

1899
W.P. 1898
415411

THE Nova Scotian
Institute of Science
LIBRARY,
HALIFAX, N. S.
Canadian Society of Civil Engineers.

112 MANSFIELD STREET, MONTREAL.

(Established Feb. 24, 1887; Incorporated by Dominion Act, June 23, 1887)

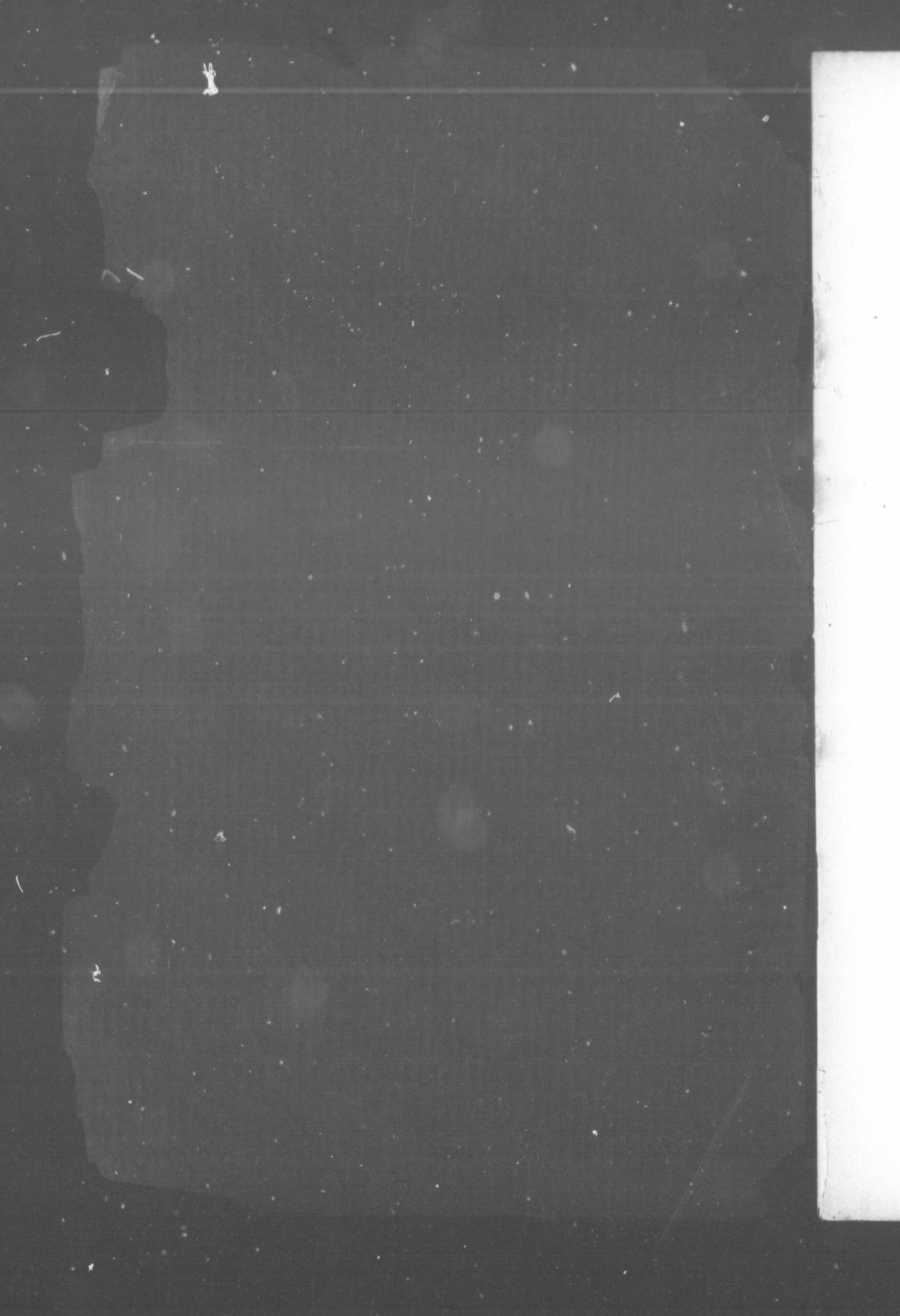
(50 VIC. CAP. 124.)

Report of Annual Meeting

1899.

Montreal:
PRINTED FOR THE SOCIETY,
BY JOHN LOVELL & SON.

The right of publication and translation is reserved.



H/54/1

REPORT OF PROCEEDINGS.

ANNUAL GENERAL MEETING.

January 10, 1899.

KENNET W. BLACKWELL, Vice-President, in the Chair.

The meeting was called to order at 10.30 a.m.

A telegram was read from the President regretting his inability to be present.

The Secretary read the notice convening the meeting.

The minutes of the Annual General Meeting, held on January 11th and 12th, 1898, were read and confirmed.

The following were appointed scrutineers of the ballot for the election of Officers and Members of Council:

Messrs. L. Skaife, F. W. Cowie and F. T. St. George.

The following were appointed scrutineers of the ballot for the election of the Nominating Committee:

Messrs. J. W. Heckman, C. deB. Leprohon and G. A. McCarthy.

The Chairman made the following announcements:

A train, provided by the Grand Trunk Railway System, to visit the new Victoria Bridge, will leave Bonaventure Station promptly at 2 p.m.

The evening meeting will commence at 8 p.m., and will be open to ladies. At this meeting photographic views of various details of the construction of the Victoria Jubilee Bridge, and the methods adopted in the work, will be exhibited by lantern projection. Mr. Joseph Hobson, the Chief Engineer, will be unable to be present to deliver an address upon the subject of the Bridge, but the views will be explained by Mr. W. McNab, Assistant Engineer of the Grand Trunk Railway System, and Librarian of the Society.

The excursion to Grande Mere by special train provided by the Canadian Pacific Railway Co. will leave Viger Square Station at 8.15 a.m. on Wednesday, and returning is expected to leave Grande Mere at about 3 p.m.

The Members' Dinner, for which arrangements have been made at the Windsor Hotel, will be held on Thursday evening at 8 p.m. Members will kindly procure their dinner tickets to-day.

The meeting was then adjourned.

Report of Annual Meeting of

EVENING MEETING.

TUESDAY, January 10th, 1899.

K. W. BLACKWELL, Vice-President, in the Chair.

Mr. W. McNab, Librarian, Assistant Engineer of the Grand Trunk Railway System, delivered an address on the construction of the new Victoria Bridge. The address was very fully illustrated by lantern projection. On its conclusion, a hearty vote of thanks was tendered to the lecturer on motion by Mr. E. H. Keating, seconded by Mr. C. P. Baillairge. The thanks of the Society were also given to Mr. F. Redpath for the loan of his projection lantern, and for his services during the evening.

Dr. H. T. Bovey, on behalf of McGill University, invited the members attending the meeting to visit the engineering buildings of McGill College, especially the new Mining and Chemistry Building.

WEDNESDAY, January 11th, 1899.

The day was occupied in visiting the works of the Laurentide Pulp Company at Grande Mere, Que., the members having been conducted there over the lines of the Canadian Pacific Railway and Northern Railway in a special car very generously provided by the Canadian Pacific Railway Company. About one hundred and fifty members took part in the excursion, and were met on their arrival by Mr. R. A. Alger, Jr., and other representatives of the Company. Under Mr. Alger's direction the party was shown over the works, and afterwards entertained at luncheon. The train reached the city at about 8 p.m.

THURSDAY, January 12th, 1899.

The meeting was called to order at 10 a.m., Mr. G. H. Duggan, Member of Council, in the Chair.

Mr. Thomas Monro, Past President of the Society, read a paper on the construction of the Soulanges Canal from Cascades Point to Coteau Landing. The paper was illustrated by lantern projection. A general discussion took place at the conclusion of the paper, and the thanks of the Society were unanimously tendered to Mr. Monro.

The meeting then adjourned.

Cold luncheon was served in the social rooms of the Society, and the meeting was again called to order at 2 p.m., Mr. K. W. Blackwell in the chair, to hear a paper on the Trent Valley Canal by Mr. R. B. Rogers. This paper was also illustrated by lantern projection. The thanks of the Society were tendered to Mr. Rogers for

his very interesting paper, and to Mr. F. Redpath, through whose kindness the lantern views were shown.

A paper on "Montreal, Ottawa and Georgian Bay Canal Navigation," by Mr. H. K. Wicksteed, was, in the absence of the author, read by Mr. G. A. Mountain.

By resolution, all of the papers read at this meeting will appear in the Transactions of the Society, together with discussions thereon.

On Thursday evening, January 12th, a Members' Dinner was held in the Ladies' Ordinary of the Windsor Hotel, at which about eighty Members were present.

FRIDAY, January 13th, 1899.

The meeting was called to order at 10 a.m., Mr. K. W. Blackwell, Vice-President, in the Chair.

The Secretary read the Annual Report of Council, the Treasurer read his statement, and the Librarian the Report of the Library Committee.

REPORT OF COUNCIL FOR THE YEAR 1898.

ANNUAL MEETING, JANUARY 10TH, 1899.

The Council begs to present the following report on the work of the Society during the past year.

ROLL OF THE SOCIETY.

The elections in the ordinary course comprised *eight* members, *twenty-one* associate members, *two* associates, and *twenty-two* students, in all *fifty-three*. *Three* associate members have been transferred to the class of member, and *eight* students to the class of associate member. *One* associate member and *one* student, removed from the roll for non-payment of dues, have been re-instated upon payment of their arrears. The elections under the Quebec Act, Vic. 61, Chap. 32, comprised *four* members, *fifty* associate members, and *one* student, in all *fifty-five*. *Five* students were admitted as associate members under the Quebec Act. Resignations have been received from *two* members, *two* associate members, *one* associate, and *one* student.

The deaths have been:—

Honorary Members:—Sir John Fowler, Bart., K.C.M.G., LL.D.

Members:—Col. Sir C. S. Gzowski, A.D.C., K.C.M.G., William Kingsford, LL.D., and Joseph DeGurse.

Report of Annual Meeting of

At present the membership stands as follows:—

	Non-Res.	Res.	Total.
Honorary Members..	5	2	7
Members..	238	56	294
Associate Members..	150	82	232
Associates..	28	13	41
Students..	58	44	142
Total			<u>716</u>

At the same date last year:—

	Non-Res.	Res.	Total.
Honorary Members..	6	2	8
Members..	231	53	284
Associate Members..	126	35	161
Associates..	28	13	41
Students..	99	35	134
Total..			<u>628</u>

At the time of the last Annual General Meeting there were nine new applications, and at the present time there are pending eighty-seven applications for admission into the Society in the ordinary course.

ANNUAL MEETING.

The Twelfth Annual Meeting was called to order at 10 o'clock a.m. on Tuesday, January 11th, 1898. In the absence of the President, Mr. T. C. Keefer, Mr. G. H. Duggan, Vice-President, presided. The scrutineers for the ballots were appointed and announcements in connection with the meeting were made. The meeting then adjourned, and the members, by invitation of the Royal Electric Company of Montreal, spent the remainder of the day in visiting the works of the Chambly Manufacturing Company at Chambly, where they were also hospitably entertained by the Royal Electric and Chambly Manufacturing Company.

On Tuesday evening a Members' Dinner was held in the Windsor Hotel, Mr. G. H. Duggan, Vice-President, in the Chair, Mr. C. E. W. Dodwell acting as toast-master. The evening proved to be a most agreeable one, and brought out a large number of members.

The meeting re-assembled on Wednesday, January 12, at 10 a.m., to hear the report of the Council and transact the general business of the Society.

ORDINARY MEETINGS.

Fourteen ordinary meetings were held during the year, at which the following papers were read:—"Sewage Disposal by Subsoil Irrigation," by E. Mohun, M.Can.Soc.C.E.; "Impulse Water Wheels,"

The Canadian Society of Civil Engineers.

5

by J. T. Farmer, Stud.Can.Soc.C.E.; "Main Gut Lift Span," by W. Chase Thomson, A.M.Can.Soc.C.E.; "Electrical Power Transmission," by R. A. Ross, M.Can.Soc.C.E.; "Meters," by W. C. Brough, M.Can.Soc.C.E.; "Belting, with Tests of Rubber, Leather and Cotton," by G. R. Macleod, Stud.Can.Soc.C.E.; "Wind Stresses in a Three Hinged Arch," by F. P. Shearwood, A.M.Can.Soc.C.E.; "The Hydraulic Laboratory at McGill," by Prof. H. T. Bovey, M.Can.Soc.C.E.; "The Commercial Aspect of Electrical Transmission," by G. White Fraser, M.Can.Soc.C.E.; "Recent Experiments on Riveted Joints," by Prof. J. T. Nicolson, M.Can.Soc.C.E.; "A Masonry Pier moved by Ice and Replaced," by R. W. Leonard, M.Can.Soc.C.E.; "Disputed Points in Road Construction," by H. Irwin, M.Can.Soc.C.E.

SPECIAL GENERAL MEETING.

A special general meeting was held on Thursday, Dec. 8, 1898, in accordance with By-Law 44 B, for the purpose of providing for certain expenses in connection with the Annual Meeting.

PROFESSIONAL STATUS.

Although it is not referred to in the Report of Council for last year, the Act concerning Civil Engineers in the Province of Quebec became law on Jan. 8th, 1898, and was so reported to the Society at the last Annual Meeting. This Act is now known as Vic. 61, Chap. 32, of the Statutes of the Province of Quebec. No further legislative enactments have at this date been obtained.

In the Province of Nova Scotia an Act was brought before the Provincial Legislature during its last session, but, owing to local conditions, was not passed.

In the Province of Ontario several conferences have been held with the Ontario Land Surveyors, and the Provincial Committee has drafted a bill based upon the Quebec Act and corresponding to it in essential features, which it is hoped will meet with the approval of the Government and become law during the next session. The Committees in charge of legislation are as follows:—

Central Committee.—Messrs. P. W. St. George, W. J. Sproule, H. Irwin and C. H. McLeod.

Nova Scotia.—Messrs. M. Murphy, C. E. W. Dodwell, W. G. Matheson and H. S. Poole.

New Brunswick.—Messrs. Hurd Peters, P. S. Archibald and H. R. Lordly.

Quebec.—Messrs. St. Geo. Boswell, L. A. Vallee, E. Marceau, T. Breen and J. M. McCarthy.

Ontario.—Messrs. W. Chipman, A. L. Hertzberg, M. J. Butler, E. H. Keating and C. H. Rust.

Manitoba.—Messrs. H. N. Ruttan, G. H. Webster and J. Woodman.

N. W. Territories.—Messrs. W. D. Barclay, G. A. Stewart and W. T. Thompson.

British Columbia.—Messrs. H. J. Cambie, A. J. Hill, H. Abbott, F. C. Gamble and E. A. Wilmot.

The Council desires to point out that hereafter all persons desirous of practicing as Civil Engineers in the Province of Quebec should become members of the Society under the provisions of the Quebec Act, *i.e.*, they should pass the examinations therein prescribed and otherwise conform to the requirements of the Act.

In accordance with the requirements of the Act, a Board of Examiners has been constituted, and is as follows: Messrs E. Marceau, R. J. Durley, T. Breen, C. H. McLeod, R. S. Lea and Prof. F. S. Duval. No examinations have yet been conducted, as no candidates have applied for admission except under Articles 2 and 3, which provided for practicing engineers and land surveyors joining during the year 1898. This avenue of access to the Society is now closed, except as regards Provincial Land Surveyors, who were practicing at the time of the passing of the Act.

BY-LAWS OF THE SOCIETY UNDER THE QUEBEC ACT.

A revised copy of the By-Laws of the Society to meet the conditions of the Quebec Act was presented to the Lieut.-Governor in Council on June 13 last.

ROOMS.

Notice has been given to the agent of the Bank that the Society will not continue to occupy the present rooms after May 1 next. While the Rooms are fairly well suited to the present requirements of the Society, the Council was compelled to take the course which it did, owing to the refusal of the agent to make certain improvements in the lighting of the stairway giving admission to the Rooms.

EMPLOYMENT REGISTER.

As per notices which have been distributed amongst the members, a register is now kept in the Rooms of the Society, of members desiring employment, and also of applications on the part of those desiring to engage engineers.

INVITATION TO MEMBERS OF THE SOCIETY FROM THE INSTITUTION OF CIVIL ENGINEERS.

In a letter addressed to the President and Council of this Society, the Institution of Civil Engineers has extended an invitation to our Members in the following terms:—

"In view of the intended International Exhibition in Paris in the year 1900, it has appeared to the Council of this Institution not unlikely that some of the members of your Society may visit Europe in a more or less organized party in that year.

"We are desired by the Council of this Institution to say that, should such a step be taken, and should your members be able to visit England, the Institution of Civil Engineers would wish to welcome its professional brethren in Canada with a warm greeting, to receive them at the house of the Institution, and in such other ways as may be found agreeable to take advantage of such a valued opportunity of testifying their regard for the members of your Society."

Signed, J. WOLFE BARRY,
President.

J. H. T. TUDSBERY,
Secretary.

DEATH OF SIR CASIMIR GZOWSKI, PAST-PRESIDENT.

The Council desires to make special reference to the loss which the Society has sustained in the death of our late President, Col. Sir Casimir Gzowski, A.D.C., K.C.M.G. Sir Casimir, as is well known, was the Founder of the only medal in the gift of the Society. By his liberality in this direction, as well as by his generous contributions towards the general funds of the Society and his wise counsel and advice, he has done much to advance the highest interests of the Society.

ACTION AS TO ADMISSION FEE.

It has been decided, in view of By-Law 24, that it was not expedient to put into operation during the past year the By-Law adopted at the last Annual Meeting, requiring an admission fee of \$20. This By-Law is, however, now in full force, and in future all persons seeking admission in the ordinary course above the grade of student will be required to pay an admission fee of \$20 in addition to the annual subscription. Under the Quebec Act the admission fee for students is twenty dollars and for associate members forty dollars.

The Treasurer's statement of receipts and expenditure for the year is appended hereto.

P. W. ST. GEORGE, *Vice-President.*
C. H. McLEOD, *Secretary.*

REPORT OF LIBRARY COMMITTEE.

The Library Committee held five meetings during the year.

It is gratifying to note that the Library has been consulted more during the past year than in any previous one. However, it is still very deficient in recent standard works on the various branches of Engineering. This is the more apparent from the number of enquiries for such works.

The belief is entertained by the Committee that many members have volumes on Engineering subjects which they could conveniently spare. Such would be a valued acquisition to our shelves, and enhance the usefulness of the Library to both resident and non-resident members. Any members desiring to make donations to the Library should communicate with the Secretary or Librarian beforehand, in order that duplicate volumes may not be presented.

The reading table is well supplied with technical journals, as will be noted from the following list, and the smoking-room has been supplied with a number of periodicals of a lighter character.

Donations to the Library have been received from the following:— Messrs. A. F. Stewart, M.Can.Soc.C.E.; S. P. Robins, Stud.Can.Soc.C.E.; John Kennedy, Past-President; C. A. Bigger, A.M.Can.Soc.C.E.; E. J. Boswell, Stud.Can.Soc.C.E.; J. W. Haldane, C.E.; U. Cummings, W. F. Stanley, N. Hanson Greene, A.M.Can.Soc.C.E.; pamphlets from Messrs. R. Hering, M.Can.Soc.C.E.; W. B. Dawson, M.Can.Soc.C.E.; W. R. Hill and A. Potter, A.M.Can.Soc.C.E.

Exchanges have been effected during the year with the following:
Engineering Record, *New York*.

New England Water Works' Association, *Boston*.

The undermentioned is a complete list of the periodicals, magazines, Transactions, etc., regularly received, and on file in the Library:—

American Architect and Building News, *Boston*.

American Engineer and R. R. Journal *New York*.

American Institute of Electrical Engineers, Transactions, *New York*.

American Institute of Mining Engineers, Transactions, *Philadelphia*.

American Society of Civil Engineers, Transactions, *New York*.

American Society of Irrigation Engineers, Transactions, *Denver*.

American Society of Mechanical Engineers, Transactions, *New York*.

Association of Engineering Societies, Transactions, *New York*.

Association of Industrial Engineers, Transactions, *Barcelona*.

Austrian Engineers and Architects Society, Transactions, *Vienna*.

Boston Public Library, Bulletin, *Boston*.

Bureau of Mines, Reports, *Toronto*.

Canadian Engineer, *Toronto*.

- Canadian Institute, Transactions, *Toronto.*
Cassier Magazine, *New York.*
Civil Engineers' Club of Cleveland, *Cleveland, O.*
Cleveland Institute of Engineers, Transactions, *Middlesborough.*
Cornell University, Bulletin, *Ithaca, N. Y.*
Electrical Age, *New York.*
Electrical Engineer, *London.*
Electrical Engineering, *Chicago.*
Electrical News, *Toronto.*
Electrical Review, *London.*
Electrical Review, *New York.*
Engineer, *London.*
Engineering, *London.*
Engineering Association of New South Wales, Transactions, *Sydney.*
Engineering Association of the South, Transactions, *Nashville, Tenn.*
Engineering Magazine, *New York.*
Engineering and Mining Journal, *New York.*
Engineering News, *New York.*
Engineering Record, *New York.*
Engineers' Association of Western Pennsylvania, Transactions,
Alleghany, Pa.
Engineers Club of Philadelphia, Proceedings, *Philadelphia.*
Engineer's Gazette, *Newcastle-on-Tyne.*
Franklin Institute, Journal of, *Philadelphia.*
Geological Survey of Canada, Reports of, *Ottawa.*
Hanover Architects' and Engineers' Society, Transactions, *Hanover.*
Hungarian Society of Civil Engineers, Transactions, *Buda-Pesth.*
Illustrated London News.
Indian Engineering, *Calcutta.*
Industries and Iron, *London.*
Institution of Civil Engineers, Transactions, *London.*
Institution of Civil Engineers of Ireland, Transactions, *Dublin.*
Institution of Electrical Engineers, Transactions, *London.*
Institutions of Engineers and Shipbuilders in Scotland, Transactions,
Glasgow.
Institution of Mechanical Engineers, Transactions, *London.*
Iron and Steel, *Chicago.*
Iron and Steel Institute, Transactions, *London.*
Ironmonger, *London.*
Journal of the U. S. Artillery, *Fort Monroe, Va.*

- Junior Engineering Society, Transactions, *London*.
 La Revue Technique, *Paris*.
 Liverpool Engineering Society, Transactions, *Liverpool*.
 Locomotive Engineering, *New York*.
 McClure's Magazine.
 Manchester Association of Engineers, Transactions, *Manchester*.
 Marseilles Scientific and Industrial Society, Transactions, *Marseilles*.
 Mechanical Engineer, *Manchester*.
 Mechanical World, *Manchester*.
 Midland Institute of Civil, Mechanical and Mining Engineers
 Transactions, *Barnsley*.
 Mining Institute of Scotland, Transactions, *Hamilton*.
 Mining Journal, *London*.
 Mining and Scientific Press, *San Francisco*.
 Mining Society of Nova Scotia, Transactions, *Halifax*.
 Minnesota University (Year Book), *Minneapolis*.
 Modern Machinery, *Chicago*.
 Monthly Weather Review, *Washington*.
 New England Water Works Association, *Boston*.
 New York State Library, Bulletin of.
 North East Coast Institution of Engineers and Shipbuilders, Trans-
 actions, *Newcastle*.
 North of France Industrial Society, Transactions, *Lille*.
 Nova Scotian Institute of Science, Transactions, *Halifax*.
 Patent Office Library, Reports of, *London*.
 Philosophical Society of Glasgow, Transactions, *Glasgow*.
 Railroad Gazette, *New York*.
 Railway Age, *Chicago*.
 Railway and Engineering Review, *Chicago*.
 Report of Chief of Engineers U. S. Army, *Washington*.
 Royal Artillery Institution, Transactions, *Woolwich*.
 Royal Dublin Society, Transactions, *Dublin*.
 Royal Engineers Institute, Transactions, *Chatham*.
 Royal Institute of British Architects, Transactions, *London*.
 Royal Institute of Engineers, Transactions, *The Hague*.
 Royal Irish Academy, Transactions, *Dublin*.
 Royal Scottish Society of Arts, Transactions, *Edinburgh*.
 Royal Society of Canada, Transactions, *Ottawa*.
 Royal Society of Edinburgh, Transactions, *Edinburgh*.
 Royal United Service Institution, Transactions, *London*.

Sanitarian, *Brooklyn, N.Y.*
Sanitary Plumber, *New York.*
School of Mines, Quarterly, *New York.*
School of Practical Science, *Toronto.*
Society of Arts, Transactions, *London.*
Society of Civil Engineers, Transactions, *Paris.*
Society of Engineers, Transactions, *London.*
South Wales Institute of Engineers, Transactions, *Cardiff.*
Strand.
Technology Quarterly, *Boston.*
Technical Society of the Pacific Coast, Transactions, *San Francisco.*
U. S. Geological Survey, Reports, *Washington, D.C.*
U. S. Naval Institute, Transactions, *Annapolis.*
Western Electrician, *Chicago.*
Western Railway Club, Transactions, *Chicago.*
Western Society of Engineers, Transactions, *Chicago.*
Wisconsin University, Bulletin of, *Madison, Wis.*

G. H. DUGGAN, *Chairman.*

W. McNAB, *Librarian.*

CANADIAN SOCIETY OF CIVIL ENGINEERS.
ABSTRACT OF RECEIPTS AND EXPENDITURES FOR THE YEAR ENDING 31st DECEMBER, 1898.

Balance from 31st December, 1897 \$6,970 65

GENERAL RECEIPTS.

Subscriptions :—	
Arrears	\$1,287 15
Current	2,351 26
Advance	749 66
	\$4,388 07
Transactions sold	17 50
Dividend on Canada Permanent Loan Co.'s stock	4 50
Donations to Library	26 16
Donation towards expense of Annual Meeting	2 00
Bank interest on current account	46 99
Bank interest on deposit account	111 81
	\$1,597 03

BUILDING FUND.

Balance from 31st December, 1897	\$4,026 03
Ketchum bequest transferred from general fund	500 00
Interest to 31st December, 1898.	130 70
	4,656 73

\$16,224 41

H. IRWIN,
Treasurer.

GENERAL EXPENDITURE.

Transactions printed and published.....	\$ 897 10
Advance proofs.....	66 54
Printing, stationery and binding	267 95
Charter, By-laws and List of Members.....	85 25
Postage and post cards.....	176 98
Messengers and telegrams.....	29 41
Cabs, cartage, etc.....	8 70
Secretary's salary, including 7 months of 1897.....	475 00
Assistant Secretary's salary for year.....	488 07
Caretaker's wages for year.....	140 00
Caretaker for washing towels	6 00
Cost of keeping rooms open at night.....	62 00
Rent of Rooms for year	675 00
Telephone service, including 6 months of 1897.....	45 00
Bank commissions on cheques	13 22
Water rates.....	25 22
Electric lighting for year	76 69
Books and magazines and Library expenses	95 30
Expenses <i>re</i> Close Corporation.....	863 83
Expenses at meetings	20 75
Engrossing diplomas	22 50
Gzowski medal and engraving.....	11 48
Office furniture and alterations	609 38
Rent of drawer in bank vault for year.....	5 00
Amount transferred to Building Fund	500 00
Gas for grate fire	2 00
Treasurer's expenses, car fares, etc.....	4 34
Petty cash in hands of Asst. Secretary.	1 75
	\$5,674 46

BALANCES.

General Fund Treasurer	\$5,893 22
Building Fund Treasurer.....	4,656 73
	\$10,549 95
	\$16,224 41

Examined with books and vouchers, and found correct.
 K. W. BLACKWELL, }
 W. McLEA WALBANK, } *Auditors.*

12
Report of Annual Meeting of

The adoption of the report was moved by Mr. J. M. McCarthy, seconded by Mr. L. Skaife, and carried.

The Treasurer explained that there were no unpaid bills against the Society on December 31st, 1898, and so far as he knew no other liabilities; that, subsequent to that date, small accounts, amounting in all to about \$100, had come in.

The Secretary, in explanation of the item of keeping the rooms of the Society open at night, stated that it had been necessary to employ help for three evenings in the week at the rate of \$6 per month. To keep the rooms open every night during the year under the present arrangement would, at the same rate, cost \$168.

In reply to a question by Mr. E. P. Hannaford, it was stated that the attendance during the evening was steadily increasing.

Mr. E. P. Hannaford asked what had been the total expenditure to date on account of legislation and other expenses in connection with incorporation.

The Treasurer replied that the total expenditure to date was about \$1,500.

In reply also to Mr. Hannaford, it was stated that the rental of the present rooms was \$700, including fuel and taxes.

A discussion took place on the desirability of remaining in the present quarters, or of purchasing permanent quarters for the Society.

Mr. Jennings thought it would be desirable to remain in these rooms at present, provided the necessary arrangements could be made with the Bank.

The Secretary stated that in all probability a satisfactory agreement could be arrived at should it be decided that the Society wished to remain here.

Mr. E. P. Hannaford expressed himself strongly in favor of remaining in the present quarters. He said that if we moved to other quarters, we would probably incur additional expenses, and while he was of course of the opinion that the matter should be left in the hands of the Council, he would recommend that a lease should be secured for an additional five years on the present conditions.

Mr. C. H. Rust thought the present rooms admirable, and that, unless the Society was going to get something much cheaper and better, it would not be advisable to move.

Mr. W. Chipman said that he gathered from the Treasurer's report that the present income of the Society was not equal to the expenditure, and he hoped the new Council would consider carefully anything tending to increase the latter.

He thought that the Treasurer's statement should be supplemented by an explanation of some of the larger items, and that we should also have a statement of the assets and liabilities of

the Society. He referred to the fact that, although the expenditure on legislation was large, nothing had yet been done in Ontario, and the expenditure during the current year would probably be represented by a similar large item. He referred to the fact that it was the opinion of some of the non-resident members that relatively too much was paid into the Society from outside. Such was not his own opinion, but he knew that the feeling did exist.

The Treasurer. The Treasurer replying, stated that there seemed to be a misunderstanding in regard to the financial statement. The receipts were \$1,942 ahead of the receipts for last year, and while it was true that the balance carried forward this year is \$474 less than that carried forward last year, this was due to exceptional circumstances. Furniture to the value of \$696 had been purchased, and \$500 had been transferred from the general fund to the building fund, so that but for these special items over \$1,000 would have been carried forward to credit instead of the deficiency shown; as \$1,696 was thus accounted for, without taking into consideration the extraordinary expenditure for legislation. The income during next year is likely to be very much larger, owing to the entrance fee, which is to be \$20 outside of the Province of Quebec, and \$40 under the Quebec Act. The membership must steadily increase, and as new Acts are obtained in the different provinces, the fees will be paid more regularly. He did not consider that the expenses of legislation in other provinces would be as heavy as they had been in the Province of Quebec.

The Treasurer also pointed out that at the close of the year there were arrears amounting to about \$1,200, of which \$250 had been received since the books were closed, and he thought that nearly the whole \$1,200 would come in. In many cases, members who had been in arrears as much as three or four years had paid up. He had received in fees since the close of the year about \$750, which did not appear in the statement.

Col. W. P. Anderson. Col. Anderson stated that he was quite confident that in the Treasurer we had an excellent officer, who was doing a good deal of hard work without recompense, but that at the same time he felt some sympathy with the gentleman who wished for fuller information in order that one might see at a glance how we stand from year to year. As a matter of business we should have on record a statement of our liabilities. He made this statement in order to strengthen the hands of the Treasurer.

The Chairman. The Chairman warned the members not to give the Treasurer too much work.

The Treasurer. The Treasurer stated that our assets consisted merely of furniture and bank balances. We did not propose to sell our furniture, so that the only important asset appeared in the bank balances. The only additional statement which would really be of value would

be one of arrears of subscriptions, and our only liabilities were a few accounts which happened to be outstanding at the end of the year. He had to thank the Finance Committee for attending eighteen or twenty meetings during the year. An effort had been made to have all accounts sent in and paid monthly. If a more elaborate system of accounts was undertaken, it would be necessary to procure additional clerical help. He had himself attended the rooms of the Society on some eighty evenings during the year, and was really not able to give more time to the work.

Mr. E. P. Hannaford thought that the Council should give the Treasurer some assistance. Mr. E. P.
Hannaford.

The Chairman suggested that in future the financial statement might contain two columns, one for the year just closed, and the other for the preceding year. The Chairman.

The Chairman said that our position was really better than had been shown by the Treasurer, that last year there were outstanding accounts estimated at \$1,267, which had been paid during the current year.

Col. Anderson, Mr. Chipman, and others, who had taken part in the discussion, expressed their entire satisfaction with the explanations.

Mr. J. H. Armstrong asked for an explanation in regard to the effect of the Quebec Act upon the original members of the Society and those now joining. Mr. J. H.
Armstrong.

The Secretary in explanation stated that all members of the Society at the time of the passing of the Act have full rights in regard to practice in the Province of Quebec, but that with regard to future members, the Council had pointed out in their report that those who wished to qualify for practice in the Province of Quebec should pass the prescribed examinations, and otherwise conform to the requirements of the Act. The Secretary.

In answer to Mr. D. MacPherson, the Secretary further stated that no new member of the Society, unless he joins under the conditions of the Quebec Act, will be qualified to practice within the Province.

The Chairman then called up Mr. W. Chipman, Chairman of the Ontario Committee on Legislation, to read the report of the Committee.

REPORT OF COMMITTEE ON LEGISLATION.

To the President and Members

of the Canadian Society of Civil Engineers.

Gentlemen:—Your special committee appointed to prepare a "Bill concerning Civil Engineers," and promote its passage through the

Legislative Assembly of the Province of Ontario, begs to report that several meetings have been held during the year, the result being the Draft Bill herewith submitted. It differs but slightly from the Quebec Act.

As the Ontario House meets on February 1st, the Bill should be finally revised immediately if it be considered advisable by the Society to introduce it at this session of the Legislature.

Respectfully submitted,

(Signed), WILLIS CHIPMAN,
Chairman.

- Mr. W. Chipman. Mr. Chipman explained that the bill as presented was the outcome of several conferences between the Ontario Committee and the Central Committee at Montreal, and he did not think it would be wise to authorize any radical departure therefrom without reference to the Committees.
- Mr. G. J. Desbarats. Mr. G. J. Desbarats asked if in the list of schools the Royal Military College was included.
- Mr. W. Chipman. Mr. Chipman replied that the general section covered the Military College. He would, however, see that the school was specially referred to.
- Mr. J. H. Armstrong. Mr. J. H. Armstrong called special attention to the clause for admitting land surveyors and engineers now practising to continue in practice without becoming members of the Society, and to the provision in regard to students becoming members of the Society.
- Mr. J. M. McCarthy. Mr. J. M. McCarthy asked if the limiting item of \$1,000 could be changed to \$600 for the sake of uniformity with the Quebec Act.
- Mr. W. Chipman. Mr. Chipman undertook to refer these suggestions to the Committee.
- The Chairman. On motion by Mr. Stuart Howard, seconded by Mr. L. Skaife, the several Committees on Legislation as named in the Report of Council were re-appointed.
- The Chairman. The Chairman called for the report of the Committee on Standard Measures.
- The Secretary. The Secretary stated that the Committee had only to report progress. The Committee was re-appointed.
- The Chairman. The Chairman called for the report of the Committee on irregularities in connection with the Board of Health, Ontario.
- Mr. C. H. Rust. Mr. C. H. Rust reported that the Committee had not considered it desirable to take any action during the present year. The Committee was re-appointed.

The following report on the award of the Gzowski Medal was read:—"As Chairman of the Gzowski Medal Committee, I beg to report to Council as follows:

"Resolved by the Gzowski Medal Committee of the Canadian Society of Civil Engineers, that the Council be recommended to award the medal for the season to John Taylor Farmer, Ma.E., for his paper on "Impulse Water Wheels."

(Signed), JOHN T. NICHOLSON,
Chairman.

The Gzowski Medal was unanimously awarded in accordance with the report.

A communication was read from the Society of Architects of the Province of Quebec, asking the Society to use its influence with the Quebec Legislature in connection with the following proposed clause in the Montreal Charter Bill:

"That the Building Inspector, who may be appointed by the City of Montreal, and at least one assistant Inspector shall be architects of ten years' practice, and that the Board of Expropriation shall consist of five members, viz.:—A Lawyer, who shall be chairman, an Architect, a Civil Engineer, a Contractor, and a Real Estate Agent, all of whom shall have had at least ten years' practice in their respective professions."

The matter was referred to the Council.

A report of a special committee, appointed at an Ordinary Meeting of the Society, on two properties which were offered for sale, with estimates for maintaining the same, was read.

Mr. J. M. McCarthy thought the Society was not at present in a position to buy property, and that if the Society moved into permanent quarters the annual expenses would be increased one hundred per cent. Mr. J. M. McCarthy.

Mr. L. Skaife suggested that if a building was to be purchased, a number of the members would be found willing to subscribe to the Building Fund, which is now almost at a standstill. Mr. L. Skaife.

Mr. W. J. Sproule thought it desirable to own property, but that it was not always economical. He questioned the expediency of purchasing at present, especially in view of possible expenses in connection with incorporation. He would not like to see the Council bound down to any special line of action. Mr. W. J. Sproule.

Moved by Mr. E. P. Hannaford, seconded by Major Gray,

"That the rooms at present occupied by the Society over the uptown Branch of the Bank of Montreal be secured for a further term of four or five years, and that the Council be instructed to carry this out."

Moved in amendment by Mr. J. M. McCarthy, seconded by Mr. C. H. Rust,

"That the whole question of providing quarters for the Society be left to the incoming Council."

Mr. H. Irwin. Mr. H. Irwin thought that many members were in favour of keeping the present rooms for at least one year, and meanwhile to endeavour to purchase a piece of property without incurring any enormous expense; and then going to some of the more wealthy members and asking them for subscriptions to the Building Fund.

It was pointed out that if the Council considered favourably the proposal to purchase property, it would be necessary to give four weeks' notice and call a Special General Meeting for the purpose of giving the necessary authority in connection with the matter.

The amendment was then put and carried.

Mr. J. G. Kerry. Mr. J. G. Kerry then stated that he wished to have a show of hands in favour of purchasing as against renting.

Moved by Mr. W. Kennedy, seconded by Mr. J. M. McCarthy,

"That this meeting is of the opinion that this Society is not in a position to build or purchase permanent quarters at present."

Moved in amendment by Mr. L. Skaife, seconded by Col. Anderson,

"That it is the opinion of this meeting that it is the policy of this Society to purchase a property as soon as in the opinion of the Council the funds of the Society will warrant such action."

The Chairman ruled that the second resolution was not an amendment to the first.

The resolution proposed by Mr. W. Kennedy, seconded by Mr. J. M. McCarthy, was then put and carried.

The resolution proposed by Mr. L. Skaife, seconded by Col. Anderson, was then without further discussion put to the meeting and carried.

On motion it was resolved,

"That the Quebec Act be printed along with the By-Laws of this year."

Moved by Mr. J. M. McCarthy, seconded by Mr. W. J. Sproule,

"That in view of the fact that it is the settled policy of this Society to establish one Civil Engineering Society in all Canada which shall include all branches of that art, that the Council be instructed to draw the attention of the Universities to the entirely different significance of the term Civil Engineering as employed by them and as understood by this Society, and to request them to consider if they cannot arrange to use this term only with the full significance that is given to it in the Charter of the Society."

Mr. W. T. Jennings. Mr. Jennings stated that the University of Toronto was in full accord with the tenor of this resolution in its interpretation of the various departments of Civil Engineering. He thought, however, that some change was desirable in McGill University.

Moved by Mr. W. J. Sproule, seconded by Mr. L. Skaife,

"That it is expedient that a representative committee be ap-

pointed at this meeting to enquire into the question of the official appointments or names of Engineers, with a view to attaining uniformity in the designation of Engineers, so that the terms Chief Engineer, Assistant Chief, District, Divisional, Section, Assistant, Deputy, etc., etc., may have definite meanings as nearly as possible, and that this committee report to the next Annual Meeting, either directly or through the Council."

Mr. Sproule, in proposing his motion, said that every possible interpretation had been put upon such a term as that of Assistant Engineer. He had, in proposing his resolution, no reference to any particular situation or position, but had in view simply the idea of arriving at an understanding of what the terms meant. There was a similar attempt made in the American Society of Civil Engineers many years ago, but nothing came of it. It might, however, be possible to do something now. The matter is in a most chaotic state. He realized that the undertaking was a difficult one but it was well worth attempting.

Mr. W. J. Sproule.

Mr. J. G. Kerry expressed his appreciation of the necessity of some such action as that outlined in the resolution.

Mr. J. G. Kerry

The motion was then put and carried.

In terms of the foregoing resolution the following committee was appointed:

Messrs. R. Surtees, W. B. Mackenzie, W. Chipman, W. J. Sproule and Col. Anderson.

The scrutineers of the ballot for the election of the Nominating Committee reported that the following had been elected:—

For Quebec.—Messrs H. Irwin and Stuart Howard.

For Ontario.—Messrs. C. H. Rust, J. Galbraith and E. H. Keating.

For Manitoba and North-West Provinces.—Col. H. N. Ruttan.

For Maritime Provinces.—Dr. M. Murphy.

Outside of Canada and Newfoundland—Mr. W. J. Sproule

The scrutineers of the ballot for the election of Officers and Members of Council presented their report, and the Chairman declared the following elected:—

PRESIDENT.

W. T. JENNINGS, Toronto, Ont.

VICE-PRESIDENTS.

P. W. ST. GEORGE, Montreal; K. W. BLACKWELL, Montreal;
E. H. KEATING, Toronto.

TREASURER.

H. IRWIN, Montreal.

SECRETARY.

C. H. McLEOD, Montreal.

COUNCILLORS.

G. H. DUGGAN, Montreal.	C. E. W. DODWELL, Halifax.
JOHN KENNEDY, Montreal.	ST. GEO. BOSWELL, Quebec.
THOS. MONRO, Coteau Landing.	W. B. MACKENZIE, Moncton.
H. N. RUTTAN, Winnipeg.	E. MARCEAU, Montreal.
C. H. RUST, Toronto.	W. CHIPMAN, Toronto.
G. A. MOUNTAIN, Ottawa.	J. GALBRAITH, Toronto.
D. MACPHERSON, Montreal.	S. HOWARD, Montreal.
E. A. WILMOT, Victoria, B.C.	

LIBRARIAN.

W. MCNAB, Montreal.

- Mr. W. T. Jennings. Mr. W. T. Jennings, the newly elected President, then took the Chair, and in doing so expressed his appreciation of the honour conferred upon him.
- Mr. H. Gray. Mr. H. Gray stated that some time ago he had prepared a paper for the Society on "The Great Lakes, their Commerce and Physical Features," and that this paper was printed and read. He did not know why it was not published in the Transactions, but had understood it was on account of his having quoted some authors. He admitted he did not have an engineer actually measure the quantities, but had used the measurements of others. He stated that he had discussed the treatment which he had received with others; that he had been badly used, that he would never prepare another paper for this Society, and that he knew there were other people in the same position as he.
- The President. The President stated that he remembered something in connection with the matter, but did not know why the paper was not published. His recollections were that the quotations were not acknowledged by quotation marks.
- Mr. H. Gray. Mr. Gray stated that the paper was sent back to him, and the quotation marks were put in, that he had received an acknowledgment of the paper from the Institution of Civil Engineers, and was hurt that it had not been accepted here.
- The President. The President asked Mr. Gray if he would not acknowledge that the Society acted in accordance with the spirit of the organization in not accepting the paper when the quotation marks were found to be wanting. If the Society was willing, he would be glad to have the question as to the printing of the paper again considered.
- The Secretary. The Secretary stated that he was afraid there was a technical difficulty in connection with the matter; one of the standing rules of the Society being that papers which had already been published elsewhere could not appear in our Transactions. The paper was substantially a series of extracts from other publications.
- The President. The President said it was a serious matter to have anyone go

away from the Annual Meeting under the belief that a paper had been unjustly refused a place in the Transactions of the Society. He was a Member of the Council at the time, and it was his settled conviction that the paper contained extracts from the United States Departments and other sources without credit being given therefor. If this was wrong, he would be glad to correct his statement. He would suggest that a committee be appointed to enquire into the whole matter.

It was thereupon moved by Mr. W. J. Sproule, seconded by Mr. G. A. Mountain,

“That a committee be appointed to enquire into the action taken by the Society in regard to Mr. H. A. Gray’s paper on the Great Lakes, their Commerce and Physical Features, and report to Council at the earliest possible date.”

The following committee was appointed to carry out the terms of the resolution:

Messrs. W. J. Sproule, R. Surtees, W. B. Mackenzie, W. Chipman, Col. Anderson.

Mr. C. deB. Leprohon called for a report of the attendance of the Mr. C. deB. Leprohon.
Members of Council at the meetings of Council.

The Secretary replied that, in accordance with a standing order, The Secretary.
such a statement was now on the table and might be consulted.

After some discussion as to the desirability of publishing such a statement, it was moved by Mr. C. deB. Leprohon, seconded by Mr. W. J. Sproule, and carried,

“That in future the Nominating Committee be furnished a list of the attendance of the different members of the Council, together with any explanations that may be forthcoming as to their non-attendance.”

The President stated that it was usual to have the address of the The President.
retiring President read at the Annual Meeting, and to have the same published in the Proceedings.

On motion it was resolved that the President’s address be taken as read.

PRESIDENT’S ADDRESS.

MR. CHAIRMAN AND GENTLEMEN:—In retiring from the presidency of the Canadian Society of Civil Engineers, I desire to thank you most sincerely for the honour which your selection a year ago conferred on me, and I regret exceedingly that circumstances altogether beyond my control prevented my taking a more active part in the affairs of our Society, and sharing to a greater degree the pleasures and advantages of the Society’s meetings.

Your consideration and forbearance under these circumstances has been more than I deserved.

I do not intend to inflict upon you a long historical sketch of the engineering works which have been commenced or completed during the past year, for the daily papers with their well written articles and photographic accompaniments bring these matters attractively to our notice, and the technical journals record them with such close detail and elaborate drawings that they are in everyone's mind or on our bookshelves as works of reference, far more valuable and with infinitely greater facility for reference than any words of mine would possess.

A few words to the students and young members of our Society may, however, be of some service, and, if devoid of any other merit, will, I promise you, possess the merit of brevity.

With such an institution as McGill College, the young men of to-day, especially those within easy reach of Montreal, possess advantages which their seniors educated in this country never had, and no more genuine or sincere assurance of the appreciation of the munificent donations which have made McGill College what it is can be given the donors than to see the lecture and experimental rooms and museums thronged with bright and earnest students making every possible effort to possess themselves of the wealth of knowledge so generously placed within their reach and so easily acquired with the assistance at their disposal.

A thorough grounding in the fundamental principles of any profession or calling is as necessary for the individual independence and stability which every man should strive to possess as a solid foundation is for the stability of a structure. This thorough grounding McGill College affords, with facilities which cannot be surpassed, and I would urge upon our students and young members to avail themselves of these advantages to the fullest extent possible.

Theory and a large portion of practice, especially in the results obtainable from the testing machines, here go hand in hand, and the earnest and painstaking young engineer almost at the commencement of his career may be in possession of information which others have picked up like crumbs here and there in the course of a lifetime, as failures of works or "accidents" have offered opportunities to careful students, for we are all students in engineering until the curtain falls in the last act of this existence.

The college course, however, will soon come to an end, and the young engineer must start out to make his way in the world. If he is well grounded, as we will assume, has a McGill diploma in his pocket, his trust in providence and his powder dry, he will be well equipped for doing so, and should move forward erect and with a firm and steady step, indicative of his honesty and firmness of purpose, and in due course he will no doubt secure an engagement on some public work, and his success will be in his own hands.

He will probably be located in some small town or village, a stranger to everyone, and, if he has not already done so, he should formulate for his guidance rules of conduct based on common sense, which will win for him the confidence and respect of the community, which are as necessary for his advancement as technical knowledge.

He should be cheerful and affable. He should move slowly in forming acquaintances that he may not make mistakes which it would embarrass him to correct.

He should not pose as a puritan, but should avoid saloons and gambling as he would the plague. He should be early in the field and late in the office when the necessities of work require. He should make it a point to have his work well laid out in advance, and detailed plans prepared early, that the contractor may have no grounds to complain for delay on his part, for it is of the first importance that the contractor should have facilities for changing his men from place to place, or putting on a large force when conditions are favourable.

It may also affect the contractor's profits if plans of structures are not furnished at an early day, that he may arrange for materials when prices and conditions are in his favour.

In preparing detailed plans, utility and durability should be studied. Standard sizes and shapes should be used as far as conditions will permit, as a departure from standards means not only increased cost, but difficulty and often serious delay in obtaining materials.

He should cultivate the habit of observing closely what is being done upon the work, how and with what appliances it is being done, and who is doing it. He should make himself familiar with the roads and short cuts in the neighbourhood of the work, and their varying conditions as affected by the weather and seasons. In short, he should be perfectly at home in everything connected with the work and its surroundings, that he may be eligible for advancement when opportunity offers.

When measuring work for the monthly estimates, he should, as far as time will permit of his doing so, return the actual quantities of work done and materials delivered, as it would be unfair to the contractor to under-estimate the work, and an unkindness to him to over-estimate it, as to do so would be misleading and disappointing when actual quantities were returned, as they would eventually have to be.

By assisting the contractor in the various ways above mentioned it will be less difficult for the young engineer to say no when his duty requires him to do so, and that unpleasant duty will, no doubt, have to be occasionally performed, particularly about estimate time, when large estimates are often asked for by the contractor "to tide over pressing needs, and to be adjusted in the next month's estimate."

Such a course should never be followed. The actual quantities should be returned to the senior engineer with the statement of facts. At such a time, the prudence of not accepting presents or having any money dealings with the contractor will be fully realized.

He should carefully check the work in the field and in the office, remembering that, in addition to his duty to himself, he owes it to his college to maintain the standard which his diploma should give assurance of.

He should be reticent about the work, excepting with his own senior officer, to whom he should give a full measure of loyalty and carry out his instructions promptly and cheerfully.

He should be free from prejudice and strictly fair. If he will observe these rules, and it needs but a little firmness and self-denial to do so, he will forge steadily ahead, as men of such character are always in demand.

W. G. M. THOMPSON.

ST. CATHARINES, January 3rd, 1899.

Moved by Mr. K. W. Blackwell, seconded by Mr. D. MacPherson.

"That the Society hereby records a vote of thanks to the retiring President."

Mr. Blackwell. We have not had the pleasure of having Mr. Thompson at any of our meetings, but we would, nevertheless, desire to record our thanks for his services.

It was moved by Mr. G. H. Garden, seconded by Mr. J. M. McCarthy, and carried unanimously:

"That a vote of thanks be tendered to the officials of the Grand Trunk Railway, who so kindly placed a train at the disposal of the Society to visit the new Victoria Bridge."

It was moved by Mr. W. McNab, seconded by Mr. C. deB. Lepron, and carried unanimously:—

"That the thanks of the Society are due and are hereby tendered to the Canadian Pacific Railway Company for its kindness in placing at the disposal of the Members a special train for their conveyance to Grande Mere and return, and other courtesies."

It was moved by Mr. Wm. Kennedy, Jr., seconded by Mr. J. G. Kerry, and carried unanimously:—

"That the thanks of this Society be tendered to the Laurentide Pulp Company for its great kindness in extending to this Society an invitation to visit their very interesting and extensive works at Grande Mere, and for the generous hospitality extended to the Members of the Society who availed themselves of this invitation."

It was moved by Mr. B. J. Saunders, seconded by Mr. Willis Chipman, and carried unanimously:—

"That the thanks of the Society be tendered to the Secretary and

Librarian for their efforts in furthering the interests of the Society."

It was moved by Mr. Stuart Howard, seconded by Mr. C. deB. Leprohon:—

"That a vote of thanks be tendered to the Treasurer for his valuable assistance during the past year, and for his careful and devoted attention to his duties." Carried unanimously.

It was moved by Mr. E. P. Hannaford, seconded by Mr. D. MacPherson, and carried unanimously:—

"That a vote of thanks be tendered to the Scrutineers of the ballots for their services at this meeting."

The meeting was then adjourned.