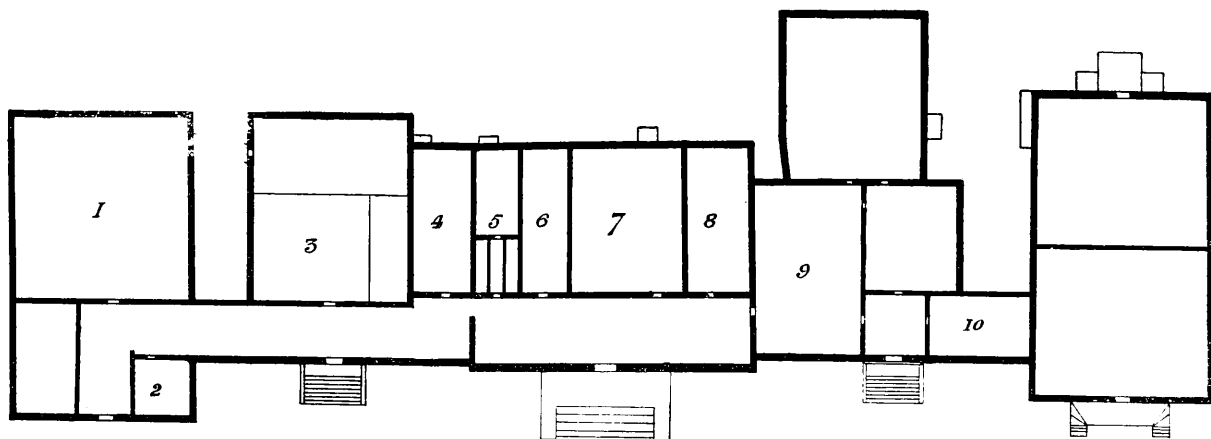
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Section III.—Mathematical, Physical and Chemical Sciences	“ “ 9
Section IV.—Geological and Biological Sciences (in Redpath Museum)	“ “ 11

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