



Canadian Society of Civil Engineers.



ANNUAL MEETING

JANUARY 12th and 13th, 1892.

ANNUAL GENERAL MEETING.

Tuesday, January 12th, 1892.

In the absence of the President and other Vice-Presidents Mr John Kennedy took the Chair.

The Secretary having read the notice convening the meeting—

The Chairman stated that he regretted having to announce that owing to the illness of Lady Gzowski, the retiring President, Sir Casimir Gzowski would be unable to attend the meeting.

The minutes of the meeting held on January 15th, 1891, were read and adopted.

Some discussion took place as to the instructions to be given to the scrutineers for the ballot and as to who were duly qualified voters for officers for 1892. The Chairman stated that he considered the matter settled by By-Law, and the By-Law having been read, it was agreed that only the ballots of those members who had not paid up for the year 1891 should be thrown out.

It was then moved by Mr. W. J. Sproule, seconded by Mr. F. F. Miller, and resolved:—

“That a ballot in which the same name is voted for different offices will not be invalidated on this account.”

In accordance with the resolution passed at the last Annual Meeting, the Chairman appointed the following gentlemen to act as scrutineers of the ballot for the election of officers for 1892:—

Messrs. H. Irwin, M. J. Butler, F. F. Miller and A. Rhodes.

The roll of membership and a statement from the Treasurer's books, showing the names of those who were in arrears, was furnished to the scrutineers, and they then entered upon their duties.

Messrs. W. E. Gower, J. F. Torrance and L. W. Toms were appointed by the Chairman scrutineers for the amendments to By-Laws.

Mr. T. C. Keefer, Past President, moved, seconded by Mr. Walter Shanly :—

“ That the Canadian Society of Civil Engineers respectfully recommends to the Government of Canada that no more locks be constructed upon the St. Lawrence canals with the length of chamber established by the Canal commission in 1871, but that this length should be increased to meet the requirements of proportion of length to beam in modern specimens of naval architecture, as established without reference to locks upon the upper lakes and upon the ocean. ”

Some discussion upon the motion ensued, which was taken part in by Messrs. W. Shanly, E. P. Hannaford and W. J. Sproule.

At the request of Council, Mr. Alan Macdougall drew the attention of the meeting to the circumstances of the Toronto branch of the Society. He stated that no great interest was taken in the branch by the members resident in Toronto and that they were under considerable disadvantages owing to the smallness of the number of members who were willing to support the branch by the payment of the extra fee of \$2.00. When the meeting re-assembled on Wednesday he would ask for an interpretation of the By-Law respecting branches.

The meeting thereupon adjourned to Wednesday, the 13th instant at 10 o'clock a.m.

ADJOURNED ANNUAL MEETING.

January 13th, 1892.

Mr. John Kennedy, Vice-President, in the Chair.

The Secretary read the report of Messrs. J. F. Torrance, W. E. Gower and L. W. Toms, scrutineers on the amendments to By-Laws :—as follows :—

By-Law 9, line 5.—Omit the words “ and shall, ” and sixth line after the word “ meetings ” add “ supervise the printing, and under the direction of the Council edit the Transactions of the Society. ”

By-Law 13, Line 6.—Omit the word “ printing, ” and seventh line omit the words “ shall edit the Transactions. ”

Both carried on the following vote :—

103 ayes, 5 nays, 6 ballots invalid.

The Secretary read the report of the Council for the year 1891 and after some discussion on the wording of portions of the report,

It was moved by Mr. K. W. Blackwell, seconded by Mr. T. C. Keefer, and resolved :—

“ That the report of the Council be adopted as amended and that it be printed in the Transactions. ”

ANNUAL REPORT.

The Council has much pleasure in presenting the following Report of the work of the Society during the past year :

ROLL OF THE SOCIETY.

The elections comprised *nine* members, *thirteen* associate members, *eleven* associates and *eighteen* students. *One* associate member has been transferred to the class of members and *six* students to the class of associate members, while, from various causes, *twenty-five* have been removed from the list, the net increase for the year being *twenty-nine*.

The resignations were :

Members.—W. C. Mitchell, J. W. Schaub, H. S. Thornberry.

Associate Members.—D. B. Dowling, E. D. Ingall, A. McDonnell, W. W. Russell, Jas. White.

Associates.—W. G. Cassels, W. D. Matthews, Hon. Wm. McDougall, W. Perry, jr.

Students.—C. E. Cartwright, W. A. Kilgour, B. McLennan, H. H. Walker, C. H. C. Wright.

The deaths have been :

Honorary Member.—Sir John Hawkshaw, F.R.S.

Members.—George H. Henshaw, J. T. Stokes.

Associate Member.—Henry Archbald.

The total number on the list at present date includes *six* honorary members, *two hundred and eighty-one* members, *one hundred and fifteen* associate members, *eighty* associates, and *one hundred and seventy-seven* students, or *six hundred and fifty-nine* in all.

ANNUAL MEETING.

The Fifth Annual Meeting was held on Thursday, the 15th January, 1891. Col. Sir Casimir S. Gzowski, A.D.C., K.C.M.G., President, occupied the chair. The meeting was well attended, and there were a goodly number of non-resident members present. In the evening a members' dinner was held in the Windsor Hotel. It was largely attended and was a most enjoyable occasion.

On the following day, Friday, January 16th, the members of the Society met at the Bonaventure Station, and were taken by a special train, provided by the Grand Trunk Railway, to visit the Victoria Bridge, the Locomotive and Car Shops of the Grand Trunk Railway, the Works of the Dominion Bridge Company at Lachine and the Dominion Wire Works. The party was then taken by a special train, provided by the Canadian Pacific Railway, to view the St. Lawrence Bridge, and, after a most successful and instructive day, returned to the city by way of the Canadian Pacific Railway.

ORDINARY MEETINGS.

During the year fifteen Ordinary Meetings of the Society have been held, at which the following papers were read :

On "An Enlarged Waterway between the Great Lakes and the Atlantic Seaboard," by E. L. Corthell; on "The Construction of the Coteau Bridge," by G. A. Mountain; on "The Iron Ores of Nova Scotia," by E. Gilpin, jr.; on "The Sewerage and Waterworks of St. Johns, Newfoundland," by A. Macdougall; on "Mining in British Columbia," by Thos. Drummond; on "Railway Curves," by H. K. Wicksteed; on "The Steam Engine," by W. H. Laurie; on "The Fraser River Bridge, Mission Branch, C. P. R.," by H. J. Cambie; on "Energy and Labour," by G. C. Cuninghame; on "The Expansion and Contraction of Ice on Canadian Waters," by J. H. Dumble, of Cobourg, Ont.; on "The Pile-Driver," by M. Burpee; on "Ship Transportation and the Chignecto Ship Railway," by H. G. C. Ketchum.

STUDENTS' MEETINGS.

There have been three Students' Meetings, at which papers were read on "The International Colliery, Bridgeport, Cape Breton," by C. B. Kingston; on "The Geology and Mining of the Sudbury Regions," by H. H. Walker; on "Cross Sectioning

in the Valleys of the Fraser and Thompson Rivers," by E. A. Stone.

PAPERS.

The Council would again urge upon all members, more especially those in charge of important works, the absolute necessity of contributing papers to be read before the Society. If the Society is to maintain a vigorous existence, it must be supported by generous contributions of knowledge as well as by the subscriptions of its members.

SECRETARYSHIP.

Early in the year, Professor H. T. Bovey, who since the establishment of the Society has so ably performed the duties of the secretaryship, found that owing to the increasing pressure of his professorial duties, he would no longer be able to give such time to the affairs of the Society as its interests demanded, and accordingly placed his resignation in the hands of the Council. The resignation was accepted on June 2nd, and Professor C. H. McLeod appointed to fill the vacancy thus created.

LIBRARIAN.

Mr. Francis Chadwick, who for four years has so faithfully performed the duties of Librarian to this Society, notified the Council on June 2nd last that, owing to absence from Montreal, he would not be able to retain the office. His resignation was accordingly accepted, and Mr. Wm. McNab appointed in his stead.

SOCIETY'S ROOMS.

The rooms of the Society have been open throughout the year at the hours announced at the last Annual Meeting, and, as the report of the Library Committee will show, a large number of the leading engineering journals have been on the reading table for the use of members.

LIBRARY.

Donations to the Library have been received from the following :—Sir Casimir Gzowski, A. W. Cooke, P. H. Middleton, E. A. Hoare, H. Irwin, G. F. Baillaigé, H. Wallis, M. Murphy, John Hislop, Sir Chas. Hartley, John Kennedy, J. C. Robertson, J. D. Barnett, W. A. Kilgour, A. Lane, John Bogart, Dr. Bell, R.

Hering, Dr. Geo. Dawson, H. E. T. Haultain, W. T. Jennings, Thos. Monro, and from the Ordnance Department, Washington.

Special mention should be made of a presentation to the Society by Mr. Wm. Kingsford, C.E., L.L.D., of a portrait by Locke of the late Alex. Mackenzie Ross, C.E., Chief Engineer of the Grand Trunk Railway, and Engineer in Canada of the Victoria Bridge. There is appended to this report at the request of Mr. Kingsford a short account of the life of Mr. Ross.

More accommodation for books has been obtained by a new bookcase which has been added to the rooms. It is hoped that the members will show their appreciation of the value of a good library in connection with the Society by contributions of current engineering or scientific books. There have been 110 volumes bound during the year.

A classified catalogue of the books at present in the library is on file at the rooms.

During the year exchanges have been arranged with the following publications :—

The Iron and Steel Institute.
 The Royal Irish Academy.
 School of Mines Quarterly.
 Department of Ordnance, Washington.
 Chief of Engineers, U. S. Army.
 Technical Society of the Pacific Coast.
 Boston Society of Civil Engineers.
 Engineering Association of New South Wales.
 Engineering and Mining Journal.
 Engineering Association of the South.
 Cassier Magazine Co.
 The Cornell University.

And the following have been subscribed for :—

Mining Journal.
 Engineering Magazine.
 Engineering.
 The Engineer.
 Engineering News.
 Electrical World.

The Council desires to draw attention to the fact that there is no storage accommodation attached to the Society's

Rooms, and that it is absolutely necessary to provide such without further delay. The vault used by the kind permission of the Bank, is rapidly being filled. It cannot be got at unless the Bank officials are present, and its distance from the rooms renders it very inconvenient. In any case storage should be provided by a room that can at all times be available and convenient.

The accounts of the Society have been paid up to the end of December, 1891.

BUILDING FUND.

The Building Committee regrets to have to report the continued existence of a lack of interest in this fund on the part of the great majority of the members, and wishes to emphasize the fact that we are indebted to the generosity of the President, Sir Casimir Gzowski, for the possibility of renting these rooms.

The Society has outgrown its present accommodation and is much pressed for additional room, not only for storage purposes, but for the purpose of providing rooms for smoking and reading, for which so many members are urging the Council to provide accommodation.

During the year circulars have been sent to all subscribers to this fund who are in arrears, and as will be seen by the Treasurer's report only \$180 has been received, making the total to the credit of the fund \$3,113.85, and leaving uncollected subscriptions to the amount of \$402.50. This is a very poor showing for a Society with over 600 members. After all the exertions that have been made subscriptions to the amount of at least \$24,000 should have been received, which is only an average of \$40 from each member of the Society.

It is not expected that all of our members will give this amount—some can readily give many times this sum, and others can give but very little—but if each one will do what he can, and no one fail in doing something, the \$24,000 will be obtained, and every member will feel the richer for what he has done when the Society comes together at its next annual meeting.

Some members, in response to a request for a subscription, say they will subscribe when the building is commenced. If these members would seriously consider the question, they would see that it is impossible to think of commencing a building on a sub-

scription list of only \$3,516,35. Let the Society show by its subscriptions that it is in earnest about a building and the Building Committee will make the commencement, but it can do nothing in the face of the apathy which exists at present on this question—a question which involves the future well-being and success of this Society.

FINANCES.

The income for the year ended on 31st December, 1891 amounted to \$4,469,42, and the general expenditure reached \$3,253,63, leaving a balance of \$1,215,79, which together with the balance of \$2,729,63, brought forward from the year 1890, gives a total balance of \$3,945,42 to be carried forward. A statement of the income and expenditure of the Society is given on page 9.

ABSTRACT OF RECEIPTS AND EXPENDITURES FOR THE YEAR ENDING DECEMBER 31st, 1891.

Balance from Dec. 31st, 1890.....\$ 2,729 63

GENERAL RECEIPTS.

Subscriptions—

Arrears\$ 524 00
 Current 2,791 00
 Advance 644 00
 Extra on local cheques 3 25
 -----\$3,962 25

Donation by the President, Sir
 C. S. Gzowski, A.D.C. 300 00
 "Transactions" and papers
 sold 77 45
 Donations to the Library 10 00
 Receipts for Toronto branch .. 12 00
 Bank interest to Dec. 31st, 1891 107 72

----- 4,469 42

BUILDING FUND.

Balance from Dec. 31st, 1890.....\$2,848 13
 Additional subscriptions 180 75
 Bank interest to Dec. 31st, 1891..... 85 72
 ----- 3,114 60

 \$10,313 65

(Signed), HERBERT WALLIS,
Treasurer.

GENERAL EXPENDITURE.

"Transactions" and President's address.\$ 685 77
 Advance proofs and extra papers 279 45
 Printing, stationery and books 262 05
 Postage, messengers, telegrams, cabs... 250 20
 Assistant Secretary 480 00
 Janitor and other labor 127 50
 Office furniture 289 10
 Rent of rooms, one year 550 00
 Expenses of annual meeting 42 40
 Telephone service 25 00
 Bank commission on collections. 13 16
 Diplomas 60 80
 Gas 26 30
 Book-binding for Library 116 15
 Magazines 39 20
 Express, etc., charges on books 6 55
 ----- 3,253 63

BUILDING FUND EXPENDITURE.

Bank commission on collections 0 75

BALANCES.

General Fund—Treasurer\$3,938 99
 Asst. Sec'y... 6 43
 -----\$3,945 42
 Building Fund—Treasurer 3,113 85
 ----- 7,059 27

 \$10,313 65

Examined with books and vouchers, and found correct.

(Signed), JOHN KENNEDY,
 E. P. HANNAFORD,
Auditors.

Annual General Meeting.

The report of the Gzowski Medal Committee was then read and on resolution it was decided to add this report to Council's report for the year.

REPORT OF THE "GZOWSKI" MEDAL COMMITTEE FOR THE YEAR
ENDING JUNE, 1891.

We, the undersigned Committee appointed by Council, having considered the merits of the ten papers read before the Society for the year ending June 1st, unanimously report in favor of the paper on "Developments in Telegraphy" by D. H. Keely, A. M. Can. Soc. C. E., and make our award accordingly.

(Signed,) E. P. HANNAFORD, Chairman.
JOHN KENNEDY,
PETER A. PETERSON,
HENRY T. BOVEY,
THOS. C. KEEFER.

Montreal, January 9th, 1892.

The Chairman on behalf of Sir Casimir Gzowski presented Mr. Keeley with the medal. Mr. Keeley in reply expressed his pleasure in receiving the medal and trusted that his next effort would be a more worthy one.

In accordance with By-Law No. 38 a list of the meetings of the Council held during the year, and the names of those present at each meeting was submitted for the information of the meeting.

It was moved by Professor Bovey, seconded by Mr. H. A. Gray, and resolved :—

“ That the Council be requested to devise some means of making the Library available and of some use to members both resident and non-resident.”

It was proposed by Mr. H. Wallis, seconded by Mr. P. A. Peterson, and resolved :—

“ That the Council be empowered to pay to the Secretary an annual salary at the rate of not exceeding \$300.00 per annum, to date from the time of Prof. McLeod's appointment on June 2nd last. ”

It was moved by Professor Bovey, seconded by Mr. M. J. Butler, and resolved :—

“ That a committee of the Society be appointed consisting of Messrs. E. P. Hannaford, John Kennedy, P. W. St. George, P. A. Peterson, C. H. Rust, H. N. Ruttan, St. George Boswell, M. Murphy, H. T. Bovey and M. J. Butler, to consider and report at the next annual meeting upon a standard system of testing and also the results of tests upon Canadian and foreign cements. ”

The following report from Council, under date of 1st December, 1891 was read :—

“ The amendments to By-Laws, marked A. B. C. D., having been considered, it was resolved :—

“ That inasmuch as the proposed changes in the By-Laws, marked A. B. C. D., refer mainly to the election of officers of this Society, the Council considers the subject is one which should properly be dealt with by the Society itself and therefore that the proposals be referred to the approaching Annual Meeting, with the recommendation that a special committee be appointed to act in the matter in accordance with By-Law No. 41. ”

It was thereupon moved by Mr. W. J. Sproule, seconded by Mr. Thos. C. Keefer, and resolved :—

“ That the recommendation of the Council be adopted and that a committee of nine be appointed by this meeting to carry out the recommendation and also to draft a thorough revision of the By-Laws including any amendments thought desirable, and that such Committee report to Council not later than July 1st, in order that the proposed changes can be voted on at the next annual ballot. ”

The nominations for the Committee on Revision of By-Laws having been received and a vote having been taken, the following were declared to have received the greatest number of votes :—

Messrs. W. J. Sproule,	}	Representatives from Montreal.
T. C. Keefer,		
P. W. St. George,		
K. W. Blackwell,		
E. P. Hannaford,		
P. A. Peterson,		
B. B. Osler,	}	Representatives from Toronto branch.
Alan Macdougall,		
W. T. Jennings.		

Mr. St. George having declined to act on the committee it was resolved that Mr. Irwin, having received the next highest number of votes, should be elected to fill the place thus made vacant.

It was moved by Mr. W. E. Gower, seconded by Mr. L. W. Toms :—

“ That a committee be formed to consider the question of finding accommodation for smoking and storage purposes, and that meanwhile smoking be allowed in one of the rooms now occupied, except during the Society’s meetings. ”

The motion having been put was carried by a vote of 20 to 10.

It was moved by Mr. H Wallis, seconded by Mr. P. A. Peterson, and resolved :—

“ That the Library Committee be the committee required by the last resolution to enquire into the question of providing a smoking and storage room. ”

A resolution of Council of Nov. 3rd 1891 referring the part which this Society should take in the Engineering Convention and the entertainment of foreign visitors to Chicago on the occasion of the Columbian Exposition and circulars connected therewith issued by the General Committee at Chicago, having been read, after some discussion which was taken part in by Messrs. Keefer, Blackwell, Peterson, Wallis, Bovey, Kennedy and Hannaford, it was moved by Prof. Bovey, seconded by Mr. Blackwell, and resolved :—

“ That the reply to be forwarded to the General Committee on International Engineering Congress in connection with the enter-

tainment of foreign engineers during the time of the Columbian Exposition, be left in the hands of the Council, on the understanding that this meeting is of opinion that it is inadvisable to take part therein upon the basis proposed in the circular. ”

The scrutineers for the election of officers for 1892 presented a portion of their report, giving the result of the ballot as follows :—

“ We, the undersigned scrutineers, have examined the ballots cast for the election of officers of the Society for the year 1892 and beg to report as follows :— Total ballots received from members entitled to vote, 215 ; ballots received from members in arrears, 9.

Ballots found to be wholly bad.....	3
Ballots not counted for President.....	12
Ballots not counted for Council.....	41

Voting as follows :—

President.

	Votes rec'd
John Kennedy.....	133
E. P. Hannaford.....	67

Vice-Presidents.

Thomas Monro.....	202
W. T. Jennings.....	198
P. A. Peterson.....	179
John Kennedy.....	10
E. P. Hannaford.....	5
P. W. St. George.....	5
K. W. Blackwell.....	5
<i>Treasurer</i> , Herbert Wallis.....	212
<i>Secretary</i> , C. H. McLeod.....	210
<i>Librarian</i> , Wm. McNab.....	212

Members of Council.

H. T. Bovey.....	155
Joseph Hobson.....	155
H. G. C. Ketchum.....	155
H. N. Ruttan.....	150
P. W. St. George.....	147
C. E. W. Dodwell.....	144
H. J. Cambie.....	139
K. W. Blackwell.....	138

C. H. Keefer.....	138
H. D. Lumsden.....	136
F. N. Gisborne.....	135
Alan Macdougall.....	131
J. D. Barnett.....	131
E. A. Hoare.....	129
F. C. Gamble.....	127
F. R. F. Brown.....	119
W. B. Dawson.....	113
M. Donaldson.....	112
L. A. Vallee.....	76

The meeting then adjourned to 2.30 p.m.

ADJOURNED MEETING.

Convened at 2.30 p.m.

Mr. John Kennedy, in the Chair.

It was moved by Mr. Macdougall, seconded by Mr. Gray, and resolved :

“ That the thanks of the Society are due and are hereby tendered to the committee who took charge of the arrangements and brought to such a pleasant and successful issue the *Conversazione* held last night. ”

It was moved by Mr. Shanly, seconded by Mr. Peterson and resolved :—

“ That the thanks of the Society be accorded to the Chancellor, Governors and Corporation of the McGill University for their kindness in granting the use of the Workman building for the *Conversazione* on the evening of Tuesday the 12th instant. ”

It was moved by Mr. T. Drummond, seconded by Mr. H. Irwin, and resolved :—

“ That a vote of thanks be given to Professors Bovey, Carus-Wilson, Cox and Chandler for their kind assistance in connection with the *Conversazione*. ”

It was moved by Mr. Walter Shanly, seconded by Mr. T. C. Keefer, and resolved :—

“ That the thanks of this meeting be tendered to the retiring President, Col. Sir Casimir Gzowski, and that the meeting desires to express its high appreciation of the valuable services and gen-

erous aid rendered by him to the Society during the three years in which he filled the presidential chair, and at all times."

It was moved by Mr. T. C. Keefer, seconded by Mr. P. A. Peterson, and resolved :—

"That the thanks of this meeting be tendered to Professor Bovey for his services in the past, not only as Secretary but as a member of Council and as a promoter generally of the interests of the Society since the day of its inception."

It was moved by Mr. Blackwell, seconded by Mr. Shanly, and resolved :—

"That a hearty vote of thanks be tendered to Mr. Herbert Wallis for his services as Treasurer during the past year."

It was moved by Professor Bovey, seconded by Mr. Garden, and resolved :—

"That a hearty vote of thanks be given to Professor McLeod for his labours as Secretary during the past year."

On motion by Professor McLeod, seconded by Wm. McNab, it was unanimously resolved :—

"That the best thanks of this Society are due and are hereby tendered to Mr. Francis Chadwick, for careful attention to the interests of the Society during his term of office as Librarian."

It was proposed by Mr. H. Irwin, seconded by Mr. W. E. Gower, and resolved :—

"That a vote of thanks be given to Mr. W. McNab for his services as Librarian during the year 1891."

It was proposed by Mr. P. A. Peterson, seconded by Mr. C. E. Goad, and resolved :—

"That the best thanks of this Society are due to Mr. Hannaford for his work as Chairman of the Library Committee and for his careful attention to the business of the Society, more particularly during the early part of the past summer when the former Secretary, Prof. Bovey, found it impossible to give his personal attention to the affairs of the Society."

Mr. T. C. Keefer's motion, making a recommendation to Government respecting the length of canal locks, proposed on Tuesday afternoon, was put to the meeting and carried unanimously.

The scrutineers then completed their report on the ballot by declaring the election to the Council for 1892 as follows :—

President.

John Kennedy.

Vice-Presidents.

Thos. Monro, W. T. Jennings, Peter A. Petersen.

Treasurer.

Herbert Wallis.

Secretary.

C. H. McLeod.

Librarian.

William McNab.

Members of Council.

H. T. Bovey,	K. W. Blackwell,
Jos Hobson,	C. H. Keefer,
H. G. C. Ketchum,	H. D. Lumsden,
H. N. Ruttan,	F. N. Gisborne,
P. W. St. George,	Alan Macdougall,
C. E. W. Dodwell,	J. D. Barnett,
H. J. Cambie,	E. A. Hoare,
	F. C. Gamble.

Mr. Kennedy thereupon expressed his thanks to the Society for the honour it had done him in electing him to the Presidential chair, and assured the meeting that he would do all that might be in his power to further the best interests of the Society.

It was moved by Mr. J. F. Torrance, seconded by Mr. W. Shanly, and resolved :—

“ That the report of the scrutineers for the election of officers for 1892 be adopted, that a vote of thanks be given to the scrutineers, and that the ballot papers be destroyed. ”

The following statement from the retiring president, Col. Sir Casimir S. Gzowski was then read by the Secretary :—

MEMORANDUM BY THE RETIRING PRESIDENT, COL.
SIR CASIMIR S. GZOWSKI, A.D.C., K.C.M.G.

READ AT THE ANNUAL MEETING, January 13th, 1892.

I regret not being able to comply with the custom followed by retiring Presidents to deliver an address upon a topic that would prove of interest to the Society. I found myself unequal to the effort. I shall, however, venture to say a few words on matters referring directly to our Society and bearing upon its future, which the interest I take in its welfare prompts me, and which I venture to hope, the members will receive in a like spirit.

On leaving the Presidential chair, to which you did me the honour of electing me by unanimous vote for three successive years, it is due to you that I should express my grateful thanks for the confidence reposed in me by the Society, as well as for the uniformly generous support extended to me by the Council and officers, on whom fell almost the entire labour connected with the working of the Society, labour that I am pleased to say has borne good fruit.

Reference to the personnel of the Council shows that the majority of the members who served on the Council and guided the affairs of the Society, were nearly the same members from its organization to the present date. The results of this wise guidance have proved so satisfactory that I venture to refer to the progress the Society has made from the year of its birth, 1887, to the close of the past year, 1891.

In the year 1887, the total membership of the Society was 423, composed of 225 members, 65 Associate members, 27 Associates, and 106 Students.

In 1888 the total membership increased to 540, composed of 259 members, 87 Associate members, 47 Associates, and 147 Students.

In 1889 the total membership was 588 composed of 265 members, 102 Associate members, 62 Associates, and 152 Students, to which were added the names of seven distinguished gentlemen who did us the honor of becoming honorary members of the Society.

In 1890 the number of members was 277, Associate members 105, Associates 74, Students 170, making the total number 626.

In 1891 the total number of members increased to 659, viz, 287 members, 115 Associate members, 80 Associates, and 177 Students. There may be a trifling change in these numbers in the beginning of this year.

Financially, the Society commenced in 1887 as shown by our respected, efficient, Treasurer, with receipts during that year from all sources of \$2488.77, and with an expenditure of \$1519.85.

In 1888 Receipts from all sources were \$2777.64 and the expenditure \$1789.64. That year a proposal for building a home for the Society was mooted, subscriptions opened, and the sum of \$1265.25 subscribed towards that object.

In 1889 the Receipts from all sources amounted to \$3629.92 with an expenditure of \$3075.95, and the Building Fund reached the sum of \$2715.48.

In 1890 the Receipts from all sources were \$3817.87 and the expenditure \$3591.13. During that year the Society moved into its present quarters. The Building Fund increased to \$2848.13.

In 1891 the Receipts from all sources were \$4469.42 with an expenditure of \$3253.63. The Building Fund now amounts to \$3113.85.

These figures carry unquestionable evidence of the progressive growth of the Society from year to year during its young life of five years, showing increase in membership and in revenue.

Similar steady increase of papers brought in by members of the Society for discussion would be very desirable. Such papers are the proper medium by which the Society's usefulness is maintained and extended. I cannot do better than direct your attention again to a memorandum issued to members by our late Secretary, Professor Bovey, to whom the Society is indebted for valuable services during the first three years of its existence, in which he says, "The Council would earnestly impress upon every member capable of writing any useful paper of the need there is for his assistance, as also for his influence in obtaining papers from others."

In 1887 there were 10 papers. In 1888, 14 papers. In 1889 10 papers. In 1890, 8 papers. In 1891, 11 papers.

Such papers with discussion upon them, by drawing attention to the useful practical matter they contain, will tend to the increase in membership, and to the revenue from that source and

from disposal of transactions contained in papers with discussions upon them.

The question of revenue and expenditure is an important one needing careful consideration. To manage the Society, unavoidable expenditure must be incurred; first, for premises sufficient for the wants of the members; secondly, to obtain the services of a competent secretary, librarian, treasurer and accountant if possible combined. This is necessary to secure the efficient management of the Society's affairs. The Society thus far has been most fortunate in finding willing members to perform the respective duties without remuneration as a labour of love. I am confident I express the unanimous voice of the Society by saying that they have the Society's grateful thanks; but such an arrangement cannot, and I venture to hold, ought not to be relied upon. Unremunerated services to which responsibility is attached are not as a rule desirable, and should terminate as soon as possible by early earnest effort to bring that about. This brings up the consideration of the best means of increasing the revenue. A suggestion was mooted to raise the annual subscription. If the Society would agree to such an increase, by say two dollars to the three classes of members, this would do something towards adding to the revenue.

Considerable addition to membership is not to be relied upon, The number of members, now on the roll, 281, has, I am inclined to believe, absorbed very nearly all who are qualified for membership; and here I venture to add Professor Bovey's remark on that subject in the memorandum before referred to: "The Society
" has now enrolled nearly all the members of the profession in
" the Dominion, and the accessions yet to come cannot be counted
" upon to do much more than supply the vacancies which time
" must make."

Non-adherence to the qualification as now laid down, to facilitate entrance for membership, contrary to our by-laws, cannot be entertained, and leaves the increase of fees as the only means by which the revenue can be somewhat increased.

Effort might be made to increase the number of associates. The education that a large number of men have the opportunity of acquiring by becoming interested in the construction of very large, important, engineering works within the Dominion, and from which in many cases they derive material benefits, has

created a class of men whose practical experience should cause them to take an interest in our profession, and who for the privilege of reading papers and discussion on engineering topics, would, I believe, be glad to become associates when the subject is brought to their notice.

I desire to say a few words on the subject of the Building fund towards which members, associate members, associates, and students have generously subscribed. The Society owes the subscribers warm thanks for the aid they have contributed for so desirable an object. The total amount of that fund including interest it was placed at by our Treasurer is \$3,113.85. The very slow rate at which the fund has increased holds out but very distant prospect of its reaching the sum necessary to cover the cost of the land and suitable building. I venture to express my belief that on proper representation to the subscribers to the fund, that the efficient working of the Society demands it, they would assent to the application of the Building Fund towards paying the rent of our present rooms. Failing that, which I do not anticipate, their assent might be asked towards applying the interest to that object. In either case it would benefit the Society by increasing its revenue by the use of a fund growing only by the addition of interest it is invested at, and not reaching within a moderate period of years, unless very largely supplemented, the object towards the carrying out of which it was contributed.

I further venture the suggestion that in the appointment of the Nominating Committee the representation in that Committee of members from distant provinces should not be considered important or necessary. The Nominating Committee entrusted with the selection of members to serve as president, vice-presidents, treasurer, secretary, librarian, and on the Council of the Society should be composed of eligible, capable men, acquainted with the working and wants of the Society, willing to give the necessary time; but I do not consider it essential that the members forming the Committee should necessarily be representative of several provinces of the Dominion. We ought not to forget that Canada is one great Dominion, possessing qualities of immense development, and offering a large field that will require in the near future the skill and service of civil engineers, and should be recognized as such. Unanimous support of the com-

mittee in such matters will add to the strength of the Society at home and to a good reputation abroad.

Without detaining you longer, permit me on retirement from the honorable position of President to express the hope that the Society will continue to grow and flourish; that the Council in all their labors will obtain the unanimous support from members, with confidence that all their actions are with the single object in view, viz., the welfare of the Society.

Although no longer holding an official position, accept my assurances of undiminished interest in the Society and my readiness to do all that I can to promote its welfare.

Toronto, 8th January, 1892.

The matter of the Nominating Committee having been brought before the meeting, some discussion occurred as to the difficulty experienced in the past in the working of a Committee whose members are scattered over the country, and it was urged upon the meeting that the committee should be selected from within the limits of Quebec and Toronto, so as to make it possible to obtain a meeting of the committee.

Resolved that the five who receive the highest number of votes shall be elected, and that the one resident in Montreal who receives the highest number of votes shall be the chairman.

Nominations for the committee were received and the ballot having been taken, the following were declared to be the duly elected members of the Nominating Committee for the year 1892 :—

K. W. Blackwell, Chairman.

H. Irwin, M. J. Butler, F. R. F. Brown, W. McLea Walbank.

Dr. Robert Bell stated that it was not now his desire to withdraw as an associate of the Society. At his request it was agreed to remove his name from the list of those resigning from the Society.

It was moved by Professor Bovey, seconded by M. M. J. Butler and resolved :—

“ That Professor Galbraith's name be added to the committee on cement testing.”

The Secretary read a memorandum from Mr. L. M. Bowman, of Toronto, respecting contemplated legislation of the Provincial

Land Surveyors in the province of Ontario, and after some remarks from Mr. Alan Macdougall, and others.—

It was moved by Mr. F. F. Miller, seconded by Mr. Alan Macdougall, and resolved :—

“ That this matter of Provincial Land Surveyors be referred to the Toronto branch with instructions to report to the Society here should any encroachments be made upon the privileges of civil engineers, in order that steps may be taken to prevent such encroachment.”

On the suggestion of the Secretary, he was instructed to send out a circular to all members of the Society, requesting that they should notify him as to the class of subjects in which they are specially interested, and would wish advance copies of papers sent to them for discussion.

It was moved by Mr. W. E. Gower, seconded by Mr. H. Irwin, and resolved :—

“ That the Secretary enquire into the cost of additional copies of advance proofs of papers, and that the matter be brought before the next ordinary meeting, and that it be then discussed.”

It was agreed that the next annual meeting of the Society should be called as early as two o'clock on the afternoon of the first day, in order to give the scrutineers more time for the completion of their report.

The meeting was then adjourned.

DEATH OF ALEXANDER M. ROSS, ESQ.,
ENGINEER, VICTORIA BRIDGE.

(Republished from The Leader, Toronto, Ont., August 27th, 1862.)

There will be a melancholy satisfaction for the friends of Mr. Alexander M. Ross to learn that his sufferings have at length terminated in death. From the commencement of his illness it was foreseen that his malady was incurable, and that his loss of reason would defy every effort of art. Hence his hopeless case gave no gleam of encouragement, and his end, which we chronicle in another paragraph, has been long presaged. The position he occupied in Canada, his identification with the Grand Trunk Railway, his conception of the Victoria Bridge, would in any circumstance render some mention of him necessary. But Ross was no common man, and in the very wreck of great powers there is a moral grandeur enforcing respect. From the ruin we gather what the shrine once was. By the mental strain, which shatters a great mind, we can judge its tendencies and gauge its powers. There is something more than curiosity which leads to the contemplation of such a life successfully engaged in questions of practical economy, by which our daily being is made happier, and by whose aid the luxury of one generation becomes the ordinary comforts of the next. Our space is limited and our material scanty, but we will do our best to throw some light on the career of this eminent man. There is one peculiarity in his case, that he was an exception to the rule that no one is a prophet in his own land. While here his claim to the design of the Victoria Bridge, in connection with R. Stephenson, is undisputed, because it is well known and understood—in London a scheming unscrupulous clique have, not without success, endeavored to detract from his worth, a success they owe purely to his mental prostration. In happier times, no such effort would have prevailed in England. In Canada, from the first, it has been received only with contempt.

So far as we can learn Mr. Ross was born in Rossshire or Cromarty in 1805, so that at the time of his death he was in his 57th year. Very early in life he was engaged with the well-known Mr. Mackenzie, and shortly afterwards was intimately connected with the elder Stephenson. He was the resident engineer at the Conway Menai Strait Bridges with the late Robert Stephenson, and during his whole career professionally and privately, had

very close relations with him, for we in no way identify Mr. Stephenson with the proceedings of his executors. The proposal to construct the Grand Trunk Railway in Canada, led to the selection of Mr. Ross by English capitalists, to visit the Province, and to report upon its condition and prospects, considered in their relation to railway enterprise. The task was not difficult in one sense ; for the impetus given by the Saint Lawrence Canals was then felt in every corner of the western country; and Canada was in a perfect tumult of excitement ; not perhaps in every case healthy, but the indications of prosperity were too palpable to be denied. What Mr. Ross had to guard against was the peculiarly visionary views which existed in strange contradiction, wherever he went. His mission of course was known, and everyone he met, had very definite ideas where the railway should pass, and as a rule, the exact and proper location was not far from the dwelling of the speaker. Mr. Ross met their suggestions, and the varied and extended advice which he everywhere received, with one un-failing characteristic—silence. He heard with Socratic patience the long and generally animated statement of all the benefits which would result, were some particular policy adopted ; and his only reply was still to listen, until the exhausted speaker ceased to declaim from sheer fatigue. The result of his report was the formation of the Grand Trunk Railway Company. We have now to turn to a subject which we believe was remotely the cause of his death, the Victoria Bridge. The question of its authorship has in Canada generally been considered to be one not admitting of much argument. It is regarded as the joint production of Mr. Ross and Mr. Stephenson, the public not particularly caring to weigh out the particular merits of each. But on Mr. Stephenson's death-bed, when it is believed he was insensible, it is pretended that he gave his sanction to a letter by one Mr. George Robert Stephenson, known only as some family connection, in which the whole claim of Mr. Ross was ignored, and his character in other respects offensively assailed. What caused surprise was the production of such a document, without necessity ; and the only explanation given was that it was considered by those acting with Mr. G. R. Stephenson that Mr. Ross' reputation, enhanced by the Victoria Bridge, would obtain for him the very first rank in London, when it was hoped that Stephenson's mantle would fall on some one with whom

at that time he was more immediately connected. The letter was published in Canada, and gave rise to a strong feeling of indignation. The Hon. John Young, of Montreal, the admitted projector of the Bridge, with all the chivalry of his nature, at once came to Mr. Ross' rescue, stating that when he mentioned the necessity of the structure to Mr. Ross, the latter went with him in a canoe and pointed out the present site and gave a description of what it should be, now embodied in its reality. Mr. George Tate, of this city, also has stated that before working plans were ordered, Mr. Ross, anticipating the necessity, made a design of the Bridge, which he saw, and that it was the same as it now stands. Indeed, Mr. Stephenson, at the public dinner given him in this city, stated his obligations to Mr. Ross; and there cannot be a doubt, that had his illness not bewildered his judgment, he would never have allowed the attack to go forth, if he did allow it, which is not proved, and which is doubted. For there was a friendship and affection even, between the two men. It is very certain that these attacks sensibly affected Mr. Ross. He owed much to the Stephensons, and he felt strongly towards them. One charge his delicate and sensitive nature recoiled from, and that was the idea that he had endeavored to appropriate the whole credit of the work to himself. We can speak something to this point. When the work was complete, the readers of "The Leader" of that time may remember that we published a long and succinet account of the bridge; which, by-the-by, every writer on the subject has more or less plagiarised without the least acknowledgement, although in some instances they have not given themselves the trouble even to change the language. On the completion of this description, Mr. Ross was asked to look over it, to see if any important omissions could be found, and it was he who called upon the writer to make mention of Mr. Stephenson's name, and to identify him to the fullest in the undertaking. The injustice of the charge did not decrease its poignancy, and the shock came the more strong, that the two men had been friends in youth. Never was so painful an adaptation of Coleridge's well-known lines. They rise to our mind in all their strength as we write. In the meantime Stephenson died, and the executors commenced a series of offensive proceedings, all predicated on the supposed wish of their deceased friend. Mr. Ross' family trace his insanity to their proceedings. They assert that his mind re-

ceived such a shock as never to recover. For shortly after the completion of the bridge he returned to England, only to become the inmate of an asylum where he remained until he died.

If the type of a man is, to some extent, to be found in the opinion which his lieutenants entertain of him, we may say that Alexander M. Ross might indeed ask those who served under him to write his epitaph. Literally he was idolized by them. To those not knowing him intimately, perhaps apparently cold, indifferent and silent, to his more immediate subordinates and friends he was full of sympathy, kindness and geniality. He had all the chivalrous devotion and self-sacrifice of the Highlander, with a contempt for all that was mean, false and tricky. No fawning, no cringing gained his heart. Of all men he was the most courteous and kind to those who had relations with him, while none so unlikely to court rank and power. He never left behind him the sting of an unjust reproach; neither did he ever embitter a struggling life by the insolence of office. In matters of duty strict and firm, his reproof was kind, feeling and delicate. Among the many who clustered round him there was not one but who would have made every sacrifice in his behalf. Of great personal strength; of a courage which nothing could daunt or subdue; his manner was gentle as that of a child; and he had a love for music and old songs, blended with the keenest and most critical fondness of art. In his profession few men were his superiors. He was indeed one of those who established the Railway System, which, within thirty years, has become a part of modern civilization, advancing the world in happiness centuries in degree. His reputation was indeed a proof of his capacity. Had he lived, certainly he would have been the first man of his profession in England. But his fate was far more mournful. Nevertheless, even with its sad close, he leaves behind a name long to be remembered, and those who knew the man will much mourn him, and never cease to honour his memory.

