

85171
65

THE JOURNAL

OF THE

Canadian Mining Institute

1898

CONTAINING THE

OFFICERS, MEMBERS, CONSTITUTION AND BY-LAWS

AND THE

PROCEEDINGS SINCE THE DISSOLUTION OF THE

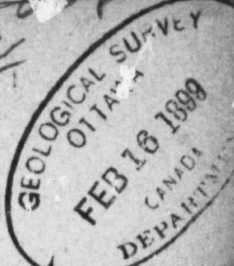
FEDERATED CANADIAN MINING INSTITUTE

TO THE 31st DECEMBER, 1898



VOLUME I.

EDITED BY
THE SECRETARY
SLATER BUILDING, OTTAWA, ONT.



NOTICES.

Annual Meetings.

The first annual meeting of the Institute since its re-organization will be held in the Club Room, Windsor Hotel, Montreal, on Wednesday, Thursday and Friday, 1st, 2nd and 3rd March, 1899. By arrangement members will be carried to Montreal and return from points on the Canadian Pacific, Grand Trunk, Intercolonial, Québec Central and Canada Atlantic Railways for a single fare on the ordinary Certificate Plan.

British Columbia Meetings.

The Council having decided to hold the next meetings of the Institute in British Columbia, in September, arrangements are under consideration for an excursion of the members to Nelson, Sandon, Rossland and other prominent mining centres in British Columbia, particulars of which will be given to members at a later date.

Change of Residence.

The Secretary will be obliged if members will notify him promptly of any change in their addresses.

Subscriptions.

Members are reminded that subscriptions for the ensuing year are payable at the Annual Meeting on 1st March, and should be remitted without delay to the Treasurer, Mr. A. W. Stevenson, C.A., Bank of Toronto Chambers, St. James Street, Montreal.

Library and Reading Room.

The Library and Reading Room (Room 4, Windsor Hotel, Montreal) is open daily for the use of members from 10 a.m. to 6 p.m.

Corresponding Society.

The Council have made arrangements whereby members are permitted to purchase copies of the Transactions of the following corresponding Society at the rates named below:—

The Institution of Mining Engineers—

Vols. 1, 2 and 3, 25 shillings each, post free.

Vols. 4 to 15, 10 shillings each, post free.

All applications and remittances should be addressed to

B. T. A. BELL,

Secretary, Ottawa.

CONTENTS.

PAPERS.

PAGE

Some Recent Experiments in Blasting with Compressed Cartridges..... 3

By Wm. Blakemore, M.E., Coal Creek, B.C.

Notes on a Laboratory Amalgamating Device and Comparisons with
Actual Mill Results..... 10

By H. A. Guess, Keewatin, Ont.

MEETINGS.

General Meeting, 4th March, 1898..... 17

Council Meeting, 7th March, 1898..... 19

Council Meeting, 3rd June, 1898..... 21

Council Meeting, 9th Sept., 1898..... 25

Council Meeting, 2nd Dec., 1898..... 30

CONSTITUTION AND BY-LAWS..... 37

LIST OF MEMBERS..... 42

LIBRARY AND READING ROOM..... 52

8267

OFFICERS AND COUNCIL, 1898-9

PATRON.

HIS EXCELLENCY LORD MINTO, GOVERNOR-GENERAL.

PRESIDENT.

MR. JOHN E. HARDMAN, S.B., M.E., Montreal.

VICE-PRESIDENTS.

MR. W. A. CARLYLE, Ba.Sc., M.E., British America Corporation, Ltd.,
Rossland, B.C.

DR. GEORGE M. DAWSON, C.M.G., Director Geological Survey of Canada,
Ottawa, Ont.

MR. JOHN BLUE, C. & M.F., Eustis Mining Co., Capelton, Que.

MR. CHAS. FERGIE, M.E., Intercolonial Coal Co., Westville, NS.

SECRETARY.

MR. B. T. A. BELL, Editor *Canadian Mining Review*, Ottawa, Ont.

TREASURER.

MR. A. W. STEVENSON, C.A., Bank of Toronto Chambers, St. James Street,
Montreal.

COUNCIL.

Mr. John B. Hobson, M.E., Con. Cariboo Hydraulic Mining Co., Quesnelle
Forks, B.C.

Mr. Wm. Blakemore, M.E., Crow's Nest Coal Co., Coal Creek, B.C.

Mr. S. S. Fowler, M.E., London & B.C. Gold Fields, Limited, Nelson, B.C.

Mr. Frank C. Loring, M.E., Josie Gold Mining Co., Rossland, B.C.

Mr. Hiram Donkin, C.E., Dominion Coal Co., Glace Bay, C.B.

Mr. Wilbur L. Libbey, Brookfield Mining Co., N. Brookfield, N.S.

Major R. G. Leckie, Truro, N.S.

Mr. Clarence H. Dimock, Wentworth Gypsum Co., Windsor, N.S.

Mr. George R. Smith, M.L.A., Bell's Asbestos Co., Thetford Mines, Que.

Mr. George E. Drummond, Canada Iron Furnace Co., Montreal.

Mr. J. Obalski, M.E., Inspector of Mines, Quebec.

Mr. John J. Penhale, M.E., United Asbestos Co., Black Lake, Que.

Mr. Archibald Blue, Director of Mines, Toronto.

Mr. James McArthur, Canadian Copper Co., Sudbury.

Mr. Frederick T. Snyder, Ottawa Gold Milling and Mining Co., Keewatin,
Ont.

Mr. W. Hamilton Merritt, A.R.S.M., Toronto.

td.,

da,

heet,

elle

.C.

in,

PAPERS.



Some Recent Experiments in Blasting with Compressed Cartridges.

By W. BLAKEMORE, M.E., Coal Creek, B.C.

No subject has claimed greater attention from mining men during the last few years than that of blasting in coal mines. This has been intensified by two very urgent considerations—the terrible loss of life resulting from explosions and the now established fact that coal dust plays an important part in these appalling catastrophes.

It seems only yesterday that the air was full of talk on the coal-dust theory, but that stage has been passed and it is no longer a theory but a demonstrated fact with which we have to deal.

It is not surprising that the full elucidation of the latter subject has led to important legislation in Great Britain—in fact, so impressed was the Government with the urgency of the matter and the necessity even of drastic measures, that in their anxiety for the public safety they have gone too far, and both employers and employees are agreed that in the absolute prohibition of blasting in some mines and the permission to blast with special explosives in others, there is a conflict of interests and in many cases, workman and masters have joined in a common appeal to the Secretary of State, to exercise his discretionary power and relax the stringent regulations, which both parties find onerous and deem unnecessary even on the ground of safety. No one can blame a government for excessive care in endeavoring to protect human life and prevent suffering—the difficulty is to decide how far it is necessary to go in this direction before the measures adopted become irksome or hampering to the industry without effecting the purpose in view.

There is little doubt that before many years elapse blasting of every kind will be prohibited in coal mines, and the best efforts of inventive talent should be directed to devise an efficient substitute. The lime cartridge has been tried and found wanting. The roller wedge only achieved a “success destime” and nothing has been found

so economical as a blasting agent, in coal, as "black powder. None of the high class explosives possess the special features which enable this powder to bring down a fall of coal easily and with the minimum of breakage.

To use non-scientific terms one may differentiate between black powder and other explosives thus—they bring down coal with a "shattering" effect. Every practical miner has discovered this for himself and it accounts mainly for his preference for the old explosive and his reluctance to abandon its use even at the demand of legislative enactment.

There are however, insuperable objections to the use of black powder in many mines; all based on the element of danger involved. They may be briefly summarised as follows:—

1. Liability to fire gas.
2. Liability to fire coal dust.
3. Heavy production of smoke.

The danger of the two former characteristics, is dependent largely on the tendency to "blown out" and "flaming" shots, and of the latter to the deleterious effect produced on the ventilation of the mine.

With these various considerations in view, I determined rather more than a year ago to introduce into Canada, a form of explosive which I had used with success in England and Wales, and which, possessing exactly the same chemical properties as ordinary black powder, had been so treated in the preparation that its objectionable features were reduced to the absolute minimum and its efficiency increased.

This compound is known as "compressed cartridge." It contains no new ingredient, being made from the best grain-blasting powder composed of 75 parts of refined saltpetre, 10 parts of pure sulphur and 15 parts best alder charcoal. The whole instead of being sold "loose" as is customary, being pressed into a cylindrical cartridge varying in diameter from $1\frac{3}{16}$ in. to $1\frac{3}{4}$ in.; and $2\frac{1}{2}$ in. in length, the pressure employed being 10 tons to the square inch and some harmless glucose coherent being used to ensure a solid and compact pellet.

None
nable
imum

black
with a
is for
xplo-
nd of

black
lved.

gely
f the
mine.
rather
osive
pos-
vder,
tures
l.
con-
sting
pure
eing
idge
ngth,
ome
pact

Fig. 1.

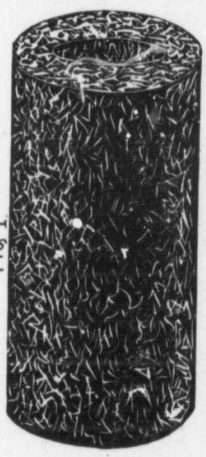
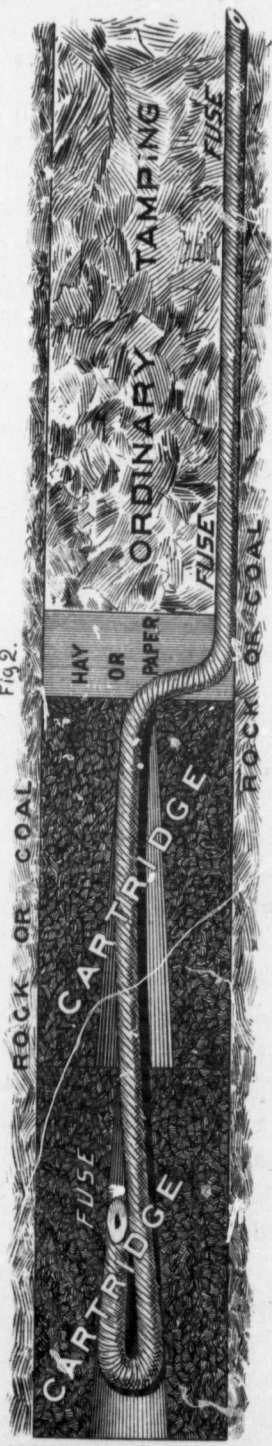


Fig. 2.



SECTION OF BORE-HOLE CHARGED WITH COMPRESSED CARTRIDGES.

Fig. 1. Shews a section of a cartridge with hole running through it for fuse.

Fig. 2. Shews two of the cartridges in position in a drill hole with tamping and fuse ready for firing.

Although this illustration is designed to shew fuze as the firing agent, there is no necessity for this as an ordinary squib will answer the purpose just as well.

Here let me state most emphatically that in no sense can it be claimed that this is a "safety" explosive. In the very nature of things such a claim would be an absurdity, but after ten years constant experience with the compressed cartridge I claim for it the following advantages.

1. Efficiency. The effect on the coal being the same as with loose black powder.
2. Economy. The cost is 25 per cent. greater, but the quantity required shows by weight a reduction of 30 per cent.
3. Greater safety. A flaming shot being rare.
4. Sanitariness. The production of smoke being almost nil—and the consequent effect on the ventilating current slight.
5. Convenience. It being so much easier to handle and carry.

Table I. Shews the comparative yield of coal by the use of loose powder and compressed cartridges at Caledonia mine in 1896.

Table II. Shews detailed result of a test made with compressed cartridges in Caledonia mine in March, 1897.

Table III. Shews the like at Dominion No. 1 in April, 1897.

In conclusion I would point out that a careful examination of these tables will show that all the advantages claimed in my summary are borne out by results and after experimenting with almost every known explosive over a period of 20 years. I have no hesitation in saying that in any mines where loose powder is permitted to be used, the substitution of compressed cartridges would be a gain on every ground. Whilst they are also safer than many of the so-called safety explosives.

TABLE I.—CALEDONIA MINE.

1896.	No. of Lbs. of Loose Powder.	No. of Lbs. of Compressed Powder.	No. of Tons of Coal Produced.	No. of Tons of Coal per Lb. of Powder.	REMARKS.
July	1,934	.....	12,028	6.21	Loose powder.
August	1,788	.....	11,649	6.51	"
September	845	.....	6,114	7.23	Part loose and part compressed.
September .....	.....	822	6,496	7.90	Compressed powder.
October .....	.....	1,413	11,895	8.41	"

TABLE showing the total No. of Tons of Coal per Lb. of Loose and Compressed Powder separately.

July, August and half of Sept....	4,567	.....	29,791	6.53	Loose powder.
Half of Sept. and month of Oct. ....	.....	2,335	18,391	8.22	Compressed powder.

TABLE II.—CALEDONIA COLLIERY.
STATEMENT showing results of Shots Fired in Wheel Section, March 2, 1897.

NAME.	Loose Powder, No. of Castor weighed.	No. of Oz. per Castor.	Miner's Opinion of Powder.	No. of Oz. of Loose Powder in Shot.	No. of Oz. Compressed Powder in Shot.	No. of Plugs Compressed Powder in Shot.	Length of Shot Fired.	Depth of Shot Fired.	Length of Drill-hole in Shot.	Side of Room Shot was fired.	Showed Smoke.	Showed Flame.	Condition of Shots Fired.	REMARKS.
N. B.....	1	9	21	None	21	8	ft. in. 8 9	ft. in. 4 4	ft. in. 4 4	H. side	None	None	Fair	Left bottom on next wall.
J. J. McL. . .	1	5½	21	21	.....	.....	7 7	5 0	4 1	L. side	Yes	Yes	Not good	Only half of shot came down.
C. B.....	1	4½	20	None	20	7½	8 4	5 4	4 4	L. side	None	None	Good	Some remained on wall, but loose.
D. & A. F..	1	6	27	.....	24	9	9 1	6 1	4 6	H. side	None	None	Fair	Left some on the wall.
Mick McL..	1	4¾	22½	.....	21	8	9 0	5 4	4 3	L. side	None	None	Good	Blew well.
N. McK.....	1	4¾	23¾	.....	21	8	7 6	5 4	4 0	H. side	None	None	Good	Blew well.
A. T. McD..	1	5	25	.....	24	9	8 4	5 9	4 9	H. side	None	None	Good	Blew very well.
J. O.....	1	5½	25	.....	24	9	9 3	5 4	4 4	L. side	None	None	Good	Blew well.

* Not measured.

TABLE III.—DETAILS OF Blasting at I omunion with Nova Scotia Compressed Cartridges, April 22 & 23, '97.

NAME.	Location.	Depth Mining.	Depth Bore.	Width Mining.	Quantity Loose Powder Estimated.	Weight Compressed Used.	Weight of Coal.	REMARKS.
		ft. in.	ft. in.	ft. in.	oz.	oz.		
J. M.	No. 2	5 2	4 6	10 0	26	20	8.0	Hung (undercharged for so wide a shot).
"	"	5 8	4 6	7 6	26	20	8.0	Good shot.
"	"	5 0	4 0	11 6	31	25	8.0	Fair shot; hung; cut down.
J. H.	"	5 2	4 4	8 0	26	20	8.0	Good shot.
"	"	4 9	4 5	11 3	31	20	7.5	Very good shot.
"	"	5 3	5 2	9 5	24	18	7.5	Good shot.
"	"	5 3	5 1	9 2	28½	21½	7.5	Fair shot.
"	"	5 0	4 6	8 4	28½	22½	7.5	"
"	"	4 9	4 2	9 3	(30)	.....	7.4	Good shot (loose powder flamed).
E. B.	"	5 0	4 4	10 8	32	25	7.4	Very good shot.
"	"	4 9	4 8	12 0	40	30	7.5	Both shots down; average X cut work.
"	"	4 1	3 8	12 9	32½	.....	7.5	Loose flamed badly.
"	"	5 0	4 2	11 6	(20)	.....	7.0	Hung.
"	"	4 9	4 1	11 4	28½	.....	7.0	Good shot.
"	"	4 2	4 0	10 8	30	22½	7.0	Splendid shot.
"	"	4 8	3 10	9 6	30	22½	7.0	"
"	"	3 9	3 9	11 9	42	31½	7.0	Good shots.
"	"	4 4	3 7	11 9	42	30	7.0	Good shot.
"	"	4 8	4 2	9 5	26	20	7.0	"
"	"	4 8	5 1	11 7	32½	25	7.0	"
					556½	396		

NOTE.—The quantity of compressed cartridges actually used is 71% of the loose powder estimated by the men themselves. No flame was seen from the c. c. Each loose powder shot flamed and smoked badly.—W. B.

Notes on a Laboratory Amalgamating Device and Comparisons with Actual Mill Results.

H. A. GUESS, M.A., Keewatin, Ont.

It is with the idea that they may prove of interest to those engaged in milling, that the following notes are offered.

The method outlined grew out of the necessities of the case in connection with the operating of the Ottawa Gold Milling and Mining Company's Reduction Works at Keewatin, Ont.

At this plant, which is a customs mill, there is in connection with the mill a well arranged sampling works.

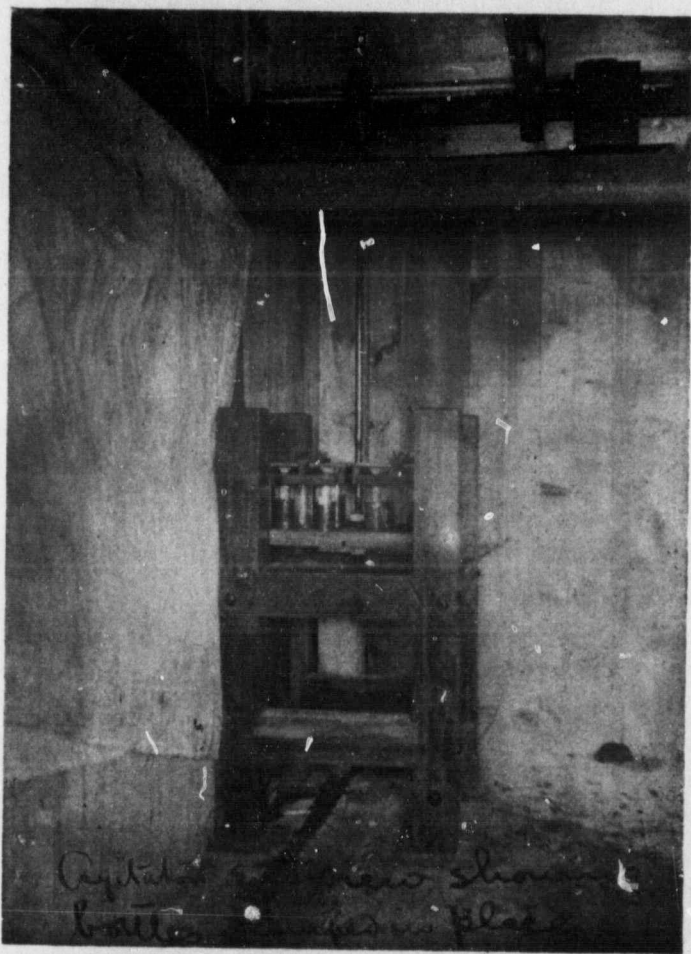
The plan pursued by the company makes it optional with shippers of lots of over 50 tons, to either sell the ore on the results of the sampler, or to have it actually milled and cleaned up by itself. With lots under 50 tons, no separate run and clean-up is made, but the ore-lot is sampled, and the percentage of the assay value which can be saved by amalgamation and concentration is determined on the sample thus taken, and the lot paid for on that basis.

In making the laboratory amalgamation tests on each sample, to determine the percentage of saving, agitation with mercury of the pulp, in stoppered bottles, was decided on as the most rapid and satisfactory method.

Various motions for this agitation were at first tried, among others the side shake of the Gates vanners; clamping the bottles to a revolving counter-shaft, fastening the bottles (in a suitable receptacle) to the stem of a dropping stamp, etc. None of these gave entirely satisfactory results, however.

The device which was finally arranged, and has been in use here continuously for the last six months, giving perfect satisfaction, will be readily understood by a glance at the accompanying photographs. The vertical agitation is given to the little table, on which the bottles sit, by a 2 in. eccentric run at 350 revolutions per minute.

Series of experiments were made, using the same pulps and same proportion of mercury, but giving different periods of time for the agitation, in order to see the period beyond which no further amalgam-



ation would take place. Twenty minutes was found to be quite sufficient, but in practice thirty is used.

The method used in determining the milling value may be outlined thus:—

The pulp from the sampling works at the mesh of the mill (usually 40) is carefully sampled in the regular way, a portion taken through 120 mesh, on which from one-half dozen to three dozen assays (depending on the size of the lot, richness, condition of the free gold, etc.) are made, to determine the total gold contents.

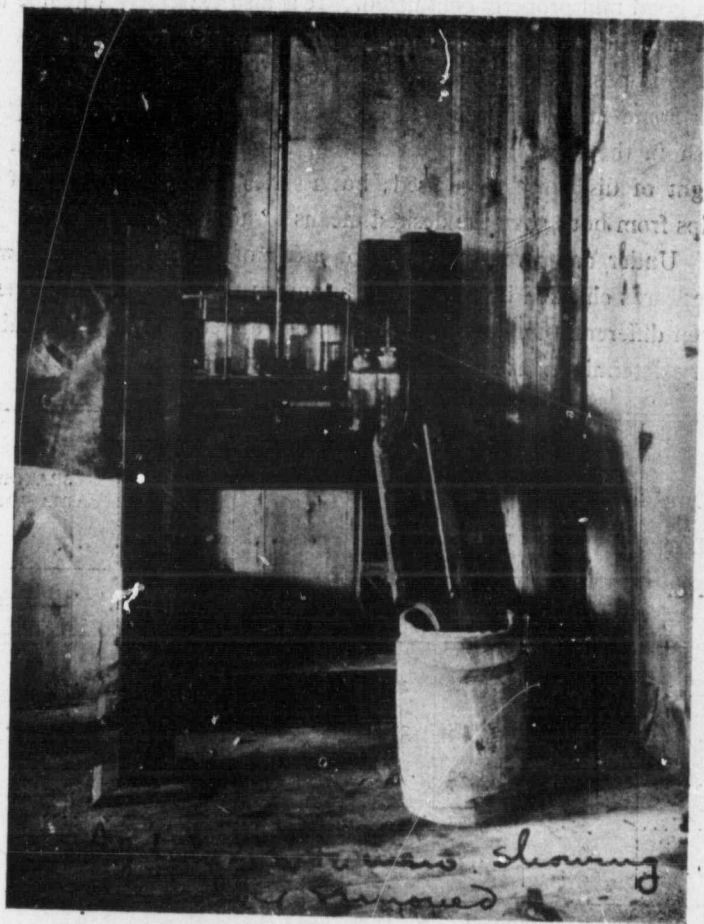
From the 40-mesh lot, from three to twelve charges of 100 grammes each are weighed into wide-mouthed bottles, water, and mercury, (about 10 grammes) added, and put on the agitator, for 30 minutes. The contents of each bottle, panned separately, the mercury panned out and discarded, the sulphide concentrates panned out, dried, weighed to determine percentage, and dumped into an assay crucible, the resultant gold being calculated on the basis of 100 gm. charge; the value per ton of concentrates being obtained by calculation back; the tailing evaporated, put through 120-mesh, and assay value determined.

The means of the values thus found for the concentrates, and for the tailings, are then taken, and the amalgamable gold determined by difference from the total gold contents value.

The comparatively small quantity of 100 grms. taken, and doing a sufficient number of "checks," has been found to be more satisfactory than using a kilogram, as was first tried, as in the after separation of the mercury, concentrates, and tails, the smaller quantity is susceptible of much more delicate manipulation, and the operations can be carried out with the nicety of a chemical analysis. In panning, 10 in. diam. aluminum pans are used, with rather steep sides.

In order to test the accuracy of the method thoroughly, the different small lots, after being sampled, and purchased on the determinations thus made, were stored, and run through the mill separately and cleaned up; the bullion assayed by itself, and results compared with that previously determined in the laboratory. This proved so satisfactory that, after a time, the small lots were allowed to accumulate, and several run through the mill together. The results were found equally satisfactory, so that now the small lots are all dumped together in the storage bins, and no separate clean-ups made.

In the concentration of sulphides, a factor has to be used in determining mill results, as closer concentration can be made in panning in



this way, in the laboratory, than can be made by any mechanical concentrators.

The method here outlined has enabled the company to handle small ore shipments at a milling rate otherwise impossible, should a

separate clean-up be made, and is valuable in laboratory mill-tests on small samples of a few pounds, up to a few tons, in determining with exactness the saving that can be made in free gold and concentrates, in a good mill properly conducted. It is also extremely valuable to a mill manager in determining whether his mill-men are saving all the free gold possible in the ore at that mesh.

Some little difficulty was encountered at first in determining the mesh in the laboratory, equivalent to the mesh of the mill, with the height of discharge there used; but a series of screen analyses of the pulps from both gave the desired means of adjustment.

Under are given the results on a few of the ore-lots, which were afterwards checked by separate clean-ups in the mill; and also one of seven different lots, dumped together, and milled, with results of laboratory determinations and mill results, side by side.

ORE LOT No.	NET WEIGHT.	LABORATORY RESULTS.			MILL CLEAN-UP.	LABORATORY. VARIATIONS.	
		Assay Value.	Free Gold.	Total Free Gold.	Bullion Clean-up.		
	Tons.	\$ p. ton.	\$ p. ton.	\$ p. ore lot.	\$ p. ore lot.	% of total value.	
A	18.8	24 70	20 50	385 40	390 29	....	1%
B	22.8	24 08	20 90	476 50	468 60	1.5%	....
C	38.0	4 12	3 51	133 38	131 61	0.9%	....
D	49.5	2 53	1 65	81 67	84 80	....	2.5%
*E	195.97	14 42	11 29	2,212 50	2,226 97	....	0.5%

*Seven lots combined.

s on
with
ates,
to a
the

the
the
the

ere
e of
or-

y.
s.

ue.

1%

5%

5%

MEETINGS.

MEETINGS

GENERAL MEETING.

MONTREAL.

FRIDAY, 4TH MARCH, 1898.

A large and representative meeting of mining engineers, mine owners, and others interested in the mining industries of the Dominion was held in the Club Room, Windsor Hotel, Montreal, on the evening of Friday, 4th March, to complete the organization of the Canadian Mining Institute.

Mr. George B. Drummond (Canada Iron Furnace Co., Montreal) presided.

CONSTITUTION AND BY-LAWS.

The draft Constitution and By-Laws was considered clause by clause and adopted. (See the Appendix to this volume).

ELECTION OF AN HONORARY MEMBER.

Mr. John Birkinbine, M.E., Philadelphia, Pa., Past President of the American Institute of Mining Engineers, was unanimously elected an Honorary Member, on the motion of Dr. W. L. Goodwin, seconded by Mr. Wm. Blakemore.

ELECTION OF OFFICERS.

The following were elected officers and members of Council for the ensuing year :—

PATRON.

His Excellency Lord Aberdeen, Governor-General.

PRESIDENT.

Mr. John E. Hardman, S.B., M.E., Montreal.

VICE-PRESIDENTS.

Mr. W. A. Carlyle, Ba.Sc., M.E., British America Corporation, Ltd., Rossland, B.C.

Dr. George M. Dawson, C.M.G., Director, Geological Survey of Canada, Ottawa, Ont.

Mr. John Blue, C. & M.E., Eustis Mining Co., Capelton, Que.

Mr. Chas. Fergie, M.E., Intercolonial Coal Co., Westville, N.S.

SECRETARY.

Mr. B. T. A. Bell, Editor *Canadian Mining Review*, Ottawa, Ont.

TREASURER.

Mr. A. W. Stevenson, C.A., Bank of Toronto Chambers, St. James Street, Montreal.

COUNCIL.

Province of British Columbia.

Mr. John B. Hobson, M.E., Con. Cariboo Hydraulic Mining Co., Quesnelle Forks, B.C.

Mr. Wm. Blakemore, M.E., Crow's Nest Pass Coal Co., Coal Creek, B.C.

Mr. Frank C. Loring, M.E., Josie Gold Mining Co., Rossland, B.C.

Province of Nova Scotia.

Mr. Henry S. Poole, M.A., A.R.S.M., Acadia Coal Co., Stellarton, N.S.

Mr. Wilbur L. Libbey, Brookfield Mining Co., N. Brookfield, N.S.

Major R. G. Leckie, Truro, N.S.

Mr. Clarence H. Dimock, Wentworth Gypsum Co., Windsor, N.S.

Province of Quebec.

Mr. George R. Smith, M.L.A., Bell's Asbestos Co., Thetford Mines, Que.

Mr. George E. Drummond, Canada Iron Furnace Co., Montreal.

Mr. J. Obalski, M.E., Inspector of Mines, Quebec.

Mr. John J. Penhale, M.E., United Asbestos Co., Black Lake, Que.

Province of Ontario.

Mr. Archibald Blue, Director of Mines, Toronto.

Mr. James McArthur, Canadian Copper Co., Sudbury.

Mr. Frederick T. Snyder, Ottawa Gold Milling and Mining Co., Keewatin, Ont.

Mr. W. Hamilton Merrit, A.R.S.M., M.E., Toronto.

INCORPORATION.

On motion of the Secretary it was unanimously resolved to have the Institute incorporated by Act of Parliament.

This being all the business the meeting adjourned.

MEETING OF COUNCIL.

MONTREAL.

MONDAY, 7TH MARCH, 1898.

A meeting of Council was held in the Windsor Hotel on the evening of Monday, 7th March.

Present—Messrs. Hardman, Fergie, Dimock, G. E. Drummond, A. W. Stevenson, Penhale and the Secretary.

The Secretary read the minutes of meeting held on the 4th March, which were confirmed and signed.

AFFILIATION OF QUEBEC ASSOCIATION.

Mr. A. W. Stevenson moved the election of the following members of the General Mining Association of the Province of Quebec, under the provisions of Paragraph V. of the Constitution and By-Laws:

Allan, W. A., Ottawa.	Hopkins, F. H., Montreal.
Adams, Capt. R. C., Montreal.	Higginson, J. F., Buckingham, Que.
Blue, John, Capelton.	Hall, P. P., Quebec.
Budden, H. A., Montreal.	Jenckes, J. M., Sherbrooke.
Bonner, W. T., Montreal.	Johnson, A. S., Thetford Mines.
Brown, J. Stevenson, Montreal.	King, Col., Sherbrooke.
Baker, H. C., Perkins Mills.	King, James, Quebec.
Belcourt, N. A., Q.C., Ottawa.	Lawrence, H. D., Sherbrooke.
Brown, D. A., Boston.	Marcuse, B., Montreal.
Bell, B. T. A., Ottawa.	Mitchell, J. S., Sherbrooke.
Bacon, F., Montreal.	Macdonald, A., St. John.
Bacon, T. P., Montreal.	Macdougall, George, Montreal.
Brainerd, Dwight, Montreal.	McCall, J. T., Montreal.
Buck, F. P., Sherbrooke.	McCuaig, Clarence, Montreal.
Bowen, Cecil H., Cobourg.	Nichols, W. H., New York.
Boas, F., Danville.	Penhale, John J., Black Lake.
Cirkel, F., Ottawa.	Pyke, J. W., Montreal.
Cooper, James, Montreal.	Peacock, J. W., Montreal.
Carrier, C. H., Levis.	Reed, Dr. James, Reedsdale.

Colby, Hon. C. C., Stanstead.	Rykert, E. G., Montreal.
Drummond, T. J., Montreal.	Smith, J. Burley, Rat Portage.
Drummond, John J., Radnor Forges.	Shirley, Lionel H., Montreal.
Drummond, G. E., Montreal.	Smillie, Dr. N. C., Gaspé.
Donald, J. T., Montreal.	Smith, George R., Thetford Mines.
DeCourtenay, H. W., Montreal.	Spafford, S. L., Capelton.
Drummond, Hon. G. A., Montreal.	Simpson, S. J., Montreal.
Eustis, W. E. C., Boston.	Stevenson, A. W., Montreal.
Foley, James, Montreal.	Stephens, W. Barclay, Montreal.
Fleck, A. W., Ottawa.	Tuck, T. J., Sherbrooke.
Gilman, E. W., Montreal.	Taylor, C. H., Montreal.
Hopper, R. T., Montreal.	Woodside, J. W., Sherbrooke.
Hersey, Milton L., Montreal.	

Mr. C. H. Dimock having seconded the motion, these names were added to the list of members.

PUBLICATION OF CONSTITUTION.

On motion of Mr. Penhale, seconded by Mr. Stevenson, the Secretary was authorized to print copies of the Constitution and By-Laws, together with the names of members; also to issue a circular letter to all Canadian mining men inviting them to become members of the Institute.

SEAL.

On motion of Mr. Drummond, seconded by Mr. Dimock, it was resolved to adopt, with slight amendment, the design of the late Federation as the Seal of the Institute.

INCORPORATION.

In accordance with the resolution of last meeting the Secretary was instructed to communicate with Messrs. Gemmill & May, barristers, Ottawa, with the object of securing, at the present Session of Parliament, an Act of Incorporation.

APPROPRIATIONS.

It was moved by Mr. Penhale, seconded by Mr. Drummond, that the income of the Institute be appropriated during the ensuing year as follows:

For printing, engraving and publishing.....	\$600
Operating expenses.....	300
Library.....	100
Treasurer.....	100
Secretary.....	400
A total of.....	<u>\$1,500</u>

CERTIFICATE OF MEMBERSHIP.

The Secretary was instructed to prepare a suitable design for a Certificate of Membership in the Institute.

The meeting then adjourned.

MEETING OF COUNCIL.

MONTREAL.

FRIDAY, 3RD JUNE, 1898.

A meeting of Council was held in the Library of the Institute, Windsor Hotel, Montreal, on Friday evening, 3rd June, 1898. The President in the chair.

The Secretary read the minutes of previous meeting, which were confirmed and signed.

NEW MEMBERS.

The following nominations for membership were approved:—

- | | |
|---|--|
| Aldridge, W. H., M.E., Trail, B.C. | Hill, Leslie, C.E., Vancouver, B.C. |
| Brelich, Henry, M.E., Nelson. | Holdich, A. H., Nelson, B.C. |
| Brent, Chas., M.E., Rat Portage, Ont. | Johnstone, R. C. Campbell, Nelson, B.C. |
| Bucke, M. A., M.E., Kaslo, B.C. | |
| Boss, J. E., Spokane, Wash. | Kirkegaard, P.M.E., Deloro, Ont. |
| Champion, James, C. & M.E., Barkerville, B.C. | Kehoe, Henry, M.E., Rossland, B.C. |
| Coste, E., M.E., Toronto, Ont. | Low, Albert P., Ottawa. |
| Cowans, J. R., M.E., Springhill, N.S. | Leake, H. Perry, Revelstoke, B.C. |
| Clarke, Roy, M.E., Rossland, B.C. | Leckie, J. E., M.E., Rossland, B.C. |
| Crosdaile, H. E., Nelson, B.C. | Macdonald, Bernard, M.E., Dufferin Mines, N.S. |

Dick, Alexander, Rossland, B.C.	Montpetit, Dr. Elzear, Montreal.
Deacon, T. R., C.E., Rat Portage, Ont.	Mason, F. H., F.C.S., Halifax, N.S.
Douglas, Lord Sholto, Bruce Mines, Ont.	McConnell, Rinaldo, Mattawa, Ont. McCuaig, Clarence J., Montreal.
Evans, J. W., C.E. & M.E., Sudbury, Ont.	Nelson, Chas. Montreal. Newman, W. T., Vancouver, B.C.
Fowler, S. S., M.E., Nelson, B.C.	Nankivell, E. J., Hall's Siding, via Nelson, B.C.
Flaherty, R., M.E., Rat Portage, Ont.	
Guess, Geo. A., Greenwood, B.C.	Parker, Chas., Rossland, B.C.
Gue, T. R., Halifax, N.S.	Stuart, Geo. M.E., Truro, N.S.
Hedley, Robt. R., Nelson, B.C.	Topping, E. S., Trail, B.C.
Hayward, A. A., Halifax, N.S.	

BILL OF INCORPORATION.

The Secretary reported that, in accordance with instructions, he had consulted with Messrs. Gemmill & May respecting the preparation of a suitable Act of Incorporation, and a Bill had been drawn up and adopted by the House of Commons and the Senate to the following effect:—

BILL NO. 116.

AN ACT TO INCORPORATE THE CANADIAN MINING INSTITUTE.

WHEREAS the persons hereinafter named have, by their petition, represented that an association known as the Canadian Mining Institute has been founded by the said persons, and others, for the following purposes, namely: First, to promote the arts and sciences connected with the economical production of valuable minerals and metals, by means of meetings for the reading and discussion of technical papers, and the subsequent distribution of such information as may be gained through the medium of publications. Second, the establishment of a central reference library and a headquarters for the purpose of this organization. Third, to take concerted action upon such matters as affect the mining and metallurgical industries of the Dominion of Canada. Fourth, to encourage and promote these industries by all lawful and honorable means. And whereas the said persons have prayed that it be enacted as hereinafter set forth, and it is expedient to grant the prayer of the said petition: Therefore Her Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

1. John E. Hardman, George M. Dawson, William A. Carlyle, Charles Fergie, John Blue, B. T. A. Bell, A. W. Stevenson, James McArthur, Archi-

bald Blue, William Hamilton Merritt, F. T. Snyder, Henry S. Poole, Wilbur L. Libbey, Robert G. Leckie, Clarence H. Dimock, Geo. E. Drummond, Geo. R. Smith, J. Obalski, John J. Penhale, R. G. McConnell, Frank C. Loring, John B. Hobson and Wm. Blakemore, together with such persons as hereafter become members of the Institute, are hereby incorporated under the name of "The Canadian Mining Institute," hereinafter called "the Institute," for the purposes set forth in the preamble.

2. The Institute may acquire and hold such lands and property as are necessary to carry out the objects and purposes for which incorporation is sought; provided that the annual value of the real estate held at any one time for the actual use of the Institute shall not exceed five thousand dollars.

3. The Institute may make such by-laws, not contrary to law, as it deems expedient for the administration and government of the Institute.

4. The affairs and business of the Institute shall be managed by such officers and committees, and under such restrictions touching the duties and powers of such officers and committees as may be prescribed by by-law.

5. The head office of the Institute shall be in the city of Montreal, or in such other place as may, from time to time, be determined by a vote of two-thirds of the members of the Institute.

The Secretary: Valuable assistance has been given to the passing of the Act by Messrs. D. C. Fraser, M. P., Allan Haley, M. P., and C. J. Logan, M. P., to whose influence also the Institute was indebted for the remission of the fees ordinarily charged for the enactment of such a Bill.

Mr. R. T. Hopper moved, seconded by Mr. A. W. Stevenson, that the Secretary be instructed to convey the cordial thanks of the members to Mr. Haley, Mr. Fraser and Mr. Logan for their valuable co-operation. Carried.

BOOKS FOR THE LIBRARY.

The Secretary reported that he had shipped to the Library four cases of books and periodicals, and that, according to instructions of Council, he had purchased the first 15 volumes of the Transactions of the American Institute of Mining Engineers from the estate of the late Sir John A. Macdonald.

On motion of Mr. Stevenson, seconded by Mr. T. J. Drummond, the President was authorized to negotiate for the acquisition, by pur-

chase or otherwise, of the remaining volumes necessary to complete the set of these valuable proceedings.

DOMINION GRANT.

The Secretary was pleased to report that as the result of their interview with the Premier and the Finance Minister, the sum of one thousand dollars appeared in the estimates as a grant towards the work of the Institute.

LIBRARY APPROPRIATION.

On motion of Mr. Stevenson Brown, the following amounts were voted towards the equipment and maintenance of the Library and Reading Room of the Institute:

Windsor Hotel—rent 1898-99.....	\$400 00
Purchase of new books and maintenance.....	300 00
	\$700 00

ELECTION OF HONORARY MEMBERS.

On motion of the Secretary, the following were unanimously elected Honorary Members of the Institute:

Dr. A. R. C. Selwyn, C.M.G., late Director of the Geological Survey of Canada, Vancouver.

Hon. W. S. Fielding, M.P., Minister of Finance, Ottawa.

LIBRARY COMMITTEE.

The following were elected members of the Library Committee during the ensuing year:—Messrs. H. W. DeCourtenay, J. Stevenson Brown, George E. Drummond, the President and Secretary. Mr. Drummond to be convenor.

ELECTION OF A MEMBER OF COUNCIL.

The Secretary having explained that Mr. R. G. McConnell, who had been elected a member of Council for British Columbia, in view of his acceptance of the position of Provincial Mineralogist, had decided to remain on the staff of the Geological Survey; it would, therefore, be advisable to elect a resident of British Columbia on the Council.

On motion of Mr. Drummond, seconded by Mr. DeCourtenay, Mr. S. S. Fowler, M.E., Consulting Engineer to the New Gold Fields of British Columbia, Nelson, was duly elected to fill the vacancy.

BRITISH COLUMBIA MEETING.

Mr. McCuaig recommended holding a meeting of the members in British Columbia in the Fall, and the suggestion being approved the Secretary was instructed to communicate with the local members at Nelson, and if the matter met with their approval to proceed with the necessary arrangements.

Mr. Meredith recommended that the minutes of all meetings be printed.

The Secretary hardly thought it necessary to go to this expense as particulars of all meetings were published in their Transactions.

After some discussion, the Secretary was instructed to distribute among the members, the minutes of this meeting.

This being all the business the meeting adjourned.

A meeting of the Library Committee was held afterwards when arrangements were made to have the rooms of the Institute in the Windsor Hotel suitably fitted up and equipped.

MEETING OF COUNCIL.

—
MONTREAL.
—

FRIDAY EVENING, 9TH SEPTEMBER, 1898.

A joint meeting of the Council and Library Committee was held in the Reading Room of the Institute, Windsor Hotel, Montreal, on Friday evening, 9th September. Present: Messrs. J. E. Hardman, John J. Penhale, J. Obalski, A. W. Stevenson, R. G. Leckie, J. Stevenson-Brown, and the Secretary. The President in the chair.

The Secretary read the minutes of meeting held on 12th August. At the suggestion of the President, the minutes, in so far as they related to the election of new members, were amended to read "the following nominations for membership were approved by the Council." They were then passed.

REQUEST FROM THE FEDERATED INSTITUTION OF MINING ENGINEERS TO BECOME A CORRESPONDING SOCIETY.

The following letters from the Federated Institution of Mining Engineers were read by the Secretary :—

29th January, 1898.

“DEAR SIR,—The Council of this Institution have pleasure in requesting the Canadian Mining Institute to become a Corresponding Society, in accordance with the conditions named in the following resolution :—

It was suggested that the following privileges should be offered to each of the Mining Societies of the Empire, as shall from time to time be recognized by the Council as Corresponding Societies of this Institution. A copy of the publications of the Institution shall be sent to such Societies; and, if advised in each year in advance, the members shall be allowed to purchase copies of the same at 20s. per annum, post free, and that similar facilities be afforded to the members of this Institution by the Corresponding Societies.

If this proposal meets the acceptance of the Council and members of your Institute, I should be pleased to be advised as to the terms upon which your publications would be supplied to the members of this Institution.

At present the publications of this Institution in each year form 2 volumes, each containing upwards of 750 pages, and the above charge of 20s. per annum, is based upon a rate of about 1s. 4d. per 100 pages, including postage.

A similar communication has been addressed to the Australian Institute of Mining Engineers.”

Yours faithfully,

(Signed) M. WALTON BROWN,
Secretary.

The Secretary,
Canadian Mining Institute.

CORRESPONDING SOCIETIES.

29th March, 1898.

DEAR SIR,—Since writing to you on January 29th, the Council have considered the matter and are willing that your Society should be accepted as a corresponding Society of this Institution, in accordance with their resolution conveyed in my previous letter. As I have received no communication from you, the Council suggest that 5s. 6d. per volume should be paid by members of this Institution for copies of the Transactions of your Society, viz., at the rate of 1s. 4d. per 100 pages.

On receipt of your reply, I will advertise the arrangement in the Transactions, and as soon as possible send you list of members desiring to purchase the publications of your Institution.

The Council also approve the suggestion that members of Corresponding Societies should be allowed to attend any of their meetings, notice of which is published from time to time in the *Colliery Guardian*, *Engineer*, *Engineering*, and other papers.

Your faithfully,

(Signed) M. WALTON BROWN,

Secretary.

B. T. A. BELL, Esq.

On motion it was resolved to accept the offer of the Federated Institution of Mining Engineers, and that the Proceedings of the Institute be sent to members of that body at cost price of publication.

PROPOSED MINING AND METALLURGICAL EXHIBITION
IN LONDON.

The following letter was read from the Incorporated London Chamber of Mines:—

26th May, 1898.

DEAR SIR,—I think it advisable to mention to you that this Chamber is promoting a Mining, Metallurgical and Machinery Exhibition in London, from May to August next year. Exhibits being afterwards—if necessary—forwarded to the Paris Exhibition for the following year. Ontario is a mining country of too great promise to let this opportunity pass without some representation, and I would venture to suggest that there is no man in your Province, so far as I can learn, who could take steps in this matter with more right and effect than yourself. We are in correspondence with the B. C. and Australasian Governments and have already approached the High Commissioner for Canada. The Chamber expects each Government to vote a sum towards an official exhibit of minerals, &c. Therefore, I would be glad to hear from you in regard to the matter.

I am, Dear Sir,

Yours faithfully,

(Signed) E. JEROME DYER,

Secretary.

B. T. A. BELL, Esq.

LONDON, E.C., 11th August, 1898.

The Council of the Incorporated London Chamber of Mines, desire to notify that they have definitely arranged with the London Exhibitions, Limited, to embody their Mining, Metallurgical, and Machinery Exhibition with the Greater Britain Exhibition, to be held at Earl's Court next year. This arrangement is chiefly due to insufficiency of time left to arrange for the International Mining Exhibition which the Chamber proposed to hold, and also to the fact that the Earl's Court authorities have agreed to set aside a larger area for mining exhibits than previously arranged, and that it has now been decided to reserve a considerable section of Earl's Court as a separate Mining Court at the Greater Britain Exhibition of next year.

The London Exhibitions Company have handed over to the London Chamber of Mines the entire control of this Mining Court, which comprises several spacious and imposing buildings, it being agreed that as far as can be managed the Court shall comprise the Ducal Hall and the Prince's Hall, together with other excellent sites, and a large area of outdoor space.

All applications for exhibiting space in the Mining Court, must be made to this Chamber on the enclosed form (which embodies the rules and regulations binding upon all exhibitors) and be accompanied by a deposit of one-third the total rent, and the balance of two-thirds must be paid within fourteen days after notice of allotment, failing which deposits will be forfeited. Allotment will be made early in October, and sites will be apportioned according to priority of application, in proportion to the extent of space required by each applicant, the amount of space available, and the particular character of the exhibits.

It must be distinctly understood that applications will be opened on October 1st, and any applications arriving after that date can only be considered in regard to any space that may then remain available.

The price for space for the whole season is 6s. per square foot for space under cover, and 3s. per square foot for outdoor space. Exhibitors requiring isolated exhibits or more than one frontage must pay for additional space required for extra passage-ways. Motive power, when it can be supplied, shall be a separate charge subject to arrangement.

Special terms are quoted to Governments applying for large space.

The Earl's Court authorities have drafted the following paragraph for publication with this circular:—

“This circular is issued with the London Exhibitions Company's knowledge and approval, whose rules and regulations for the Greater

" Britain Exhibition will be binding upon all exhibitors. (Signed) R. Claude
" Garnett, Secretary of the London Exhibitions, Limited, August 9, 1898."

Further particulars may be obtained from the Secretary of the Chamber.

(Signed) E. JEROME DYER,
Secretary.

THE SECRETARY explained that in connection with this matter he had been visited by Mr. Wm. Thompson, M.E., of London, England, a member of the Chamber, with a view to securing the co-operation of the Institute towards the proposed Exhibition, and it had been pointed out to him that inasmuch as the minerals were owned and controlled by the Provinces, the better course would be to approach the Mining Departments of the local Governments and the Hon. the Minister of the Interior. He understood that Mr. Thompson had interviewed Sir Wilfred Laurier and that the Chamber had since written to the local Governments as suggested.

The matter then dropped.

TREASURER'S STATEMENT.

THE TREASURER, submitted statement of receipts and disbursements to date, showing a cash balance on hand of \$244.08, and submitted a number of letters from the Hon. the Minister of Finance, with respect to the payment of the Grant of \$1,000 voted by Parliament to the Institute.

ADDITIONS TO THE FREE LIST.

THE SECRETARY intimated a resolution adopted by the Mining Society of Nova Scotia at its last meeting, with respect to securing the co-operation of the Institute towards having admitted to the present Free List of Mining machinery, the following articles:—

Chrome and manganese steel shoes and dies, brattice cloth and ventilating fans for colliery purposes.

THE PRESIDENT was of opinion that the Institute should refrain from interfering with matters of trade policy, and submitted the following excerpt from a letter received from a member of the Council, Mr. Archibald Blue, Director of Mines for Ontario:—

"Concerning the recommendation from the Mining Society of Nova Scotia, I desire to enter a protest against the practice on the part of our Institute of meddling with matters which must be regarded as purely political. Personally I favor a steady approach towards free trade, not merely in mining machinery, but also in many other products; but I think it is a mistake to use our Institute to shape the trade policy of the country, one way or another. I think we should avoid all questions which are calculated to create divisions along political lines, and you know how deeply the trade question is in politics in this country."

Yours very truly,

(Signed) A. BLUF.

B. T. A. BELL, Esq.

MR. STEVENSON-BROWN called attention to clause C, of the 2nd paragraph of the Constitution and By-laws, whereby the Institute was authorized "to take concerted action upon such matters as affect the mining and metallurgical industries of the Dominion."

After further discussion, it was moved by Mr. Penhale, seconded by Major Leckie:—

Resolved, That the sense of this meeting is opposed to the introduction into the affairs and proceedings of the Institute of any matters affecting or relating to the legislation of trade policy of the Dominion or of the Provinces.

The motion was adopted.

The members thereafter discussed certain arrangements for the improvement of the Library and Reading Room and the ensuing annual meetings.

MEETING OF COUNCIL AND LIBRARY COMMITTEE.

—
MONTREAL.
—

FRIDAY, DECEMBER 2ND, 1898.

A joint meeting of the Council and Library Committee was held in the Library of the Institute, Windsor Hotel, Montreal, on 2nd December. Present: Messrs. Hardman, R. G. Leckie, J. Stevenson-Brown, George E. Drummond, A. W. Stevenson, and the Secretary. The President in the chair.

The minutes of previous meeting were read, confirmed, and signed by the President.

NEW MEMBERS.

The nomination of the following new members was approved :—

M. S. Davys, Mining Engineer, Nelson, B.C.

Thos. Brown, Assayer, Nelson, B.C.

J. B. Tyrrell, M.A., Mining Engineer, Dawson City, N.W.T.

A. T. Tye, Tustin, Cal.

J. N. S. Williams, Victoria, B.C.

Francis T. Peacock, Montreal.

Elliott T. Galt, Lethbridge, N.W.T.

R. Randolph Bruce, Windermere, B.C.

Neil McLeod Curran, Fort Steele, B.C.

Charles F. Law, Vancouver, B.C.

Leopold Meyer, Ottawa, Ont.

Alex. M. Hay, Rat Portage, Ont.

TRANSACTIONS AMERICAN INSTITUTE OF MINING ENGINEERS.

THE PRESIDENT reported that he had been in communication with Dr. R. W. Raymond, with a view to securing the volumes necessary to complete the sett in their Library of the Transactions of the American Institute of Mining Engineers, and that Mr. Lewis, a member of the Council of that Institute and one of their members, had promised to use his influence to secure them for the Library.

DOMINION GOVERNMENT GRANT.

THE TREASURER reported that he had received from Hon. W. S. Fielding, Minister of Finance, the Grant of \$1,000 voted by Parliament to the Institute.

LONDON MINING EXHIBITION—YUKON MINING LAWS.

THE SECRETARY read several letters, received since last meeting from the Incorporated London Chamber of Mines, giving further particulars of the proposed Exhibition of Mining and Metallurgy to be held under its auspices next year; also forwarding copy of a Petition asking for a revision of the Yukon Mining Regulations. This Petition

reproduced below, the Chamber was about to present to the Dominion Government, and it sought the co-operation of the Institute.

(COPY) PETITION RE YUKON REGULATIONS.

"We beg on behalf of the undermentioned Companies registered in London operating in the British Yukon, and also on behalf of the British interests generally represented in this Chamber and concerned in the development of North Western Canada, to call attention to the very onerous character of the Mining Regulations now enforced in that district.

We refer more especially to the 10 per cent. royalty levied on the gross output of gold, and to the terms of the Government lien on alternate and abandoned claims, (see clauses 16, 30, 31 and 39 of the enclosed copy of the Yukon Mining Regulations). The first of these matters is, however, the more urgent question at the present time. The conditions and cost of working claims in the Klondyke district are such that a charge of 10 per cent. on the gross yield—even after the deduction of £500 before levying the royalty—will in many cases prevent any profit from being obtained in these operations. This regulation will therefore cause many claims of inferior value to be either worked in an ineffective manner, viz., in a manner simply to keep the title alive, or will occasion the total abandonment of claims of this description.

There are other evil effects arising out of these prohibitive impositions such as the many forms in which they encourage deception and law-evasion, and that they are largely instrumental in diverting desirable enterprise to the neighboring fields of Alaska to the detriment of the British Yukon and its vested interests.

There is no occasion to expatiate here upon the grievous effect of clause 16, referring to the Government reservation of alternate claims, and clause 39, referring to the drastic conditions upon which claims are deemed abandoned. We rely upon your good sense of the restrictions which these conditions place upon investigating enterprises to give these matters your prompt attention.

It is not necessary for us to dwell upon the injurious effects of these measures and the consequence to which it is universally considered they will lead. It is sufficient to say that these results would be at variance with the general welfare of Canada, while they will discourage investors in Canadian enterprises resident in the United Kingdom, and will greatly hinder the action of persons who are seeking to promote the development of the resources of Canada.

On these grounds we beg to bring these grievances before you, with the request that such steps may be taken, in order to secure early relief, as under the circumstances may seem to you to be right and proper.

A copy of the Regulations governing Placer Mining in the Yukon is enclosed with those clauses marked to which chief exception is taken."

After some discussion it was Resolved, on motion of Mr. Drummond, seconded by Mr. Stevenson :—

"That the Secretary be authorized to acknowledge the request of the Incorporated London Chamber of Mines, and to say that action upon the Petition asking for a revision of the present Yukon Mining Regulations will be taken at the ensuing annual meeting of the members."

THE KING MEDAL.

It was unanimously decided to award the gold medal presented by Mr. James King, Quebec, for the best Students' paper contributed during the year, to the Transactions of the Institute, to Mr. Percy Butler, for his paper on "The Moebins Processes for Parting Gold and Silver."

BRITISH COLUMBIA CHAMBER OF MINES.

THE SECRETARY submitted a letter from Mr. R. C. W. McCuaig, forwarding a communication from the Secretary of the British Columbia Chamber of Mines, asking to be placed on the Institute's exchange list of publications. The request was granted.

REVISION OF CONSTITUTION AND BY-LAWS.

On motion, the President, Secretary and Mr. George E. Drummond were appointed a committee to suggest amendments to the present Constitution and By-laws.

DINNER COMMITTEE.

On motion, Messrs. Drummond, Stevenson-Brown, and R. Meredith, were appointed a committee to make suitable arrangements for the Annual Dinner of the members.

THE SECRETARY submitted a list of foreign mining and technical Societies for exchange in publications. The list was approved.

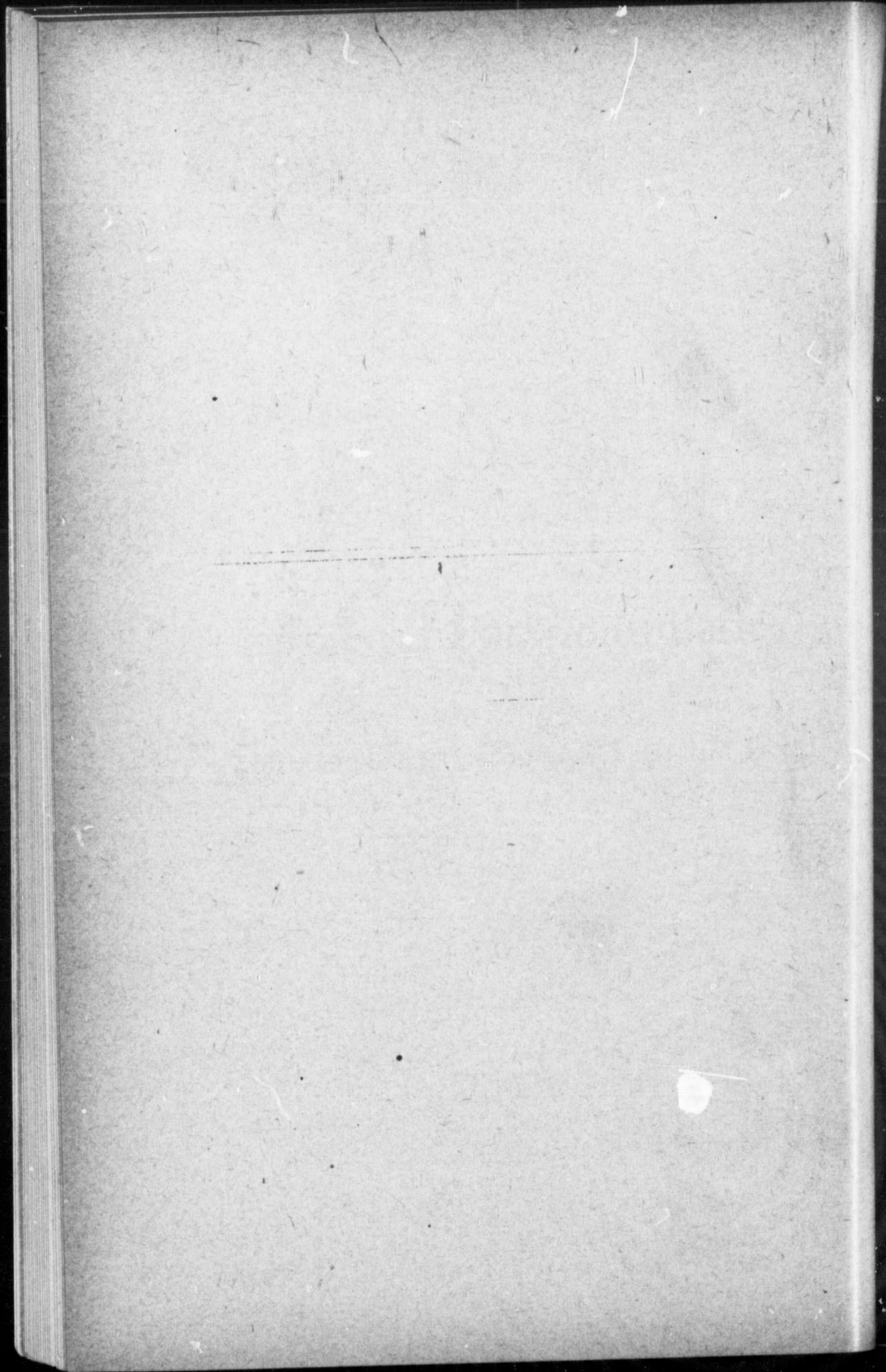
After discussing some arrangements for improving the utility of the Library, the meeting adjourned.

1870

The first of the year was a very
successful one for the
company. The sales were
very high and the
profits were very
large. The
company was
very
successful
in the
first
year.

Constitution and By-Laws,

List of Members Elected up to 31st December, 1898.



CONSTITUTION AND BY-LAWS
OF THE
CANADIAN MINING INSTITUTE.

I.—NAME.

The name of this organization shall be "The Canadian Mining Institute."

II.—OBJECTS.

The objects of the Institute are:—

- (a) To promote the Arts and Sciences connected with the economical production of valuable minerals and metals, by means of meetings for the reading and discussion of technical papers, and the subsequent distribution of such information as may be gained through the medium of publications.
- (b) The establishment of a central reference library and a headquarters for the purpose of this organization.
- (c) To take concerted action upon such matters as affect the mining and metallurgical industries of the Dominion of Canada.
- (d) To encourage and promote these industries by all lawful and honourable means.

III.—MEMBERSHIP.

Members shall be persons engaged in the direction and operation of mines and metallurgical works, mining engineers, geologists, metallurgists or chemists, and such other persons as the Council may see fit to elect.

Student Members shall include persons who are qualifying themselves for the profession of mining or metallurgical engineering, students in pure and applied science in any technical school in the Dominion, and such other persons up to the age of 25 years, who shall be engaged as apprentices or assistants in mining, metallurgical or geological work, or who may desire to participate in the benefits of the meetings, library and publications of the Institute. Student Members shall be eligible for election as Members after the age of 25 years.

Honorary Members shall be persons who have distinguished themselves by their literary or scientific attainments, and persons eminent in science or in the development or history of the mining industries.

IV.—ELECTION OF MEMBERS.

Each person desirous of becoming a member shall be proposed in writing by three members, and approved by the Council. He shall be elected by ballot and shall become a member upon the payment of the annual subscription.

Student Members shall be proposed in writing by three members, and if approved by Council, shall become Student Members upon payment of the dues specified in Section V.

Each person proposed as an Honorary Member shall be recommended by the Council and elected by a majority of the votes cast at a regular meeting.

Any member may be removed from the list on recommendation by the Council, and by a ballot of three-fourths of all the Members present at any annual meeting, due notice having been mailed by the Secretary to such Member at least six weeks prior to such meeting.

V.—PRIVILEGES AND SUBSCRIPTIONS.

The annual subscription from members shall be ten dollars (\$10.00) per annum, payable at the annual meeting, but members in good standing of any Canadian Provincial Mining Association shall be entitled to a rebate of two dollars and fifty cents, to be paid to the Treasurer of such provincial organization.

Student Members shall pay two dollars (\$2.00) per annum.

Students and Honorary Members shall have no vote.

VI.—OFFICERS.

The affairs and business of the Institute shall be managed and controlled by a Board comprising (a) a President, (b) four Vice-Presidents, (c) a Secretary, (d) a Treasurer, and (e) a Council of sixteen members.

The Board shall hold office as described below, and shall be eligible for re-election: Provided—That as to the President, no person shall be eligible for immediate re-election as President who has served for the two preceding consecutive years in that office.

As to the Vice-Presidents they shall hold office for two years, but two of them shall retire annually. As to the Council, they shall hold office for two years, but eight of them shall retire annually.

At each annual meeting there shall be elected a President, two Vice-Presidents, eight Councillors, a Secretary and a Treasurer.

The term of office shall continue until the adjournment of the meeting at which their successors are elected.

The Past President shall hold office on the Board *ex-officio*.

The Council of the Board shall be elected as far as possible with due regard to representation of the four most important mining Provinces of the Dominion, four members each from British Columbia, Nova Scotia, Quebec and Ontario.

The duties of the officers shall be such as usually pertain to their offices or as may be delegated to them by the Council or the Institute; in its discretion the Council may require a bond from the Treasurer, and make such remuneration as it sees fit to the Secretary and Treasurer for services rendered.

In the absence of the President, it shall be the duty of the senior Vice-President present to preside at the meetings of the Institute, to keep order and to regulate the proceedings. In case of the absence of the President and of all the Vice-Presidents, the meeting may elect any member of Council, or in the case of their absence, any member present, to take the chair at the meeting.

At meetings of the Council, five shall be a quorum. The minutes of the Council's proceedings shall be at all times open to the inspection of the members.

The Council may appoint committees for the purpose of transacting any particular business, or of investigating any specific subject connected with the objects of the Institute. Such committees shall make a report to the Council, who shall act thereon, and make use thereof as they shall see occasion.

The Council shall make a report, with a financial statement, at each Annual Meeting.

VII.—ELECTIONS.

There shall be a Nominating Committee of five appointed by the Council, at least three of whom shall be from the membership at large, who shall submit a list of nominations to the Secretary not less than sixty days prior to the annual meeting. Nominations for officers to be elected at the annual meeting may be sent to the Secretary at any time not less than thirty days prior to the annual meeting, and the Secretary shall, not less than three weeks before the said annual meeting, mail to every member a list of such nominations. Voting shall be by ballot, and shall be confined to the names thus nominated. A majority of votes shall suffice to elect.

VIII.—MEETINGS.

The annual meeting of the Institute shall be held on the first Wednesday of March in each year, at such time and place as the Council may determine.

Ordinary Meetings may be held in each year, at such time and place as the Council shall select. Special Meetings may be called by a quorum of the Council at its pleasure, or upon the written requisition of ten or more members; notice of such special meeting shall state the business to be transacted, and no other business shall be entertained.

All questions which shall come before any meeting of this Institute shall be decided by a majority vote of the members then present unless elsewhere specified to the contrary.

Notice of all meetings, whether Regular or Special, shall be sent by mail at least two weeks in advance.

IX.—PUBLICATIONS.

The Council shall have power to edit, or decline to publish, any paper which may be communicated to the Institute at its meetings.

The copyright of all papers, plans, maps and drawings, accepted by the Institute shall be vested in it if so agreed between the Council and the author. The author of each paper accepted and printed shall be entitled to twelve copies for his own use.

Premiums and prizes not exceeding in value \$50.00 may be given annually for papers read by students during the year. Any such award shall be made by the Council.

Each member and Student member shall be entitled to a copy of the journal of the Institute for the year for which he has paid his subscription.

The Institute as a body shall not be responsible for the statements or opinions advanced in the papers which may be read or in the discussions which may take place at its meetings.

X.—INCORPORATION.

The Institute may become a corporate body upon the vote of two-thirds of its membership to that effect.

AMENDMENTS TO CONSTITUTION AND -BY-LAWS.

The Constitution and By-laws may be amended at any annual meeting by a two-thirds vote of the members present; provided that written notice of the proposed amendment shall have been sent to each member at least one month prior to the date of the meeting.

LIST OF MEMBERS, 1898-9.

PATRON.

His Excellency Lord Minto, Governor-General.

HONORARY MEMBERS.

Birkinbine, John, *Mining Engineer*,
Past President American Institute of Mining Engineers,
Philadelphia.

Fielding, Hon. W. S., M.P.,
Minister of Finance, Ottawa.

Selwyn, Dr., A.R.C., C.M.G.,
Late Director of the Geological Survey of Canada,
Vancouver, B.C.

MEMBERS.

Adams, Captain Robert C., *Mine Owner*,
Midway, B.C.

Adams, Dr. Frank D., *Geologist*,
McGill University, Montreal.

Aldridge, W. H., *Mining Engineer*,
General Manager Trail Smelting Works, Trail, B.C.

Allan, Alex. B., *Ironmaster*,
7 Langside Crescent, Campside, Glasgow, Scotland.

Allan, W. A., *Mine Owner*,
Victoria Chambers, Ottawa, Ont.

Ami, Dr. H. M., *Palaeontologist*,
Geological Survey, Ottawa.

Appleby, F. J., *Assoc. M. Institute of C.E.*,
501 Board of Trade Building, Montreal.

Bacon, F., *Iron Merchant*,
377 St. Paul St., Montreal.

Bacon, T. P., *Secretary-Treasurer New Rockland Slate Co.*,
377 St. Paul St., Montreal.

Baker, H. C., Ba.Sc., *Mine Superintendent*,
Blackburn Mine, Perkins' Mills P. O., Que.

Belcourt, N. A., Q.C., M.P., *Mine Owner*,
Central Chambers, Ottawa, Ont.

Bell, B. T. A., *Editor Canadian Mining Review*,
Ottawa, Ont.

Bell, Dr Robert, *Field Geologist*,
Assistant Director Geological Survey of Canada, Ottawa.

- Birkett, T.
Manager Canadian Locomotive and Engine Co., Kingston, Ont.
- Blakemore, William, *Mining Engineer*,
General Manager, Crow's Nest Pass Coal Co., Limited,
Coal Creek, B.C.
- Blue, Archibald,
Director of Mines for the Province of Ontario, Toronto.
- Blue, John, *Civil and Mining Engineer*,
Eustis Mining Co., Eustis, Que.
- Boas, Feodor,
Managing Director, Asbestos and Asbestic, Limited,
Danville, Que.
- Bodwell, E. V.,
Victoria, B.C.
- Bonner, W. T., *Mechanical Engineer*,
The Babcock & Wilcox Co., Limited, Montreal.
- Boss, J. E., *Mine Manager*,
Spokane, Wash.
- Bowen, Cecil, *Civil Engineer*,
Cobourg, Ontario.
- Braden, Wm., S.B., *Mining Engineer*,
Helena, Montana.
- Brainerd, Dwight,
Hamilton Powder Co., Montreal.
- Breidenbach, T., *Mine Manager*,
Mikado Gold Mining Co., Rat Portage, Ont.
- Brelich, Henry, *Mining Engineer*,
Nelson, B.C.
- Brent, Chas., *Mining Engineer*,
Rat Portage, Ont.
- Brock, R. W., *Geologist*,
Geological Survey of Canada, Ottawa.
- Brown, D. A.,
Bell's Asbestos Co., 77 Pearl St., Boston, Mass.
- Brown, J. Stevenson,
Box 153, Montreal.
- Brown, T., *Assayer*,
Nelson, B.C.
- Bruce, R. Randolph, B. Sc., C.E.,
Windermere, East Kootenay, B.C.

- Bucke, M.A., *Mining Engineer*,
Kaslo, B.C.
- Budden, H. A., *Mine Owner*,
New York Life B'd'g, Montreal.
- Burchell, J. T., *Colliery Proprietor*,
New Campbellton, Cape Breton.
- Carlyle, W. A., *Mining Engineer*,
British America Corporation, Limited, Rossland, B.C.
- Carriere, C. H., *Mechanical Engineer*,
Levis, Que.
- Castry, H. E. C., *Civil and Mining Engineer*,
Barkerville, B.C.
- Chambers, R. E., *Mining Engineer*,
Bell Island, Conception Bay, Newfoundland.
- Champion, Jas., *Civil and Mining Engineer*,
Barkerville, B.C.
- Chewitt, J. H., *Civil and Mining Engineer*,
87 York Street, Toronto, Ont.
- Christie, C. J., *Mining Engineer*,
Portland, Oregon.
- Cirkel, F., *Mining Engineer*,
Vancouver, B.C.
- Clarke, Roy H., *Mining Engineer*,
Box 258, Rossland, B.C.
- Colby, Hon. C. C., *Mine Owner*,
Stanstead, Que.
- Colquhoun, A. J., *Mining Engineer*,
Savonas, B.C.
- Cooper, James, *Mine Owner*,
James Cooper Manfg. Co., Limited, Montreal.
- Coste, Eugene, *Mining Engineer*,
34 Madison Avenue, Toronto.
- Cowans, J. R., *Mechanical Engineer*,
General Manager, Cumberland Ry. and Coal Co., Springhill, N.S.
- Crawford, J. D., *Mine Owner*,
Westmount, W. Montreal.
- Croasdaile, H. E.,
General Manager, Hall Mines, Limited, Nelson, B.C.
- Curran, Neil McLeod, *Mine Manager*,
North Star Mining Co., Limited, Fort Steele, B.C.

- Davis, M. S., *Mine Manager*,
Hall Mines, Limited, Nelson, B.C.
- Dawson, Dr. George M., C.M.G.,
Director Geological Survey of Canada, Ottawa.
- Deacon, T. R., *Civil Engineer*,
Rat Portage, Ont.
- DeCourtenay, H. W.,
James Hutton & Co., Montreal.
- Dick, Alexander,
Rossland, B.C.
- Dimock, Clarence, *Mine Owner*,
Wentworth Gypsum Co., Windsor, Nova Scotia.
- Dingman, A. W.,
50 Wellington Street W., Toronto.
- Domville, Lt.-Col., M.P.,
Managing Director, Yukon, Stewart River Pioneer Co., Limited,
St. John, N.B.
- Donald, J. T., M.A., *Assayer*,
112 St. Francois Xavier Street, Montreal.
- Donkin, Hiram, *Civil Engineer*,
General Manager, Dominion Coal Co., Glace Bay, C.B.
- Douglas, Dr. James, *Metallurgist*,
99 John St., New York.
- Douglas, Lord Sholto, *Mine Owner*,
Sault Ste. Marie, Ont.
- Drummond, Hon. George A.
New Rockland Slate Co., Montreal.
- Drummond, G. E.,
Managing Director, Canada Iron Furnace Co., Montreal.
- Drummond, John J., *Mining Engineer*,
Canada Iron Furnace Co., Radnor Forges, Que.
- Drummond, Thos. J.,
Montreal Car Wheel Co., Montreal.
- Drury, H. A.,
Imperial Oil Co., St. John, N.B.
- Eustis, W. E. C., *Mine Owner*,
Eustis Mining Co., Box 2412, Boston.
- Evans, John W., *Civil and Mining Engineer*.
Sudbury, Ont.

- Fergie, Chas., *Mining Engineer*,
Managing Director, Intercolonial Coal Co., Westville, N.S.
- Flaherty, R., *Mine Manager*,
Burley Gold Mining Co., Rat Portage, Ont.
- Fleck, A. W., *Mine Owner*,
Canada Atlantic Ry., Ottawa, Ont.
- Foley, James,
Managing Director, Petroleum Oil Trust, Limited,
New York Life B'd'g, Montreal.
- Fowler, S. S., *Mining Engineer*,
New Gold Fields of B.C., Nelson, B.C.
- Fraser, Graham,
Nova Scotia Steel Co., Limited, New Glasgow, N.S.
- Gage, W. J., *Mining Engineer*,
Hotel Cadillac, New York.
- Galt, Elliot T.,
Managing Director, Alberta Railway and Coal Co.,
Lethbridge, N.W.T.
- Gilman, E. W., *Mechanical Engineer*,
Canadian Rand Drill Co., Montreal, Que.
- Goodwin, Dr. W. L.,
Director, School of Mining, Kingston, Ont.
- Green, George A., *Mine Owner*,
152 Drummond Street, Montreal, Que.
- Gundry, Frank,
General Manager, Quebec Central Railway, Sherbrooke, Que.
- Guess, George A., *Assayer*,
Greenwood, B.C.
- Guess, H. A., M. A., *Metallurgist*,
Ottawa Gold Milling and Mining Co., Keewatin, Ont.
- Gue, T. R., *Mine Owner*,
Acadia Powder Co., Halifax, N.S.
- Gwillim, J. C., Ba. Sc., M.E.,
Slocan City, B.C.
- Haley, Dr. Allen, M.P., *Mine Owner*,
Windsor, Nova Scotia.
- Hall, E. C., Jr., S.B., *Mining Engineer*,
Mine Centre, Ont.
- Hall, P. P., *Mine Owner*,
Quebec.

- Hamilton, Wm., Jr., *Mechanical Engineer*,
Wm. Hamilton Mnfg. Co., Peterborough, Ont.
- Hammond, Herbert C., *Mine Owner*,
Toronto, Ont.
- Hanson, C. C., *Mechanical Engineer*,
Jas. Cooper Mnfg Co., Montreal.
- Hardman, John, S.B., *Mining Engineer*,
Room 3, Windsor Hotel, Montreal.
- Harvey, W. Pellew, F.C.S., *Assayer*,
Vancouver, B.C.
- Hay, A. M.,
President, Dominion Gold Mining and Reduction Co., Limited,
Rat Portage, Ont.
- Hayward, A. A., *Mining Engineer*,
Halifax, N.S.
- Hedley, Robert R., *Metallurgist*,
Hall Mines, Limited, Nelson, B.C.
- Hersey, Milton L., Ba.Sc., *Assayer*,
16 St. Sacrament St., Montreal.
- Higginson, J. F., *Mine Owner*,
Buckingham, Que.
- Hill-Catherine, W. J., *Mining Engineer*,
60 Gracechurch St., London, England.
- Hille, F., *Mining Engineer*,
Port Arthur, Ont.
- Hill, Leslie, C. E.,
Vancouver, B.C.
- Hobson, John B., *Mining Engineer*,
Consolidated Cariboo Hydraulic Mining Co., Quesnelle Forks, B.C.
- Hogue, A. E., *Mining Engineer*,
Edmonton, N.W.T.
- Holdich, A. H., *Assayer*,
Nelson, B.C.
- Hopkins, F. H.,
Dominion Wire Rope Co., Montreal, Que.
- Hopper, R. T.,
Managing Director, Anglo-Canadian Asbestos Co., Limited,
Montreal, Que.
- Ingall, Elfric Drew, Assoc. R.S.M., M.E.,
Chief, Division of Mineral Statistics, Geological Survey of Canada,
Ottawa.

- Innes, F. C., *Mine Owner*,
Vancouver, B.C.
- Jenckes, J. M.,
Secretary, Jenckes Machine Co., Sherbrooke, Que.
- Johnson, A. S.,
Johnson's Asbestos Co., Thetford Mines, Que.
- Johnstone, R. C. Campbell, *Mining Engineer*,
Nelson, B.C.
- Jones, R. H., F.S.A., *Mineralogist*,
The Grange, Gunnersbury, London, W., England.
- Kehoe, Henry, *Mining Engineer*,
Canadian Pacific Exploration, Limited, Rossland, B.C.
- King, Lt. Col., *Mine Owner*,
Sherbrooke, Que.
- King, James, *Mine Owner*,
Union Bank B'd'g, Quebec.
- Kirkgaard, P., *Mining Engineer*,
Canadian Gold Fields, Limited, Deloro, Ont.
- Latimer, F. H., *Civil Engineer*,
Vernon, B.C.
- Law, Charles F.,
Box 116 Vancouver, B.C.
- Lawrence, H. D., *Mine Owner*,
Sherbrooke, Que.
- Lake, H. P., *Mining Engineer*,
Gold Fields of British Columbia, Revelstoke, B.C.
- Leckie, J. E., *Mining Engineer*,
Rossland, B.C.
- Leckie, Major R. G.,
Truro, N.S.
- Leckie, Major R. G. Edwards, *Mining Engineer*,
Rossland, B.C.
- Lewis, James F., *Mechanical Engineer*,
Rand Drill Co., Chicago, Ill.
- Libbey, Wilbur L., *Mine Owner*,
North Brookfield Mining Co., Brookfield, N.S.
- Logan, C. J., M.P., *Mine Owner*,
Amherst, N.S.
- Loring, Frank C., *Mining Engineer*,
Spokane, Wash.

- w, Albert P., Ba. Sc., *Field Geologist*,
Geological Survey of Canada, Ottawa.
- Donald, A., *Mine Owner*,
St. Johns, Que.
- Donald, Bernard, *Mining Engineer*,
Montreal & London G & S Dev & M. Co., Dufferin Mines, N.S.
- Dougall, George,
85 Osborne St., Montreal.
- nn, D. D., *Mine Owner*,
Windsor Hotel, Montreal.
- rcuse, B.,
Canadian Asbestos Co., Montreal.
- son, F. H., F.C.S., *Assayer*,
Halifax, N.S.
- issner, C. A., *Metallurgist*,
Londonderry Iron Co., Londonderry, N.S.
- redith, Robert, *Mining Broker*,
51 St. Francois Xavier St., Montreal.
- Merritt, W. Hamilton, Assoc. R. S. M., M. E.,
15 Toronto St., Toronto.
- Meyer, Leopold L., *Mining Engineer*,
Grand Calumet Mining Co., Gilmour House Block, Ottawa.
- Milbourne, C. Kingsley,
Nelson, B.C.
- Millar, Prof. W. G.,
School of Mining, Kingston, Ont.
- Millar, Spencer, *Civil and Mechanical Engineer*,
Lidgerwood Manufacturing Co., New York.
- Mitchell, J. S.,
Beaver Asbestos Co., Sherbrooke, Que.
- Montpetit, Dr., *Mine Owner*,
Montreal.
- Morgan, C. E., *Mechanical Engineer*,
Northey Mnfg. Co., Toronto, Ont.
- Morris, A. W., *Stock Broker*,
St. Francois Xavier St., Montreal.
- McAree, John, *Land Surveyor*,
Rat Portage, Ont.
- McArthur, James, *Metallurgist*,
Canadian Copper Co., Copper Cliff, via Sudbury, Ont.

- McCall, James T., *Iron Merchant*,
Canada Life Building, Montreal.
- McCallum, A., *Mechanical Engineer*,
Peterborough, Ont.
- McConnell, R. G., *Field Geologist*,
Geological Survey of Canada, Ottawa.
- McConnell, Rinaldo,
Crystal Gold Mining Co., Mattawa, Ont.
- McCrae, John Ferguson, *Mine Owner*,
Rossland, B.C.
- McCuaig, Clarence J., *Stock Broker*,
Notre Dame St., Montreal.
- McEvoy, James, *Field Geologist*,
Geological Survey of Canada, Ottawa.
- McGregor, Wm., *Mining Engineer*,
New Vancouver Coal Mining and Land Co., Nanaimo, B.C.
- McInnes, Wm., *Field Geologist*,
Geological Survey of Canada, Ottawa.
- McLennan, J. S.,
Treasurer Dominion Coal Co., 95 Milk St., Boston.
- McNaughton, G. F., *Mine Manager*,
New Egerton Mining Co., 15 Mile Stream, N.S.
- Nelson, Charles,
97 St. James St., Montreal.
- Nelson, W. J.,
Intercolonial Coal Co., Montreal.
- Nichols, W. H.,
Nichols Chemical Co., 32 Liberty St., New York.
- Newman, W. T.,
Box 81, Vancouver, B.C.
- Obalski, J., *Mining Engineer*,
Inspector of Mines, Province of Quebec, Quebec.
- Parker, Charles, *Mining Engineer*,
Rossland, B.C.
- Peacock, B. F., *Manager Metropolitan Rolling Mills*,
St. Francois-Xavier St, Montreal.
- Peacock, Francis T., *Mechanical Engineer*,
St. James St., Montreal.
- Penhale, John J., *Mine Superintendent*,
United Asbestos Co., Black Lake, Que.

- Pigott, J. F.,
Montreal.
- Porter, John B., *Professor of Mining Engineering*,
McGill University, Montreal.
- Pringle, H. A., *Mining Engineer*,
Regina (Canada) Gold Mine, Rat Portage, Ont.
- Pyke, J. W., *Iron Merchant*,
St. Francois Xavier St., Montreal.
- Reed, Dr. James, *Mine Owner*,
Reedsdale, Ont.
- Robb, D. W., *Mechanical Engineer*,
Amherst, N.S.
- Robinson, A. H. A.,
Peterborough, Ont.
- Rykert, E. G., *Stock Broker*,
Notre Dame St., Montreal.
- Sanders, W. A., *Mining Engineer*,
Juneau, Alaska, U.S.A.
- Shirley, Lionel H., C. & M. E.,
97 St. James St., Montreal.
- Simpson, S. J.,
James Cooper Mnfg. Co., Montreal.
- Sjostedt, E. A., *Metallurgist*,
Montreal.
- Smillie, Dr. N. C., *Mine Owner*,
384 Green Avenue, Montreal.
- Smith, Daniel,
Ontario Powder Works, Kingston, Ont.
- Smith, George R., M.L.A., *Mining Engineer*,
Bell's Asbestos Co., Ltd., Thetford Mines, Que.
- Smith, J. Burley, *Mining Engineer*,
Winnipeg, Man
- Snyder, Frederick T., *Mechanical Engineer*,
Wm. Hamilton Manfg. Co., Peterborough, Ont.
- Spafford, S. L.,
Nichols Chemical Co., Capelton, Que.
- Stephens, W. Barclay,
Granite Creek Mining Co., Montreal.
- Stevenson, A. W., C.A.,
Bank of Toronto Chambers, Montreal.
- Stuart, George W., *Mining Engineer*,
Truro, Nova Scotia.

-
- Sussman, J. H., *Mining Engineer*,
Canadian Pacific Ry, Montreal.
- Sweney, Roy, *Electrical Engineer*,
160 St George St., Toronto.
- Swinney, A. J. G.,
Canadian Gold Fields, Deloro, Ont.
- Sword, Jas. D., *Mining Engineer*,
Rossland, B.C.
- Taylor, C. H., *Mechanical Engineer*,
Taylor Air Hydraulic Compressor Co., Montreal.
- Topping, E. S., *Mine Owner*,
Trail, B.C.
- Townsend, George E.,
Castle Mining Co., Rossland, B.C.
- Tuck, T. J., *Mine Owner*,
Sherbrooke, Que.
- Tye, A. T., B.Sc., *Mining Engineer*,
Trabusca Gold Mines, Tustin, Cal., U.S.A.
- Tyrrell, J. B., *Consulting Mining Engineer*,
Dawson City, Yukon, N.W.T.
- Waterman, W. J.,
Princeton, B.C.
- Whiteside, O. E. S., *Mining Engineer*,
Anthracite, N.W.T.
- Wilkinson, C. H.,
British Yukon M., T. & T. Co., 53 New Broad St., London.
- Williams, J. N. S., *Civil and Mechanical Engineer*,
P. O. Box 641, Victoria, B.C.
- Willson, Alfred,
Commissioner, Canada Co., Toronto.
- Woodside, J. W.,
Sherbrooke, Que.

STUDENT MEMBERS.

- Ainley, Chas. N., Ba. Sc.,
Almonte, Ont.
- Grant, G. Harold,
McMaster University, Toronto.

LIBRARY AND READING ROOM.



LIBRARY AND READING ROOM.

CATALOGUE OF BOUND BOOKS.

(AT 31st DECEMBER, 1898.)

- Arkansas Geological Survey
Branner—6 Vols.
- Asbestos, Its Properties, Occurrences and Uses
Jones, R. H.
- Asbestos and Asbestic
Jones, R. H.
- Assaying, A Text Book of
Berringer, C. L. J. J.
- Banks, Bankers and Banking in Canada
Garland, N. Surrey
- Blasting
Cuttman, Oscar
- Canadian Mining Manual, 1892, '95, '96, '98
Bell, B. T. A.
- Canadian Parliamentary Companion
Gemmill, J. A.
- Chemical Technology
Groves & Thorp.
- Chemical and Metallurgical Society of South Africa
Vol. I.
- Coal Mining, A Text Book of
Hughes, H. W.
- Colliery Working and Management
Bulman & Redmayne
- Cripple Creek Gold Fields
Hoyer-Miller, C. C.
- Customs Tariff, 1893
- Cyanide Process for the Extraction of Gold
Eissler, M.
- Detection of Inflammable Gas, &c.
Clowes & Redwood
- Electric Smelting and Refining
Borchers & McMillan

- Electro Metallurgy, A Treatise on
McMillan, W. J.
- Elements of Metallurgy
Phillips & Bauerman
- Elementary Text Book of Metallurgy
Sexton, Prof. A. H.
- Engineering Magazine, The
13 Vols., Nos. 2 to 14
- General View of Commerce and Industry in the Empire of Japan
Bureau of Commerce, Japan
- Geodesy
Gore, J. Howard
- Geology of Canada, 1863-1894 (Nos. 41 to 61 inclusive are unbound.)
Geological Survey, 1863-94
- Geology of Canada, Annual Report, 1896
Vol. 9
- Geology of Cornwall
Symons, Brenton
- Getting Gold
Johnson, J. C. F.
- Glossary of Scotch Mining Terms
Barrowman, James
- Gold and Silver Ores
Merritt, William Hamilton
- Gold Mines and Gold Mining in Nova Scotia
Perley, Henry F.
- Handbook for Mining Students and Colliery Managers
Vols. 1 and 2
- Hidden Mines and How to Find Them
Newman, W. Thos.
- Hydraulic Gold Miners' Manual
Kirkpatrick, T. S. G.
- Hydraulic Cement
Spaulding, Frederick P.
- Iron Ores of Minnesota, The
Winchell, N. H.
- Iron and Steel Works of the United States, Canada and Mexico
(Directory) 2 Vols., 1894-96
- Journal of the Federated Canadian Mining Institute
Vol. 2, 7 spare volumes
- Journal of the Iron and Steel Institute
16 Vols., 1883-92
- Journal of the Mining Society of Nova Scotia
Vol. 1 (2 copies)

- Journal of the Western Society of Engineers
1 Vol.
- Law of Mines and Mining in the United States
Berringer & Adams
- Law of Mines—Canada
McPherson & Clark
- Lead and Copper Smelting
Hickson, Hiram W.
- Machinery for Metalliferous Mines
Davies, E. Henry
- Manual of Assaying, A.
Brown, W. L.
- Manual of Geology
Phillips, 2 Vols.
- Metalliferous Minerals and Mining
Davies, E. Henry
- Metallurgy of Iron, The
Turner, T.
- Metallurgy of Gold, The
Eissler, M.
- Metallurgy of Gold, The
Rose, T. K.
- Metallurgy, Introduction to the Study of
Roberts-Austen, Frof.
- Metallurgy of Silver, The
Eissler, M.
- Mine Ventilation Made Easy
Fairley, Wm.
- Minerals of Commercial Value, A Description of
Barringer, D. M.
- Mineral Industry, The
Rothwell, R. P. Vols. 2 and 3, 1893 and 1894
- Miner's Handbook, The
Milne, John
- Mining Institute of Scotland, The
Vols. 2, 4, 5, 6, 8, 9, 10, 11 (2 parts), 12, 13, 14, 15, 16, 17; with Report on
Coal Cleaning
- Mining in the Victorian Era
Percy, C. M.
- Mining and Metallurgy, Institution of
5 Vols., 1892 to 1897
- Mine Surveying, A Treatise on, 1889
Brough, Bennett H.

- Mine Surveying, A Treatise on, 1897
Brough, Bennett H.
- Mineral Resources of the United States, 1883 to 1893
10 Vols.
- Monographs, U. S. Geol. Sur. Reports
Vols. 1, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28.
22 Vols. with Atlas.
- Notes and Formulae for Mining Students
Merivale, J. H., M.A.
- Ore and Stone Mining
Foster C. LeNeve
- Petroleum and Its Products
Redwood. 2 Vols.
- Placer Mining
The Colliery Engineer Co.
- Pocket Book for Mechanical Engineers
Low, Davis, Allan.
- Pocket Manual of Mining
Chewett & Canniff
- Pocket Book for Miners and Metallurgists
Powers
- Practical Blacksmithing
Richardson, M. T.
- Practical Geology, Aids in
Cole, Grenville
- Proceedings of the General Mining Association of Quebec, The Mining Society of Nova Scotia, The Ontario Mining Institute, (complete) in 1 Vol. 1891-95
- Prospecting for Minerals
Cox, S. Herbert
- Prospecting for Gold and Silver
Lakes, Arthur
- Prospectors Handbook, The
Anderson, J. W.
- Quebec Mining Law
Quebec Government
- Register of Associates and old Students of the Royal College of Chemistry, The Royal School of Mines, and the Royal College of Science
Chambers, Theodore G.
- Report of the Ontario Bureau of Mines, 1892 (3 copies) 1894
- School of Mines Quarterly
Vols. 17 and 18, Nov. 1, 1895, July 1, 1897.
- Science of Mechanics, The
Mach, D. Ernest

- Smithsonian Report, 1893
1 Vol.
- South Wales Institute of Engineers
Vols. 19 and 20, 1894-97
- South Staffordshire & East Worcestershire Institute of Mining Engineers
4 Vols. 1875, 1889
- Stamp Milling of Gold Ores
Rickard, T. A.
- Stock Holders and Investors Annual, 1893
Weir, Arthur
- Technology Quarterly, 1894, 1895, 1896
3 Vols.
- Transactions of the American Institute of Mining Engineers
Vols. 1 to 17, with index
- Transactions of the Federated Institute of Mining Engineers
Vol. 12, 1896-97
- Year Book of Canada
1897

UNITED STATES GEOLOGICAL SURVEY.

- Annual Reports
Vols. 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, Years 1885-1897. 32 Vols.
- Mineral Resources, 1883-1893
10 Vols.
- Monographs
22 Vols. with Atlas.

LIST OF UNBOUND BOOKS IN FYLE-CASE.

- Annual Report of the Colorado State School of Mines, 1885 and 1889,
also Biennial Report for 1896
- Bacteria and the Decomposition of Rocks
By Jno. C. Branner
- Canada Customs Tariff, 1897
- Cement Materials of South-West Arkansas
By Jno. C. Branner
- Chromic Iron, with Reference to its Occurrence in Canada
By Wm. Glen
- Clay Veins vertically intersecting Coal Measures
By W. S. Gresley
- Coal Mining in Nova Scotia
By E. Gilpin
- Contributions to Biology
By Geo. Ashley

- Contributions to Biology
Noah F. Drake
- Engineering Association of the South
Vol 13, 1897
- Explosions in Nova Scotia Gold Mines
By E. Gilpin
- Former Extension of the Appalachians across Mississippi, Louisiana
and Texas
By Jno. C. Branner
- Geology and its Relations to Topography
By Jno. C. Branner
- Genesis of Auriferous Lodes
By J. R. Don
- Historical Sketch of the Discovery of Mineral Deposits in the Lake
Superior Region
By H. V. Winchell
- History of Geology, Mining & Manufacturing in the Lake of the Woods
By Geo. Bruce
- Iron Making in Alabama
W. B. Phillipps, Ph. D.
- Marine Fossils from the Coal measures of Arkansas
By J. P. Smith
- Mining Bulletin
Vol. 3, Nos. 4, 5, 6. Vol. 4, Nos. 1 and 2
- Notes on Asbestos and Asbestiform Minerals
By Geo. P. Merrill
- Observations upon the Erosion in the Hydrographic River above Little
Rock
By Jno. C. Branner
- Phosphate, for the Manufacture of Super-Phosphate and other manures
By Herman Voss
- Phosphate Deposits of Arkansas
By Jno. C. Branner
- Publications of Smithsonian Institute
By Wm. J. Rhees, 1896
- Quarterly Report of the Dept. Trade and Commerce of Canada, 1897
- Report of the Proceedings of the Flameless Explosives Committee
Parts 1, 2, 3. By A. C. Kayll
- Statistical Year Book of Canada, 1896
- Stanford University, Engineering Journal
No. 1, Vol. 2

COMPLETE VOLUMES READY FOR BINDING.

British Society of Mining Students

Vols. 14, 15, 16, 18, 19, (17, No. 4 missing; 13, No. 3 missing; 20, No. 1 missing.)

Cleveland Institution of Engineers, 1895-96

Engineering Magazine

Vol. 15

Franklin Institute, Journal of

Vols. 141, 142, 143, 145, 1896, 1897-98

Iron and Steel Institute, Phamplets

Technology Quarterly

Vol. 10

Western Society of Engineers

Vol. 2, 1897

LIST OF MAPS.

NOVA SCOTIA :—

Complete sett of Faribault's Maps of the Gold Districts (published by the Geological Survey of Canada)

MOUNTED.

QUEBEC :—

- (1) Whole Province, Crown Lands Department, 1893
- (2) Counties of Temiscouata, Rimouski, Matane, Bonaventure and Gaspé, December, 1895
- (6) Counties of Temiscouata, Kamouraska, L'Islet, Montmagny, Bellechase, Levis, Beauce, Lotbiniere and Megantic

UNMOUNTED.

- (3) Counties Argenteuil, Ottawa, Terrebonne
- (4) Counties of Portneuf, Lac St. John, Quebec, Montmorency, Charlevoix with parts of Saguenay, Chicoutimi, Champlain and St. Maurice,
2 copies, 2 sheets each
- (5) Timber Limits in the Upper Ottawa, 1897
- (6) See above
- (7) Hudson's Bay Slope and Upper Ottawa Region, 1895
- (8) Asbestos District
- (9) Phosphate District, 1891
- (10) Basins of the Rouge and Du Lievre Rivers, 1896
Duplicates of Nos. 1 and 2, 2 sheets each.

MOUNTED.**ONTARIO :**

- (1) North Western Ontario, 1897 (4 miles to the inch)
- (2) General County, Township, Railway and Post Office Map, 1896

UNMOUNTED.

- (3) 4th Report Bureau Mines Map, 1894.
- (4) 4th Report Bureau Mines Map, 1895.
- (5) 4th Report Bureau Mines Map, 1896.
- (6) District of Nipissing Mines Map.
- (7) Wahnapiatae Lake.
- (8) North Shore of Lake Huron.
- (9) Rainy River District, Mines Report, 1897.
- (10) Supplementary to Sheet No. 9, Manitou Lake.

MOUNTED.**BRITISH COLUMBIA :**

- (1) Whole Province, 1895.
- (2) Trail Creek Division.

UNMOUNTED.

- (3) West Kootenay Division and District Map, 1897.
 - (4) Topographical Map Kootenay Lake, 1896.
 - (5) Slocan Claim Map, 1897.
 - (6) Triangulation Map Slocan Division.
 - (7) Cariboo District, 1896.
 - (8) Shoal Bay and Phillips Arm Claims, 1896.
 - (9) Fire Mountain Claims, Harrison Lake.
 - (10) Triangulation Map Boundary Creek.
 - (11) Osoyoos and Kettle River.
 - (12) Triangulation Map East Kootenay.
 - (13) Brownlee's Map of British Columbia.
 - (14) Perry's Map West Kootenay.
 - (15) Government Map, 1893.
- Geological Survey Maps—All Mounted.

QUEBEC AND NEW BRUNSWICK :

- 2 belonging to Sir Wm. Logan's 1863 Report.
1 belonging to James Richardson's Report, 1863.
Phosphate Mines, Vennor's Report, 1876-77.
2 Sheets of New Brunswick and Quebec, 1882.
4 Sheets of New Brunswick, 1880.
6 Sheets Quebec, 1884.
Lowe's Map of Lake Mestassini, 1886.
Asbestos Map, 1890.
1 Sheet Quebec, 1892.
3 Eastern Township Sheets.
1 Sheet, 1897.

PERIODICALS AND PROCEEDINGS

On File in the Library, Received in Exchange With the Publications of
the Institute.

CANADA.

- Canadian Mining Review, Ottawa.
Canadian Engineer, Toronto.
Canadian Society of Civil Engineers, Montreal.
Geological and Natural History Survey of Canada, Ottawa.

BRITISH COLUMBIA :

- Annual Reports of the Bureau of Mines, Victoria.
Bulletin of the Chamber of Mines, Vancouver.

NOVA SCOTIA :

- Institute of Science, Halifax.
Mining Society, Halifax.

ONTARIO :

- Bureau of Mines, Toronto.
School of Mining, Kingston.
School of Practical Science, Toronto.

QUEBEC :

- Bureau of Mines, Quebec.
Faculty of Mining Engineering, McGill University, Montreal.

GREAT BRITAIN.

- British Society of Mining Students.
 Chemical Society, London.
 Cleveland Institution of Engineers, Middlesborough.
 Colliery Guardian, London.
 Federated Institution of Mining Engineers of Great Britain, Newcastle-on-Tyne.
 High Commissioner's Office for Canada, London.
 Imperial Institute, London.
 Incorporated London Chambers of Mines, London.
 Institution of Mining and Metallurgy, London.
 Iron and Coal Trades Review, London.
 Iron and Steel Institute of Great Britain, London.
 Ironmonger, London.
 Manchester Geological Society, Manchester.
 Midland Institute of Mining and Mechanical Engineers, Barnsley.
 Mining Association of Cornwall, Camborne.
 Mining Journal, London.
 Mining Institute of Scotland, Hamilton.
 North of England Institution of Mining and Mechanical Engineers, Newcastle-on Tyne.
 North Staffordshire and E. Worcestershire Institute of Mining Engineers, Birmingham.
 Science and Art of Mining, Wigan.
 Society of Chemical Industry, London.
 South Wales Institute of Engineers, Cardiff.

UNITED STATES

- American Institute of Mining Engineers, New York.
 American Manufacturer, Pittsburg.
 American Society of Civil Engineers, New York.
 American Society of Mechanical Engineers, New York.
 Anthracite Coal Operators' Association, New York.
 Bureau of Mines, Columbus.
 Bureau of Mines, Denver.

Californian State Mining Bureau, San Francisco.
Engineering and Mining Journal, New York.
Engineering Magazine, New York.
Franklin Institute, Philadelphia.
Geological Survey of United States, Washington.
Geological Survey, Alabama.
Geological Survey, Baltimore.
Geological Survey, Minneapolis.
Lake Superior Mining Institute, Houghton.
Mines and Minerals, Scranton.
Mining and Scientific Press, San Francisco.
School of Mines Quarterly, Columbia College, New York.
Smithsonian Institute, Washington.
Technology Quarterly, Boston, (Massachusetts Institute of
Technology.)
Western Society of Engineers, Cleveland.

SOUTH AFRICA.

Chamber of Mines, Johannesburg.
Chemical and Metallurgical Society, Johannesburg.
Mines Department, Pretoria.

AUSTRALIA.

Australian Mining Institute, Melbourne.
Australian Mining Standard, Sydney.

QUEENSLAND.

Mines Department, Brisbane.

NEW SOUTH WALES.

Department of Mines, Sydney.

WESTERN AUSTRALIA.

Department of Mines, Perth.

TASMANIA.

Department of Mines, Hobart.

NEW ZEALAND.

Department of Mines, Wellington.

New Zealand Institute of Mining Engineers, Auckland.

INDIA.

Geological Survey, Calcutta.

GERMANY,

Berg-u-Hüttenmannische Zeitung Freiburg.

Zeitschrift für das Berg-Hütten-und Salmenwesen in dem Preussischen State, Berlin.
