

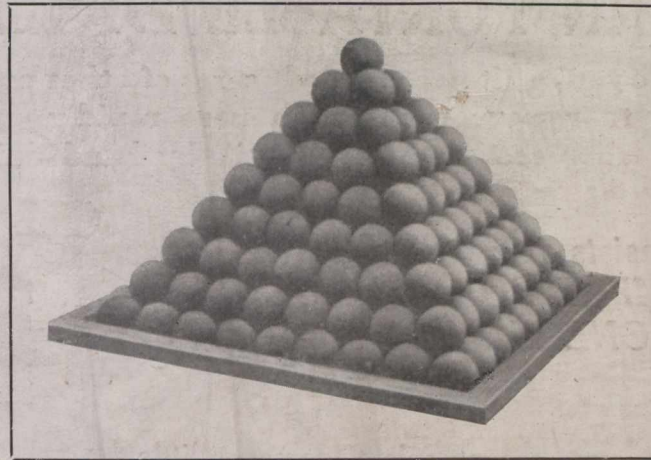
# CANADIAN MINING JOURNAL

VOL. XXXIX

TORONTO

No. 23

## “MANGANITE” BALLS FOR BALL MILLS



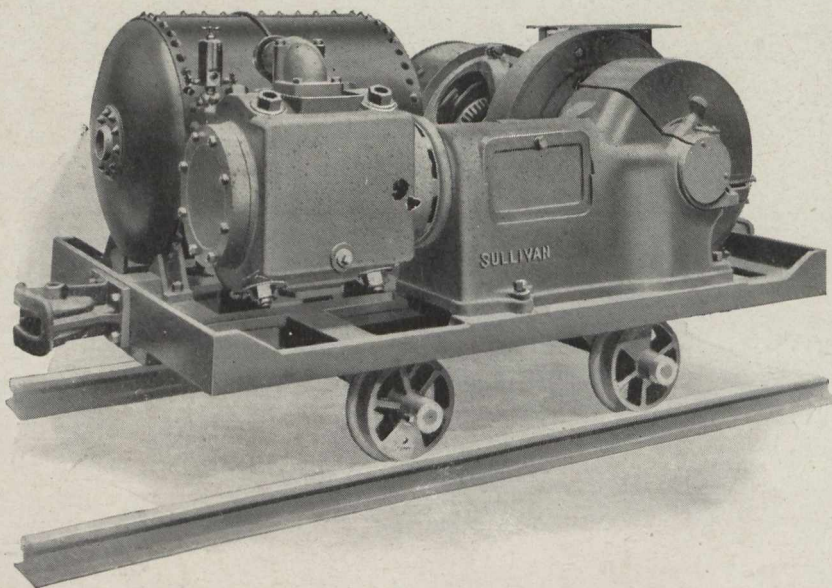
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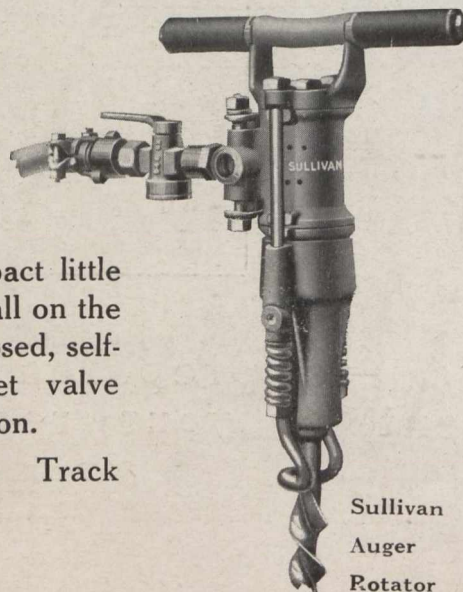
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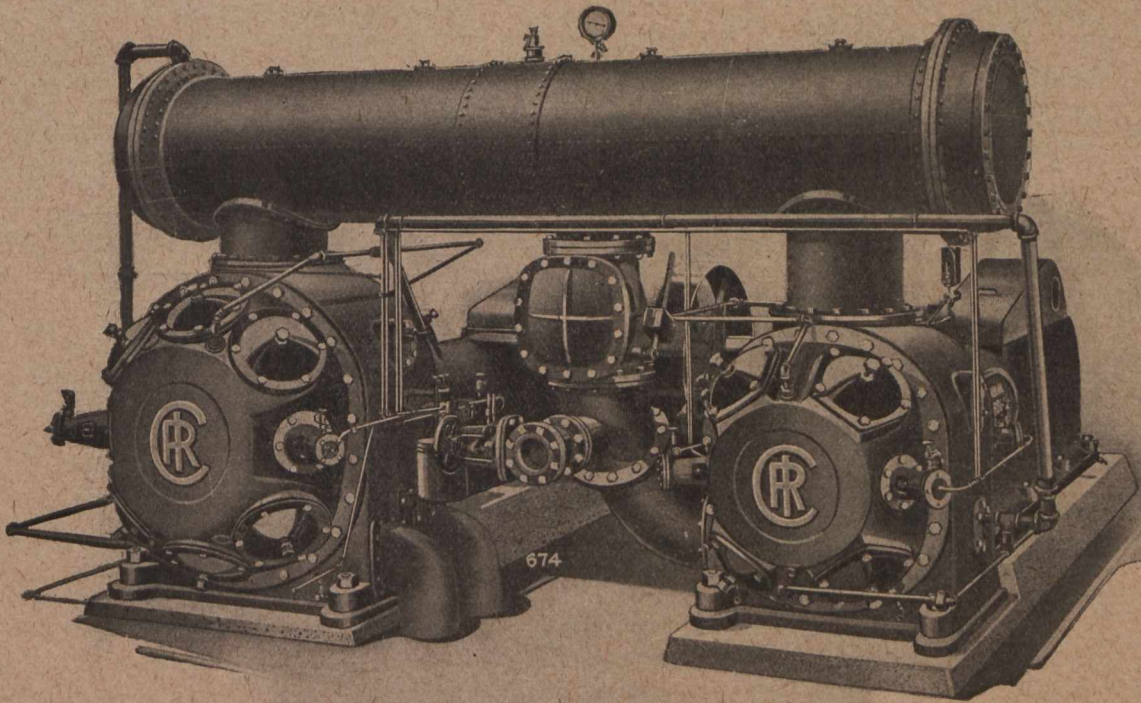
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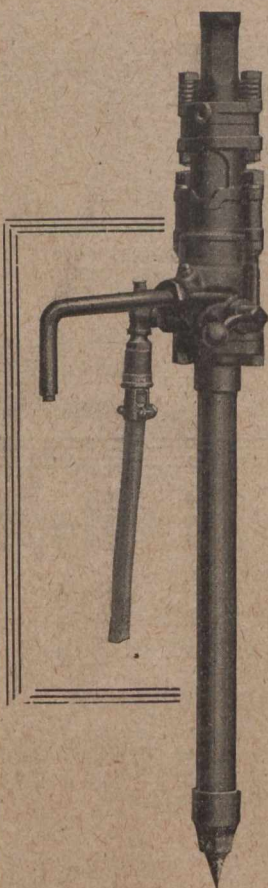
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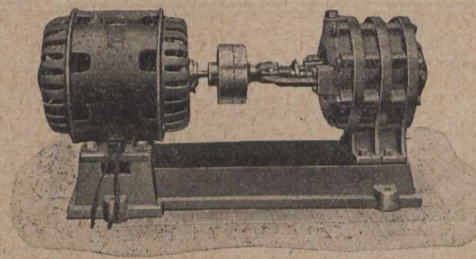


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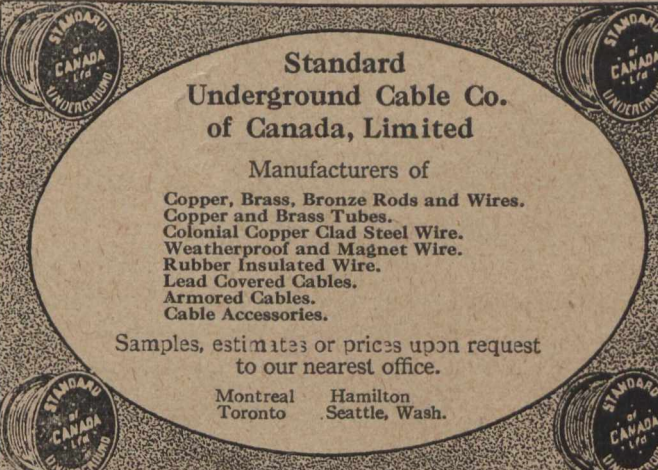
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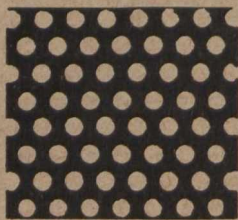
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On December 11, 1916, the SUPREME COURT OF THE UNITED STATES unanimously adjudged our basic patent for air-froth-flotation to be valid, holding that this patent covers any process of froth flotation wherein the results obtained are such results as are secured by the use of a fraction of one per cent., on the ore, of an oily frothing agent in an ore-pulp, with agitation. Three of the thirteen claims which specified the use of "a small quantity of oil" and which the Court held to be invalid have since, by proper disclaimer, been brought within the scope of the Supreme Court's decision.

On May 4, 1917, in the UNITED STATES DISTRICT COURT OF MONTANA, the opinion of Judge Bourquin was filed in the case of Minerals Separation Ltd., and others against Butte & Superior Mining Company, and was followed by a decree on September 17, 1917, wherein it was adjudicated that the three claims which had been limited by disclaimer were valid and infringed, and that the seven claims adjudged to be valid by the Supreme Court of the United States were infringed. The acts thereby adjudged to be infringement included the use of mixtures of petroleum oils and mineral-froth-forming oils in a total amount exceeding one per cent. on the ore, and also the use of Callow pneumatic cells.

On May 24, 1917, the UNITED STATES CIRCUIT COURT OF APPEALS at Philadelphia, in the case of Minerals Separation, Ltd., against Miami Copper Company, unanimously sustained the validity and broadly construed a second basic patent, owned by us, for the use of all "Soluble Frothing Agents." In the same opinion, the Court also validated a third patent for the use of cresols and phenols in the cold and without acid. The defendants, Miami Copper Company, endeavored to avoid infringement of these patents by using Callow pneumatic cells, but the Court held that the operations of the defendant company infringed all three patents.

On November 11, 1918, the SUPREME COURT OF THE UNITED STATES granted the petition of Minerals Separation, Ltd., and others for a Writ of Certiorari to review the decree of the United States Circuit Court of Appeals at San Francisco which had reversed so much of the decree of Judge Bourquin in the suit against Butte & Superior Mining Company as adjudged to be infringements those acts which employed oil of any kind or character used in excess of one-half of one per cent. on the ore.

Prospective users of our flotation processes are earnestly requested not to be influenced by the views disseminated by interested parties that any of these BASIC PROCESS PATENTS can be evaded by a mere variation of apparatus for agitating and aerating the pulp, or by the simple addition of oils or other materials in excess of a fraction of one per cent. on the weight of the ore treated.

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Now, just "why is the Marcy Grate?"

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The small head of water makes a thick pulp, which greatly increases the mill's grinding capacity because of the ore particles which adhere to the balls. If need be, the pulp may be so thick as to scarcely run down a steep launder.

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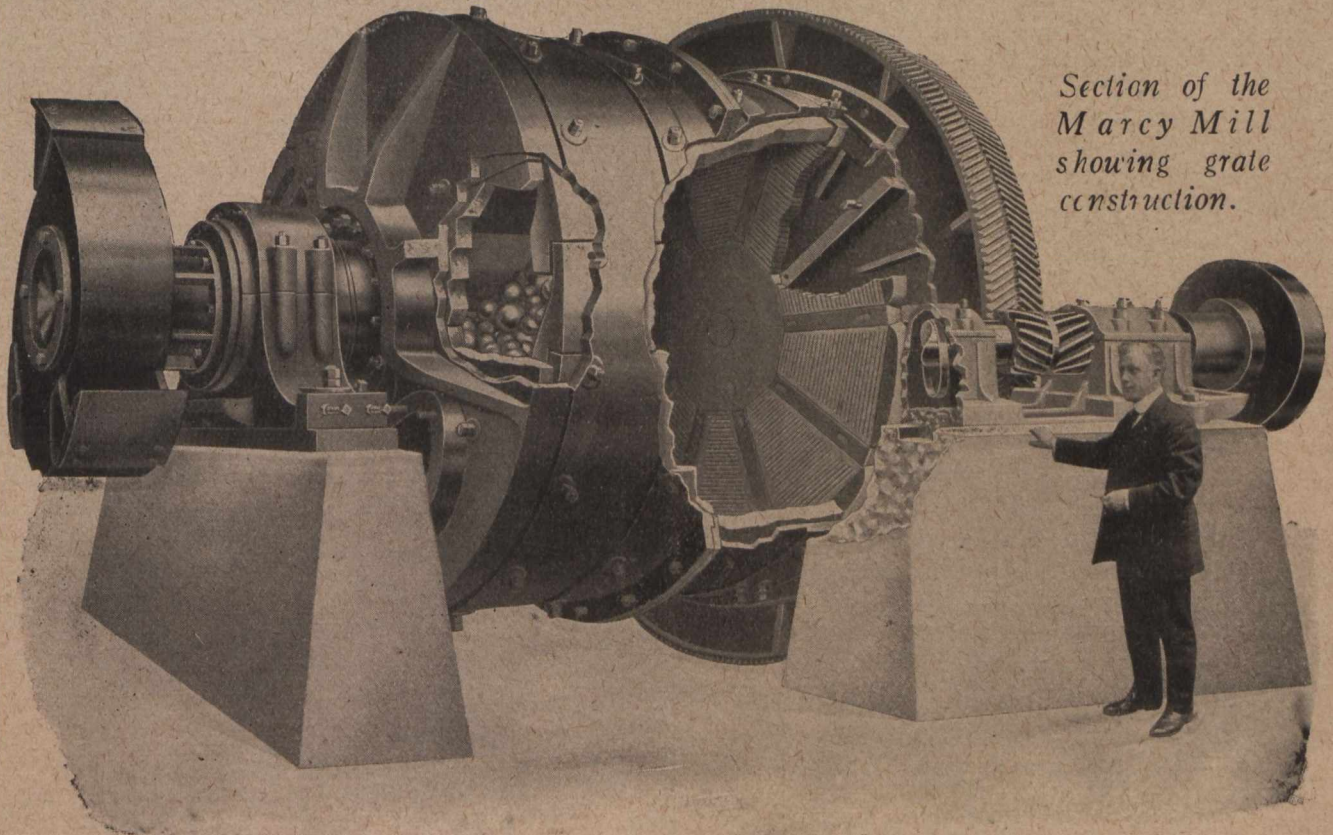
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*Section of the Marcy Mill showing grate construction.*

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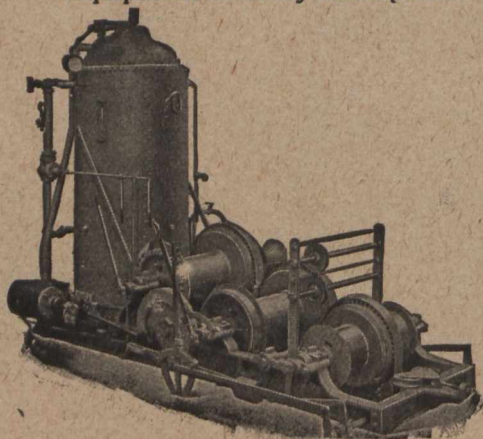
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# THE CANADIAN MINING JOURNAL

VOL. XXXIX

TORONTO, December 1st, 1918.

No. 23

## The Canadian Mining Journal

With which is incorporated the  
"CANADIAN MINING REVIEW"

Devoted to Mining, Metallurgy and Allied Industries in Canada.

Published 1st and 15th of each month by the  
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When Hon. Martin Burrell, Minister of Mines in the Dominion Government, was in British Columbia recently a delegation of Vancouver Island residents waited on him with regard to the interests of settlers interested in the coal rights of the Island. They wanted some statement from the Minister as to whether, should the British Columbia Government re-enact the Settlers' Rights Act of 1917, the Federal authorities would refrain from disallowing it again. Mr. Burrell could make no definite statement, but assured his petitioners that he appreciated the importance of the matter from the viewpoint of the settlers, involving as it did title to a considerable proportion of the coal resources of Vancouver Island. He agreed that all those interested were entitled to the fullest hearing by the Dominion Government should the matter come up for reconsideration. The Settlers' Rights Act, it may be explained, gave the settlers within the E. & N. Ry. Belt a specified period in which to make claim to the coal rights within the limits of their property, they then being granted title to the coal, if able to substantiate their claims. The coal areas in question, or at least most of them, now are owned by the Canadian Collieries (D) Limited.

## THE CANADIAN MINING INSTITUTE

We are pleased to publish in this issue the letter of Mr. F. W. Gray on the functions of the Canadian Mining Institute. Mr. Gray well presents the ideas of those who believe there is, or should be, a wall between engineers and other members of the Canadian Mining Institute. We do not agree with Mr. Gray; but we can assure him that there are many, both within and without the Institute, who do.

Our opinion is that the main purpose of the Canadian Mining Institute is, and should be, the development of the mining and metallurgical industry of Canada. We believe that the majority of the men best qualified to carry out this purpose are technically trained men; but we believe also that certain non-technical men are just as fully qualified. We do not agree with Mr. Gray that mining engineers should cut themselves off from other men in this work. We believe that the strength of the Canadian Mining Institute lies in the fact that it is a great factor in working out the problem of applying science to industry, and we believe that a purely professional society would not be as successful in this work as is a society, largely composed of technical men, but also including non-technical men who hold positions of responsibility in the mining and metallurgical industry. Surely we have had a sufficiency of the exclusiveness of scientific societies. Those who wish to better the position of the engineering profession defeat their own ends when they divorce themselves from the industry which they serve.

Mr. Gray says: "If it had been intimated to us that we were affiliating with a trade association and not with a technical and professional society, we should not have dreamt of an affiliation." His words imply the belief that a society cannot be a successful technical and professional society and at the same time take an active part in the development of one of Canada's foremost industries. The very existence and success of the Canadian Mining Institute is a refutation of this idea. As a technical and professional society the Canadian Mining Institute is second to none. It is more successful than most such societies because it has not divorced itself from the industry. It is certainly not a "trade association," as that term is generally used, and yet it takes an active interest in many matters affecting the mining and metallurgical industry, besides purely professional matters.

The Engineering Institute of Canada is essentially a professional society. Many civil, mechanical and electrical engineers cannot attach themselves so closely to one industry as can mining engineers, metallurgists and geologists. They do the best they can under the

circumstances. It is obviously necessary to have some society for engineers who cannot find opportunity for intercourse and united effort in a society devoted to one industry. The Engineering Institute of Canada fills this need. It is naturally the largest engineering society in Canada and it is doing very useful work. Mining engineers have in the Canadian Mining Institute an organization which gives them the advantages of such a professional society and at the same time confines its attention to the industry with which they are most concerned, and does not exclude taking a part in non-professional matters affecting the welfare of the mining and metallurgical industry.

The Canadian Mining Institute is a technical and professional society, but it is more than that. It is an Institute that recognized years ago, what the English-speaking world has recognized more particularly during the past few years, that science and industry should be closely linked together and that technically trained men are of more use to the community when they refuse to set themselves apart.

The mining and metallurgical industries in Canada as in the United States, owe a great part of their success to scientifically trained men. It is natural that in an Institute that exists for the purpose of developing Canada's mining and metallurgical industry, technically trained men should predominate. Because they do, the Canadian Mining Institute is a strong technical and professional society as well as an organization which is able to do much that professional societies cannot do.

Among the members of the Canadian Mining Institute are many non-technical men who are taking a leading part, along with technical men, in the direction of mining and metallurgical enterprises. Far from believing that this is a source of weakness to the Institute, we believe it to be a great source of strength.

During the past few years there has been much said and written of the necessity of greater application of science to industry. In the mining industry we have been particularly fortunate in having made considerable progress along this line. The very character of the Canadian Mining Institute is an evidence of this. We believe that to make of the Canadian Mining Institute an old-style professional society would be a retrograde movement. We need not only advancement in learning among technical men, but also more rapid application of learning to industry. The first step is obviously to keep those who are responsible for the policies of mining and metallurgical companies in close touch with advances in science. In an Institute which includes non-technical as well as technical men, we have something that is far more valuable than a mere professional society; and we have the professional society also.

Mr. Gray says that he "resents and will resist any attempt to belittle our technical status." So will we all. But we do not agree with Mr. Gray's implication that we belittle the technical status of an engineer when we claim that an Institute which includes non-

technical men as well as technical men is of more value to the mining and metallurgical industries than would be a society composed wholly of technical men.

#### COMMISSION WILL INVESTIGATE CONDITIONS IN THE CROW'S NEST COAL FIELD.

The appointment of a Royal Commission to investigate conditions in the Crow's Nest Coal Field now is occupying the attention of the parties to the recent strike. The mines of Fernie and Michel, B.C., are in operation again after an enforced idleness of some thirty-five days, the men having been granted their demand for a Single Shift, or one shift in twenty-four hours. With this concession, however, was coupled the condition that an inquiry should be instituted having in view the establishment, or otherwise, of the men's claim that there is greater danger to the life of the worker through the use of the Double Shift than there is under the system now adopted. It also was understood that the Commission would be appointed immediately and that it would prosecute its inquiry with the utmost diligence in order that the report might be available in the shortest possible space of time. The Commission is to work under authority of the Provincial Government, its personnel to consist of a representative of the miners, one of the company, and a third, the chairman, to be selected by the Minister of Mines.

The re-opening of the Fernie-Michel Mines under the new order necessitated some re-organization, as can easily be understood. Mr. J. O. Jones, advisor to Mr. W. H. Armstrong, Director of Coal Mine Operations in District 18, and Mr. Robert Livett, International Representative of the U.M.W. of A., accompanied representatives of the management of the colliery on an inspection trip of the mines as soon as the men had voted to go back to work. They went through all the working places which the company contended were in the development stage, and therefore under the terms of one of the details of the settlement agreement, not open to the application of the single shift principle. Over thirty of these places were in dispute but, finally almost all were unanimously classified, those upon which it was impossible to reach an agreement being referred to Mr. Armstrong for decision.

#### GRANBY PRODUCTION OF COPPER IN NINE MONTHS

The copper output of the Anyox and Grand Forks smelters of the Granby Consolidated Mining & Smelting Co., for the first three-quarters of 1918, that is to say, up to the end of September, was 29,081,635 lb. This is a very satisfactory showing in comparison with that of last year when Anyox produced 27,661,301 lb. and Grand Forks 6,858,718, a total of 34,520,019 lb. Thus, with three more months to count, the Granby Company is within 5,438,384 lb. of its mark set in 1917, and if output is continued at the rate of 9,693,878 lb. a quarter, which has been done up to date, the 1918 production from the British Columbia smelters of this company will be 4,255,494 lb. in excess of that of the previous year. As the Ladysmith Smelter, which was operated intermittently during the year and now is closed down, produced 96,212 lb. of copper and no report is yet available as to what is being done by the Consolidated Mining & Smelting Co. of Canada, or what its aggregate may be expected to be, the indications may be put down as most promising; in fact, the belief is that British Columbia's total copper output at the end of 1918 will be found to be easily equal and possibly well in excess of that of 1917.



## CORRESPONDENCE

**The Functions of the Canadian Mining Institute.**

The Editor of the Canadian Mining Journal:

Sir,—Your editorial of the 1st November commenting on the relations between the Canadian Mining Institute and the Engineering Institute of Canada, correctly points out that failure to recognize the proper functions of the two societies has been responsible for past misunderstandings, and that if the members were more familiar with the nature of their respective societies, co-operative effort to improve the status of the engineering profession would be found not only desirable, but easy of accomplishment.

At the same time, speaking for the members of the Canadian Mining Institute resident in Nova Scotia, and in particular for the members of the Mining Society of Nova Scotia—a body that includes within its membership a number of members of the Engineering Institute of Canada—the writer desires to protest most emphatically against your opinion that the Canadian Mining Institute represents an industry, in contradistinction to the Engineering Institute of Canada, which it is contended represents a profession.

Recently the Mining Society of Nova Scotia voted to affiliate with the Canadian Mining Institute, but we can assure you that if it had been intimated to us that we were affiliating with a trade association and not with a technical and professional society, we should not have dreamt of an affiliation. We had not thought, nor did we ever expect to think, that the Canadian Mining Institute has as its chief aim the development of the mineral resources of Canada. The object of the Institute, as it has been generally understood by its members, is to provide a medium for the reading of technical papers, the dissemination of technical knowledge, and the practice of mining as it has been improved from year to year by the actual experience of its members in mining operations and prospecting. The connection between these objects and the development of the mineral resources of a young country like Canada is naturally so intimate as to be inseparable, and it has been a necessary concomitant that pioneers of the mineral industry—not necessarily technically trained men—should have been prominently associated with the Canadian Mining Institute. Nevertheless this fact does not lessen in any way the claim of the Institute to be as truly a technical and professional society as, for example, the Institution of Mining Engineers in Great Britain or the American Institute of Mining Engineers.

The time had probably arrived—was perhaps overdue—for the Canadian Mining Institute to adopt the stricter classification of its new members into fully qualified technical members and associate members that is customary in technical societies, but the retention of full membership by those older and valued members of the Institute who do not claim technical qualifications should not be any source of offence to the Engineering Institute of Canada.

On the other hand, it is open to grave doubt whether the Engineering Institute of Canada has improved its own status or the future prospects of the engineering profession in Canada if it has conceived the slightly grandiose and impractical scheme of combining in one society all the ramifications of the engineering profession. The profession of the civil engineer is wide enough and honorable enough in itself not to require

enlargement, and it discloses some narrowness of viewpoint to conceive that any one society can hope in the years to come to comprise within its scope the varied and at the same time severely specialized activities of the civil, railroad, mining, electrical, mechanical, chemical and steel-works engineers of the Canada that is to be; not to mention the extension of the engineering profession into the textile, shipbuilding and other industries that will occur to those who desire to follow the engineer into all his occupations. It may well prove to be that this conception will act as a limiting factor and a source of hindrance to the best interests of the engineering profession in future years.

The conception of a society that would co-ordinate the activities of all the engineering bodies, while allowing complete autonomy and individual independence to the several technical associations of Canada would seem to be a more judicious and proper arrangement than the absorption of the existing societies by one dominant society, and it would also be more likely to achieve a permanent career of usefulness.

If the conception of the Engineering Institute of Canada is merely as your editorial states, to “improve the status of the engineering profession,” it would seem to be a rather selfish ideal, and not in its essence distinguishable from trades unionism. The old-fashioned idea of a technical society was that it existed for the advancement of learning, and if it is in the minds of any member of the Canadian Mining Institute that the Institute represents an industry; or if it is in the minds of the members of the Engineering Institute of Canada that the Institute exists only to improve the status of the engineering profession, many people would feel inclined to agree with you in asking, “Would it not be well for each Institute to undertake to make the members of the others more familiar with the nature of the respective societies?”

It does not appear to have occurred to the Institution of Civil Engineers in Britain to criticize the rules of the Institution of Mining Engineers, and such action would be bitterly resented. The profession of the Mining Engineer calls for a severity of studies and for a breadth of scientific requirements that justify mining engineers in believing themselves qualified to manage their own affairs and to maintain their own technical societies without interference from other bodies, nor is it necessary for any mining engineer in Canada to belong to any other association than the Canadian Mining Institute and its affiliated societies, to enable him to claim the status of an engineer.

The Nova Scotia Mining Society is one of the oldest technical societies in Canada. Its membership is almost exclusively composed of technical men daily practicing their profession, but we have never considered the Society represented the mining industry in the province except as a body of engineers associated closely with that industry. We resent, and shall resist, any attempt to belittle our technical status. “The Canadian Engineer,” commenting editorially on your remarks of the 1st November, quotes Professor Haultain’s dictum that the Canadian Mining Institute “could never be absorbed completely by the Engineering Institute because its membership included many men who could not qualify for the Engineering Institute.” We have no intention of being “absorbed,” and presumably we shall be consulted, because if not, then our critics should in honesty choose some other word than “absorption” to describe their intentions.

Yours, etc., F. W. GRAY,  
Editor, Mining Society of Nova Scotia.

### ONTARIO'S METAL PRODUCTION FIRST NINE MONTHS, 1918.

Returns received by the Ontario Bureau of Mines from the smelters, refining works and metalliferous mines of the province for the nine months ending September 30th, 1918, are summarized in the table below, which, for purposes of comparison, gives figures for the corresponding period of 1917:

Product.	— Quantity —		— Value —	
	1917.	1918.	1917.	1918.
Gold .....			\$ 6,754,535	\$ 6,875,766
Silver, ounces .....	15,236,002	13,145,596	12,001,875	12,500,980
Cobalt, metallic, lbs. ....	295,866	317,291	433,739	702,717
Copper, metallic, lbs. ....		359,713		79,137
Nickel, metallic, lbs. ....	166,921	582,992	67,499	.....
Nickel oxide, lbs. ....	10,831	5,592	3,025	1,731
Cobalt oxide, lbs. ....	276,769	397,728	323,162	572,845
Other cobalt and nickel compounds, lbs. ....	276,217	367,923	30,025	53,784
Molybdenite, lbs. ....	65,827	43,631	83,550	54,671
Lead, pig, lbs. ....	1,080,000	1,291,571	139,948	115,117
*Nickel in matte, tons .....	31,064	33,508	15,532,000	20,105,087
*Copper in matte, tons .....	15,928	17,052	6,371,200	6,820,785
Copper ore, tons .....	2,658	16	33,419	318
Iron ore, tons .....	138,808	154,243	559,099	697,839
Pig iron, tons .....	513,232	541,564	9,841,438	14,728,461

\*In 1917 nickel and copper in the form of matte were valued at 25 and 20 cents per pound respectively. For 1918 the values have been placed at 30 cents for nickel and 20 cents for copper.

#### Gold.

Gold production has been well maintained for the period, considering adverse war conditions which have been aggravated rather than improved during 1918. The signing of the armistice on November 11th will have the effect of releasing men almost immediately from munition plants and this will tend to relieve the labor shortage from which the mining industry as a whole has suffered. The value of the output, \$6,875,766, exceeds that for the corresponding period in 1917. This was produced from 711,185 tons of ore milled. In addition, 65,939 ounces of silver, worth \$64,029, were recovered. Hollinger and McIntyre continue to be the largest producers, the output respectively being valued at \$4,685,586 and \$1,206,875. New producers this year include Davidson at Poreupine, Patricia at Boston Creek and Lake Shore at Kirkland Lake. From the last mentioned, since milling operations started in March, 11,253 tons of ore were treated with a recovery in gold and silver of \$271,265, or \$24.10 per ton. At Boston Creek a new find of gold telluride on the Miller Independence has attracted a great deal of attention to this camp.

#### Silver.

Despite a decline in ounces produced, the output of silver for the first 9 months of 1918, if maintained for the balance of the year, will probably equal in value that of any other year in the history of the Cobalt camp. The average New York price of the metal for the period was 95.21 cents per fine ounce, the present price of silver being 1.01½. Mines shipping 750,000 ounces or over are given in order: Nipissing, Mining Corporation of Canada, Kerr Lake, O'Brien. Shippers this year to date include mines that have been idle for some time. Some of these are: Edwards & Wright, Ltd., operating the Green Meehan at North Cobalt; the Silver Eagle and Keeley mines, in South Lorrain, and Peterson Lake. Many of the mines are now treating slimes and tailing dumps by flotation methods.

#### Nickel-Copper.

The only copper ore shipment was a trial lot by the Hudson Copper Co., of Havilah. High operating costs, increased freight rates and smelter charges, and lack of a customs smelter within the province contribute to make copper mining unprofitable at the present time. As a result of the operations at the new Port Colborne refinery of the International Nickel Company of Canada, there was a production of metallic nickel and copper from nickel-copper matte. The refinery started last July, and up to the end of September had produced 358,205 lbs. of nickel and 359,713 lbs. of copper. The Copper Cliff and Coniston smelters treated 1,141,089 tons of ore, producing therefrom 64,926 tons of matte containing 33,688 tons of nickel and 17,232 tons of copper.

#### Iron Ore and Pig Iron.

During the first nine months of this year 154,243 tons of iron ore were shipped. Of this total, 84,886 tons were shipped to Ontario points and 69,357 tons outside the province. In addition to the output of the Algoma Steel Corporation and Moose Mountain, Ltd., shipments were made by the Poe Mining Co. from Palmerston tp., Frontenac county and by the Canadian Union Iron Mines Corporation, from Drummond township, Lanark county.

Pig iron production came from 1,083,456 tons of ore smelted, of which only 87,106 tons were of Ontario origin. Although the tonnage of pig iron produced was only slightly in excess of the 1917 figures, the value shows an increase of nearly 50 per cent. Eight furnaces were in blast, operated by four companies. The steel production was 668,333 tons worth \$21,601,144. As a result of the war's ending, the character of the output will be changed almost immediately from shell steel to structural steel and rails.

### Lead.

Production of pig lead was in excess of the 1917 output but a decline in price is reported. The only mine and smelter operating is that of the James Robertson Estate at Galetta, on the Ottawa River. The entire product is shipped to the headquarters of the company at Montreal.

### Molybdenite and Ferro-molybdenum.

The output of molybdenite concentrates shows a decrease. Molybdenum is one of the war metals, and as a result of the armistice the demand has declined. Early in the year the International Molybdenum Co., of Orillia, and the Tivani Electric Steel Co., of Belleville, produced ferro-molybdenum to the extent of 19,410 lbs. worth \$59,153. Electric Foundries, Ltd., of Orillia, produced in experimental work 1,800 lbs. of ferro-manganese. This last-mentioned company and the Tivani company are now engaged in the electric furnace production of low phosphorus pig iron.

### GRANBY HONOR ROLL.

In honor of the 400 or more men of the Granby Mining & Smelting Company, who have joined the allied forces, the Granby Company is preparing an honor roll to perpetuate their memory. The tablet, which is a handsome work of Corinthian design in fumed oak, standing over four feet high, is to be placed in the company's Vancouver office. It will be suitably framed and colored photographic enlargements will be on view at each of the company's plants. The scroll at the top of the cornice shows the Union Jack, Canadian Ensign and Old Glory entwined with a Maple Leaf in the centre, all brought out in colors. A large inset picture in the centre of the tablet by the English artist, Herbert Schmatz, entitled "Banners of Empire," depicts the Canadian Regimental Flags lying on General Wolfe's tomb in Westminster Abbey, while the men are fighting in France. Beneath the picture is a glass cabinet containing the honor roll, a dark green morocco-bound book divided into six sections, representing the company's six plants at Anyox, Alaska, Cassidy, Grand Forks, Phoenix, and the Vancouver office. A separate loose leaf bears the record of each individual, giving particulars of his name, family record, date of enlistment, history of his services with the company, his department, age, military record and battalion. Of the 400 or more Granby employees who have responded to the call, between twenty-five and thirty have been killed and nearly one hundred have received serious wounds.

### LA ROSE ACQUIRES HOMESTAKE SILVER MINE.

The Homestake silver mine, one of the best-known old mines of British Columbia, has been sold to the La Rose Mining Company, of Cobalt. This is the second Cobalt mining company to enter the mining field of British Columbia recently, the Mining Corporation of Canada having recently acquired and now being engaged in the development of the Woolsey property near Revelstoke, B.C. The Homestake was disposed of by Mr. Byron R. Jones and associates, of Vancouver, who had secured the property under option. This mine was operating twenty-two years ago, but its owners at that time, a Vancouver syndicate, although its silver values were high, were unable, under the processes then in use, to extract more than a little over 70 per cent. For this reason the working of the property, having been found unprofitable, ceased. With the oil flotation process and the high price of silver, the Homestake

will be placed among the producers again, its new owners being convinced that, as a result of the changed conditions, it will prove to be a first-class investment. Mr. H. D. Cameron, a nephew of Sir Douglas Cameron, former Lieutenant-Governor of the Province of Manitoba, will be in charge of the work. The Homestake is situated in the Kamloops Mining Division of British Columbia, approximately 18 miles from the Canadian Northern Pacific Railway and at an elevation of about 2,600 feet. It consists of four Crown-granted mineral claims, of 191.44 acres. A tunnel 190 ft. in depth has been sunk.

Mr. Robert R. Hedley, a well-known mining man of Vancouver, B.C., is superintending the operation of the Mary Reynolds mine of Yale District. This is a gold-silver proposition and Mr. Hedley expects to arrange for the installation of a mill next summer. He looks forward to developing, in a short time, an output of between two and three carloads of ore a month.

Mr. James Errington has obtained an option on the group of claims known as the Aspen Grove Property, a low-grade copper proposition, which is situated in the Kamloops Mining Division, B.C. There are seventy claims in this group and an engineer has been engaged to make a report on the whole property. Drilling is expected to commence in the spring of next year.

One of the most important public works undertaken by the Mines Department of British Columbia with a view to opening up a promising mineral district to development is the construction of what is known locally as the Big Bend Road, which runs from the City of Revelstoke north along the Columbia River. The country in this section, generally speaking, is rough and mountainous and it has been and is (as the work is not yet finished) an expensive and, to the engineers engaged, a somewhat difficult work. The road now is open to La Forme Creek, in which locality are situated a number of mining prospects from which much is expected.

From the Chu Chua section of the North Thompson River, British Columbia, comes the report of another rich gold strike. A sample taken from the discovery was displayed at Kamloops, B.C. which, it is estimated, would run from \$25,000 to \$40,000 a ton in gold values. Henry Skenig is the locator. He is just back after spending a year at the claim. He says he has run a tunnel 87 feet and stripped the lead at points for about 12,000 feet, and has also run crosscuts at several points.

It is stated in Vancouver, B.C., that despite the efforts of the United States authorities at the border, American gold still is coming into Canada for barter and exchange, especially among the Chinese who pay as high as 35 per cent. premium for coinage. This, in turn, it is claimed, is shipped out of Canada to the Orient. During recent months the price for gold among the currency gamblers in the Oriental section of Vancouver has increased from 10 to 35 per cent. It is said that large sums of gold are held in Chinatown awaiting the opportunity of shipment to China. One man who has sold considerable coinage to Chinese speculators is said to have made the statement recently that several months ago he got only \$22 for a \$20 gold piece but now he could get \$25.50.

### BRITISH COLUMBIA'S COAL OUTPUT.

A statement prepared by the Provincial Department of Mines, showing the coal production in British Columbia for the first nine months of 1918 is of special interest because of the special efforts made to maintain a high output notwithstanding many and unusual difficulties. The figures issued show an aggregate increase of 255,188 tons; not very considerable when viewed from the broad standpoint of American production, but, to the operators concerned, very satisfactory because it has been accomplished in the face of problems which appeared insuperable at the moment but each of which has been successfully dealt with. Of course, the scarcity of labor has been a factor which has confronted the collieries ever since the war started and costs also have been steadily advancing. But it was not alone these that the operators of Vancouver Island were called upon to overcome. They found that in some cases their most reliable workings were becoming exhausted and had to develop new mines to take their places. And there have been, and are, other difficulties, as will be shown.

The Canadian Collieries (D), Limited, found it necessary to abandon No. 4 Mine Extension comparatively early in the year. This, however, was not allowed to interfere with production any longer than could be helped. It was decided to open a new mine, No. 5 South Wellington, which has been on the shipping list for some time and is making a good showing.

The Pacific Coast Collieries Co., Ltd., had to close Nos. 1 and 2 Slopes, South Wellington, but it concentrated on Nos. 3 and 4 Shafts, Morden Mine, which have been doing exceptionally well.

The British Columbia Coal Mining Co., whose Jingle Pot mine figures strongly in the output statistics for 1917, was closed by order of the Chief Inspector of Mines early in the year owing to the discovery of a fire which threatened to be serious. It remained sealed for months, representing a very serious loss to the Island output. However, it now has been re-opened and its daily tonnage is advancing steadily.

If there had not been something to offset all this the figures given at the outset would be impossible. There have been, fortunately, compensating features, one of the most notable perhaps being the splendid production of the Harewood Mine, Canadian Western Fuel Co., as well as the very satisfactory manner in which the operation of the No. 1 and Reserve Mines, of the same company, has been speeded up. Then there have been additions to the ranks of the collieries, some of which already have begun to count and others of which still are in the development stage. These include the Granby Consolidated Mining and Smelting Co.'s mine at Cassidy's, V.I., which promises to be one of the finest coal mines of Western Canada in point of plant and general equipment and which is materially swelling the monthly production statistics. Also, there is the new Wakesiah Mine, Canadian Western Fuel Co., at Nanaimo, which is expected to be in operation in the course of a few weeks and the output capacity of which is placed, by conservative estimate, at 150,000 tons per year. Its development will represent an expenditure of about \$200,000. The Nanoose Collieries, also, is doing some development which will have an important bearing on the productiveness of the Vancouver Island fields in the future.

Details of the output for the first three-quarters of 1918 follow:

Island Fields: 1917, 1,275,147 tons; 1918, 1,277,847 tons. Increase, 2,700 tons. Crowsnest Fields: 1917, 350,180 tons; 1918, 572,010 tons. Increase, 221,830 tons. Nicola-Princeton: 1917, 106,158 tons; 1918, 136,816 tons. Increase, 30,658 tons. Total increase, 255,188 tons.

It will be noted that the most marked increase was in the Crowsnest, which is explained by the fact that the mines of Fernie, Michel, Corbin, etc., worked constantly, turning out a steadily increased tonnage, until the strike occurred over the introduction of the Single Shift System in the two former mines. As the labor trouble of 1917 in this district took place early in the year the difference is clear. If there had been no Single Shift Strike, there would have been a further increased tonnage of at least 60,000 tons. As it was, the September returns showed a slump of 75,777 tons over those of August. Another contributory cause for this was the Nanaimo cable accident.

It may be remarked incidentally that the Royal Commission to be appointed to make inquiry into the necessity for the Single Shift in Fernie and Michel has not yet been named, because the miners have been unable to nominate their representative. The inquest into the circumstances of the death of the Nanaimo miners is still in abeyance. The latter awaits the report of Provincial Mineralogist W. Fleet Robertson, who went to McGill University with parts of the broken cable to carry out a series of physical, chemical, microscopic and other tests with a view to revealing the cause of the accident. From Montreal comes the report that the fracture shows that, while the outside strands of the rope were flawless and apparently as strong as ever, the centre or core for a certain distance had been affected by rust. The origin of this rust and the reason of its localization to a limited length of the rope where the fracture took place has yet to be explained.

To revert to the question of production, there now is some speculation as to what the returns for the remainder of the year will show. While all the October figures are not to hand, enough have been received to show that that month cannot be expected to make a particularly good comparative showing. The ravages of Spanish influenza have been felt by the miners of British Columbia to a greater extent than workmen in other lines of activity. It is known that the Canadian Western Fuel Company's output for October was 59,219 tons. This was for 27 working days. Compare that with 61,200 tons for September in which there were 25 working days and the effect of the "flu" to that particular colliery is apparent. It has made a difference of approximately 300 tons a day. The same conditions prevail at Fernie, where the production, normally 2,500 tons daily, is reported to have dropped to 500 tons a day. Michel, it is said, escaped the disease to a large extent by becoming a closed town, trains passing through with locked doors and no strangers being allowed ingress.

However, with the "flu" checked, which should soon be accomplished, conditions now are fairly propitious and British Columbia may wind-up the year 1918, after all, with a good margin over the preceding year in respect of coal output.

#### The Telkwa Coal Basin.

Some of the coal deposits of Northern British Columbia are being developed, that which now is receiving attention being the Telkwa Coal Basin, situated about 35 miles from Telkwa on the line of the Grand Trunk Pacific Railway. Three drill holes have been

sunk and, according to the engineer's report, it has been established that there are 50,000,000 tons of good bituminous coal available in this particular section. Experiments seem to indicate that it will prove to be good coking material, but the coal has not yet been given a practical trial. The most serious difficulty confronting the promoters is the question of transportation, the construction of a branch line connecting with the G.T.P. being necessary. This is a matter which is being dealt with now, and if the financial support necessary for the work is secured, this coal will be exploited.

#### DECISION IN FAVOR OF COAL OPERATORS ON VANCOUVER ISLAND.

The British Columbia Court of Appeal has handed down judgment in favor of Mr. H. W. Treat and his associates as against the E. & N. Railway Co., in the suit brought by the latter to have the defendants—Messrs. Treat et al—declared trespassers on certain coal-bearing lands on the foreshore of that block of land known as the E. & N. Land Belt, Vancouver Island. This confirms the opinion of the lower court and affirms Mr. Treat's title to the lands in question, which are situated near the mouth of the Chemainus River between Victoria and Nanaimo, B.C. It means that the courts hold the view that the Dominion Government had no power to convey foreshore rights to the railway company when bonusing it, by a considerable land grant, for the construction of the road. It means, also, that the development of the coal in question will proceed without interference and that others, holding provincial licenses to coal areas on the foreshore of the island and within the belt, probably will take steps leading to the development of this part of the coal resources of the island.

The Canadian Northwest Steel Company is building a fuel pulverizer, on plans prepared by the Fuller Engineering Company, for the B.C. Sugar Refinery of Vancouver, B.C. It is expected to cost about \$40,000. This is the first installation of the kind in the Canadian West and for that reason is being viewed with special interest.

#### ASPEN GROVE AMALGAMATED MINES.

The Aspen Grove Amalgamated Mines, Ltd., of British Columbia, has been formed for the purpose of taking over and operating several large groups of mineral claims in the Aspen Grove District. The property includes sixty claims and has been developed sufficiently to satisfy those interested that they have a splendid deposit of copper. Considerable work is contemplated which, it is stated, will commence at an early date. The officers are: J. A. Bate, president; M. A. Durland, secretary-treasurer; M. L. Grimmitt, director and solicitor; Joseph Walters and Dr. J. J. Gillis, directors. The company's headquarters are at Merritt, British Columbia.

#### PRINCETON MINING AND DEVELOPMENT COMPANY.

A considerable body of ore is blocked out on the property of the Princeton Mining & Development Company near Princeton, B.C., and as a short spur from the Great Northern Railway has been completed shipments to the Granby Smelter at Grand Forks will start without loss of time. It is the intention to work continuously. Assays of the ore average about \$35 to the ton.

#### DEVELOPING PRODUCER SILVER-COPPER PROPERTY NEAR JEDWAY.

Energetic measures are being taken for the development of the Producers' Mine, a promising silver-copper property situated on Moresby Island near the town of Jedway. Water power is being provided, a ten-inch water pipe driving a 48-in. Kincaid waterwheel. A compressor plant has been imported from Vancouver City. It is proposed driving a 250-ft. tunnel to tap the vein and, if the programme now laid out is carried through, the mine will be on the shipping list by February, 1919. Mr. Frank Buckingham will have charge of the mine operations.

#### PERSONAL AND GENERAL.

Mr. J. B. Tyrrell has been elected chairman of the Toronto branch of the Canadian Mining Institute.

Dr. R. C. Wallace, Commissioner of Northern Manitoba, is moving from Winnipeg to The Pas, Manitoba, where he assumes his new duties on December 1st.

Mr. E. V. Neelands is in Toronto.

Mr. Charles Williams, of the Hollinger staff, was in Toronto last week.

Mr. J. L. Agnew is suffering from an attack of influenza.

Mr. H. E. Rice has been appointed general superintendent of Dominion Iron and Steel Co.

Mr. A. D. Miles, president of the International Nickel Co. of Canada, is now in the new offices in Toronto.

Major E. F. Pullen has been awarded the Distinguished Service Order Medal.

Lieut.-Col. R. W. Leonard has been elected president of the Engineering Institute of Canada for the coming year.

Mr. R. N. Palmer is at Black Lake, Que.

Major T. R. London has been appointed Commander of the Royal Canadian Engineers in Military District 11, which includes British Columbia and Vancouver Island.

Mr. Chas. Randall has been appointed manager of the Dome Lake Mining Co., Porcupine.

The bulletin on the Radial Coal Cutter, just issued by the Canadian Ingersoll-Rand Company, Ltd., describes the "37" and "47" coal cutters manufactured by that company. The bulletin describes the details of construction and indicates the particular advantages of this type of coal-cutter; briefly, these are the portability and ease of operation, with first cost comparing favorably with that of the standard rock drill. One of the principal features of the machine is the variable stroke, which has been found to be essential for this class of work.

Mr. Thomas Graham, superintendent of the Canadian Collieries (Dunsmuir), Ltd., states that the ravages of the epidemic of Spanish influenza have severely handicapped him in his endeavor to maintain the output of the several mining properties of that company. He asserts that the number of men who have laid off work for periods of varying length during the past few weeks runs into the hundreds. It has been impossible, therefore, to keep production up to the maximum point during the first weeks of November. However, he is hoping that an improvement soon will be apparent.

## SPECIAL CORRESPONDENCE

### NORTHERN ONTARIO.

#### The Otisse Property, Matachewan.

The results of diamond drill work done on the Otisse property in the Fort Matachewan district have been satisfactory. This announcement was made authoritatively. So far as can be reasonably ascertained, diamond drilling has indicated the presence of a large body of mill ore. In all, thirteen holes were sunk on the property, which was staked by Sam Otisse and optioned by the Colorado-Ontario Development Company less than a year ago. The results of the first few holes drilled did not prove very satisfactory, but as work progressed, better results were obtained. Operations at the property have now been suspended, pending the arranging of the installation of a mining plant. This will not be attempted until the winter roads are available for hauling supplies to the new district, owing to the fact that freight at the present time costs the exorbitant price of \$90 per ton from Elk Lake, the end of the steel, which compares with a cost of about \$15 per ton over the winter roads. A new \$4,000,000 company has been organized for the purpose of active operation of the property. This is to be known as the Matachewan Gold Mines, Limited. Associated with the new company are the original members of the Ontario-Colorado Development Syndicate, among whom are Charles Flynn, of New York, and C. A. Foster, together with Walter J. Boland, of Toronto.

Camp buildings have been erected on the property sufficiently large to accommodate a large force of workmen. A land road has been cut to within about six miles of Elk Lake, and the remaining six miles can be cut in a short time, thus furnishing satisfactory communication with Elk Lake for the winter months at least. Owing to the fact that the greatest amount of work on any one property in the district has been accomplished on the Otisse, it has formed the centre of interest for the new camp. The Davidson property, which adjoins the former, is the first on which gold discoveries were made in the district, but up to the present it has not been extensively opened up. It, therefore, appears to be evident that the future of the Matachewan area to a large extent hinges on the results met with in the future development of the Matachewan Gold Mines, where ore has been indicated and awaits the actual underground development to prove its extent and importance. Several hundred mining claims have been staked in the district and a considerable amount of surface work has been done by various property owners, therefore the announcement of results achieved in diamond drilling and the assurance of further development work on the leading property in the new gold area will prove a source of much satisfaction to the many property holders.

#### The Gowganda Road.

Road construction between the end of the railway at Elk Lake and the Gowganda Mining camp has been suspended for the time being. Limited labor, coupled with extremely wet weather, retarded the progress of the work a good deal, in spite of which fact, however, a part of the road has been put in pretty fair shape. The results of mining in the district during the coming winter may be expected to determine to what extent the government will devote its energies to road-building in that district during the coming summer. With the cessation of hostilities, it is expected larger num-

bers of men will be available for this class of work in the future.

#### Elk Lake Expects a Boom.

Indications point to Elk Lake being the centre of much activity during the coming winter months. In addition to the increased activity in mining circles in the Elk Lake district, operations under way in the Gowganda camp, coupled with indications of another busy winter in Matachewan, provide the reasons for the expected boom. Elk Lake as a silver mining section had the misfortune to be discovered at the time when Cobalt was just nicely under way as a silver camp, with its excellent railway connections. In spite of the fact that some very spectacular shoots of high-grade ore were encountered in a number of places, no real paying mines were developed. However, mining methods have been greatly improved over those prevailing a decade ago, and it is possible that with the added knowledge of geological conditions and better methods of treatment, a number of mines may yet be developed. The Elk Lake field is located some forty miles north-west from Cobalt and the rock formations resemble those of Cobalt with the one exception that the diabase formation predominates. Some conglomerate occurs, but in less extensive bodies than in the Cobalt camp. It is a well-known fact that the largest percentage of silver produced in Cobalt came from the veins in the conglomerate. Exceptions to this rule have occurred, however, as in the case of the Kerr Lake Mine at Cobalt, where immensely rich veins have been found in the diabase. Invariably, however, these veins have been found in close proximity to the contact of the diabase and conglomerate formations. The present high price of silver is added incentive to the various property holders to more diligently search for the precious metal, and there is a strong possibility of their efforts resulting favorably in a number of cases.

#### A Silver Discovery.

A promising discovery of silver is said to have been made on the Westcott claims in the Township of Tudhope, Elk Lake District, not far from the Toledo property.

#### Shipping Ore From Foster Mine.

Steady shipments of ore are being made from the old Foster mines at Cobalt. About eight cars per week are being shipped to the Northern Customs mill. Arrangements are being made for increasing these shipments to twelve cars per week, from which it is expected about 4,000 ounces of silver per ton will be produced. During the removal of these dumps a considerable amount of high-grade ore is being encountered and already one carload, estimated to contain about 300 ounces to the ton, has been shipped. The ore is being handled by one man operating a mechanical bucket, and the costs of handling have been reduced to a minimum. In the meantime, underground operations are being carried on at the first level of the mine.

#### Boston Creek.

Efforts are being made to have the "National" stop at Boston Creek Station. The present passenger service to the new camp is somewhat inconvenient, owing to No. 47 train only running as far as Englehart, necessitating travellers stopping over at Englehart or some point along the line until the arrival of the Montreal train late in the afternoon. This brings passengers to Boston Creek in the evening, making it necessary to make the trip to the outlying mines after night-fall. The "National" passes through Boston Creek three days a week shortly after noon and would provide ex-

cellent service to passengers with this station as their destination.

Developments at the Miller-Independence Mines at Boston Creek are such as to arouse the greatest enthusiasm. The phenomenally rich ore being encountered is causing international interest. The calaverite, which is in spectacular quantities, occurs over a width of several feet. The pay-streak, in which the tellurides of gold occur in exceptionally large quantities, is from four to five feet in width, in addition to which there is from six to eight feet of high-grade milling ore. The management is carrying forward an aggressive policy of underground development, and drifts are being driven at both the 100 and 200-foot levels in two directions. It is also planned to diamond drill several hundred feet ahead of development work.

#### Will Develop Mondeau Property.

It is learned that the Timmins interests, prominent in mining circles through their connection with the Hollinger-Consolidated at Porcupine, are interested in the development of the Mondeau property in the McElroy township section of the Boston Creek mining camp. The Mondeau is situated in the northern part of what appears to be the richest belt in the Boston Creek district. It is equipped with a small mining plant, and present plans of operation call for the sinking of the shaft to a depth of 100 or 150 feet, for which work additional machinery is being installed. Lateral work will be undertaken at the aforementioned depths. A contract for shaft sinking has been let, and work is already under way. The entry of the Timmins interests into the Boston Creek camp is of considerable importance, showing that the district is looked upon favorably by the leading mine operators of the Dominion. The most important factor to date has been the extensive rich deposits developed on the Miller-Independence property. Evidence continues to accumulate from week to week, however, that the extent of the gold-producing area of the new camp will be large. Discoveries of more or less importance, and worthy of further development, have been made at widely-separated points in the four townships which comprise the Boston Creek gold district, namely: Boston, McElroy, Pecaud and Catherine. The camp is ideally located as regards railway transportation and power, and with sufficient men available for the energetic development of the large number of promising prospects in the district, rapid enlargement is looked for in the mining activities of the camp.

#### Pittsburgh-Lorrain.

Milling operations at the Pittsburgh-Lorrain property in the South Lorrain section of the Cobalt district have been suspended for the winter months. During the summer and fall the company has employed the oil flotation process with considerable success. The Pittsburgh-Lorrain owns and operates the old Currie property, and also the Wettlaufer mine and mill under lease. The operation of these properties have been the most consistent effort at silver mining in the South Lorrain district in recent years.

#### Temiskaming Mill Again in Operation.

Developments at the Temiskaming Mine in the Cobalt camp have recently been of a favorable nature. The new vein reported as having been encountered on the Gans lot is showing improvement as work proceeds. It is understood drifting is proceeding both north and

south, and the vein has a width of about one foot. The wall rock is said to carry silver values over the full width of the drift. The mill at the property, which has been closed since last spring, was placed in operation again this week, it being presumed that sufficient ore is now available to keep the plant operating at capacity for a reasonable period. The treasury of the company is in excellent condition, there being upwards of half a million dollars in cash available, in addition to which \$400,000 of the recent Canadian Victory Loan was subscribed for by the company.

#### Nipissing.

During the month of October the Nipissing Mining Company produced \$278,468, and shipped products from Nipissing and customs ore of an estimated net value of \$545,135. Favorable underground developments were encountered at shaft 73 and at 96 tunnel. A small vein which was encountered in 73 shaft in September, has improved from one inch in width to as high as three and four inches, assaying from 2,000 to 3,000 ounces to the ton. At 96 tunnel a crosscut encountered two soft veins about two inches in width and assaying 1,500 ounces. Elsewhere conditions underground continued to be satisfactory. A winze is being started at the sixth level of No. 73 shaft in order to explore and develop the southeast part of the northern portion of R. L. 401. A promising vein was encountered at the sixth level about two months ago, but it is apparent that more depth is desirable. It is estimated that the depth of conglomerate at that point will be at least 125 feet below the sixth level. The vein is strong structurally, and has other encouraging features. Construction work has been almost completed and sinking is now under way. A new shaft is being started near the centre of R. L. 404, near the edge of Cobalt Lake. There is a large area of undeveloped conglomerate in this vicinity. It is comparatively shallow in depth, however, and the shaft will have a depth not to exceed 125 feet.

A total of 125 tons of high-grade ore were treated, and the refinery shipped 401,423 fine ounces of silver. The low-grade mill treated 6,882 tons. The following is a summary of production:

Low-grade mill .....	\$120,987
Washing plant .....	157,481
Total .....	\$278,468

#### \$7,624,761 in Ten Months.

During the first ten months of the current year the mines of Cobalt have shipped silver of an approximate value of \$7,624,761. This compares with \$6,070,748 during a corresponding period of 1917, and represents an increase of \$1,554,013, or an average increase of upwards of \$150,000 every thirty days. At this rate the silver output of the camp will exceed that of the year 1917 by almost \$1,900,000. Even with the increased costs of operation, the profits of the various operating companies will be greatly swelled. The 1918 silver production in point of value will establish a record for the Cobalt camp, owing to the fact that the price of the white metal has been abnormally high during the year, as well as the fact that the known ore bodies of the larger producing mines of the camp are being found to extend beyond their previously known limits in almost every case. It is also possible

that new mines will be developed where energetic exploration work is being carried on at a number of properties in the camp. The North Cobalt area is receiving considerable attention at the present time. The installation of an electrically-driven mining plant is under way at the property of the Mining Corporation of Canada on the west side of the track at this place, and excellent results are attending the development of the Green-Meehan mine on the east side of the track. The Mining Corporation has outlined a somewhat extensive plan of operation. The fortunes of the mines of the camp will, no doubt, continue to fluctuate, as has been the case from the beginning. It is not improbable, however, that the working out of one mine may be followed by greater production from others, which will likely continue for a great many years.

#### Kerr Lake.

The production from the Kerr Lake Mine at Cobalt for the month of October amounted to 200,220 ounces of silver. This compares with 208,339 ounces during the preceding month, and is slightly lower than any previous month of the current year. With the price of silver remaining at slightly over \$1.01 per ounce it is evident the value of the output of the past month is higher than that of the earlier months of the year. The following is a summary of development for the past ten months of the year:

Month.	Ounces.
January .....	204,641
February .....	204,153
March .....	207,100
April .....	201,000
May .....	268,213
June .....	210,000
July .....	231,000
August .....	250,400
September .....	208,339
October .....	200,220

#### Temiskaming and Hudson Bay.

The annual meeting of the Temiskaming and Hudson Bay Mining Company, as well as the operating company, the Hudson Bay Mines, Limited, was held at New Liskeard on November 12th. George Taylor, who since the formation of the company has been president and director, retired on account of ill-health. The shareholders expressed regret at Mr. Taylor's retirement, and passed a hearty vote of thanks in appreciation of his long and valuable services as president of the company. The annual reports of both companies will be available in a few days.

The following directors have been elected: For the Temiskaming and Hudson Bay Mining Co., Ltd.—Messrs. A. A. McKelvie, T. McCamus, F. L. Bapst, C. L. Sherill, W. H. Kinch, S. S. Ritchie, and F. L. Hutchinson; Officers: President, F. L. Bapst; Vice-Pres., A. A. McKelvie; Sec.-Treas., F. L. Hutchinson.

#### Beaver Consolidated.

Continued favorable developments above the diabase sill at the Beaver Consolidated Mines, Cobalt,

are reported, and the expectation that plans are being completed for the opening of the large new mill at the Kirkland Lake Gold Mines, of which the Beaver Consolidated owns seven-eighths of the stock, is serving to attract attention in mining circles. While officials are reticent regarding achievements at the mine, it is understood that no work is being done at the 1,600-foot level, with the exception, perhaps, of pumps necessary to prevent the workings from flooding. Besides completing the purchase of the Kirkland Lake Gold Mines, the Beaver has equipped the mine with a 150-ton mill in addition to developing the ore bodies to a depth of 700 feet. Close to one million dollars in gold ore has been blocked out at this property, which will prove a big asset to the Beaver Company. This large gold mine, new, but proven, added to the Beaver Mine itself, which is still a large producer, lends big value to the Beaver Consolidated.

#### Rich Ore at Foster Mine.

One of the most notable developments in recent years in the Cobalt camp is the sensational results being met with at the 60-foot level of the old Foster property here. A few weeks ago, shortly after underground work was commenced, a high-grade vein was encountered in one of the old workings. Since this time the drift has been driven about 30 feet in ore, the vein being about three and a half inches in width, and in places carries massive silver, while the average grade of the ore is around five thousand ounces to the ton. In the wall rock leaf silver in chunks, sometimes as large as a man's hand, is found in the seams along the sides of the vein. Already a large amount of this high-grade ore has been bagged, while high-grade ore continues to show along the floor, in the face and roof of the drift. The property is being operated under lease by C. L. Campbell and W. Fairbairn of Haileybury. While the lease will doubtless result in the holders getting large returns, the Foster Company itself will not derive any great benefits from the new discovery, the lease calling for the company to receive but ten per cent. of the "profits" of the operation. Besides the successful working of the underground portion of the mine, the dumps are being sent to the Customs Concentrator at 104, and about 4,000 ounces of silver per week is being recovered from this source, while also a fair amount of high-grade ore has been found in the work of removing the old ore from the surface dumps.

#### Adanac.

The vein at the 310-foot level of the Adanac Mine ranges in width from 18 to 30 inches, and the silver values in the face of the drift range from 100 to 400 ounces to the ton. At the point where the vein was cut several weeks ago, the grade of ore was comparatively low. However, since drifting was commenced, a steady increase has been recorded, with assays of 395.60 ounces showing in the last few rounds. The composition of the vein is smaltite, niccolite, calcite and silver; the smaltite and niccolite constituting the greater percentage of the vein matter. A crosscut is also being driven to the east to cut the series of veins which parallel that along which the drift is being made. Early this week one of these veins was cut, in which considerable leaf silver occurs. The wall rock also contains visible lead silver. Altogether, the result of operations appears to be very satisfactory with excellent possibilities of early improvement.



### Restakes Disputed Property.

The disputed ground along the boundary line of the Violet property of the La Rose and that of the O'Brien Mining Company, has been restaked by Mr. G. E. H. Booth of the La Rose Mining Company. This seems to point toward the belief on the part of Mr. Booth that the disputed ground is indeed outside the limits of the Violet Property of the La Rose and also that of the O'Brien Mine. The incident is unique in the history of mining in this country, in that, if the staking is in Mr. Booth's behalf, it would take from the La Rose (the company with which Mr. Booth is associated) a large part of their main workings on the Violet; or if the staking is for the company with which Mr. Booth is employed, the company is then staking its own shaft.

### Schumacher Gold.

At a special meeting of the Schumacher Gold Mines, Limited, held immediately before the annual meeting of the company, a number of interesting statements were made by Mr. F. L. Culver, Vice-President of the company, who occupied the chair in the absence of the president. He said it was the intention of the management to sink the main shaft ultimately to the 1,000 or 1,200-foot level. The mill, he added, had a capacity of 180 tons per day, and a small addition to the machinery would readily increase this capacity to 300 tons. The Schumacher Mine is situated adjacent to the Hollinger Consolidated Gold Mines and the McIntyre-Porcupine. Extensive ore bodies have been opened down to a depth of 700 feet. The announcement that development to the 1,000 or 1,200-foot level had been decided upon by the management lends still further to the importance of the operation. The mill on the property is the third largest gold ore-treating mill in Northern Ontario. A by-law was passed authorizing the sale of 100,000 shares of treasury stock of the company at a discount of not more than 55 per cent.

### Sittings Postponed.

Owing to the prevailing epidemic of influenza in this portion of Northern Ontario, Mining Commissioner T. E. Godson, K.C., has decided to postpone the sittings listed for hearing in Haileybury in December. The postponement will be until some time in January.

### Ophir.

The Mining Corporation of Canada has notified the Ophir management that the option on their property by the former company will be dropped on the 14th of December next. It is stated that Ophir interests have made arrangements for continuing the work, as they do not consider the veins have been adequately tested.

### Lake Shore.

In his regular monthly report to the directors of the Lake Shore Mines, Limited, at Kirkland Lake, Manager R. C. Coffey points out that the mill treated 1,875 tons of ore and recovered approximately \$45,000 in gold. Both the tonnage treated and the value of gold produced are a new record for the Lake Shore. The following is a summary of the development work for the month: 200-foot level—The crosscut on No. 1 vein was advanced from 160 to 180 feet east. The east drift on the No. 2 vein was advanced from 28 to 107

feet. A diamond drill hole was started south from the No. 2 vein and advanced to 252 feet. 400-foot level—The south branch of No. 1 vein east was advanced from 265 to 322 feet. The north branch of No. 1 vein west was advanced from 259 to 263 feet. At 270 feet on the south branch a crosscut was driven to connect up with the north branch, the distance being 19 feet. Work on the No. 2 vein east was carried from 296 feet to 386 feet, and a crosscut was driven 23 feet.

### Hill Gold Mines.

It is understood that operations at the Hill Gold Mines, in the Painkiller Lake section of the Munroe Gold district, is making arrangements for the recommencement of operations. It is also stated the company has succeeded in securing control of additional property adjoining. A mill was in the process of installation when the work was suspended.

### Elliot-Kirkland.

It has been decided to continue the main shaft of the Elliott-Kirkland property to a depth of 600 feet. The results met with at the 500-foot level did not prove as encouraging as had been hoped, and after diamond drilling at this point it was decided better conditions existed at the 600-foot level than at the 500, and accordingly the shaft is to be continued to that depth.

### Installing Mill at Burnside.

The work of installing the milling equipment at the Burnside property at Kirkland Lake is being rushed in the hope of placing the mine on a producing basis by the end of the current year. It is anticipated that with the ore already developed on the property, and the treatment of the material in the 25-ton mill will provide sufficient funds for the extensive enlargement of the milling plant, which present indications appear to warrant in the not distant future. With the prospect of shortly being able to secure all the labor necessary for carrying on operations at full blast, the mill is being completed at an opportune time.

### Important Developments on Cotter Property.

Important developments are taking place on the Cotter property in the Boston Creek district, where a vein some three feet in width and carrying tellurides has been opened up on the surface at a point near the southern boundary of the property. The vein runs about east and west and has a dip of about 40 degrees to the north. Meantime a diamond drilling campaign is being carried out some distance to the north, where the eastward continuation of the Miller-Independence vein is being explored. The drill is understood to have cut the vein at depth where about six feet in width of ore has been indicated. Some of the vein matter contained visible gold. With the big vein of the Miller-Independence dipping about 65 degrees to the south and the new vein found on the southern part of the Cotter dipping to the north, it would appear probable that the two orebodies would merge at depth. Everything considered, the extremely unfavorable weather and accompanying difficulty in transporting machinery and supplies to the property, as well as inability to obtain fuel, the results achieved at the Miller-Independence, the Cotter, the Cullen-Renaud and other nearby properties, the camp is gradually working into a very important place, and outside interest is steadily increasing.

### Dome Mines.

The resumption of milling operations at the Dome Mines early in the new year is now considered a possibility in well-informed circles. The underground workings of the mine have been placed in a satisfactory condition to best meet the demands of the 1,300-ton mill. Not only is this the case, but it is also learned that so favorable have been the developments at depth, that besides adding greatly to the ore reserves of the mine, the average grade of ore to be treated will be higher. With ample cash available and a large tonnage of good grade ore available for treatment in the mill at once, some 400,000 tons of \$5.10 ore being already mined in a shrinkage stope at the property, it is believed but a short time will elapse before the mine is placed on a footing quite as profitable as pre-war days.

### Imperial.

It is reported that the Imperial Mine is being dewatered, preparatory to a thorough examination by the McIntyre-Porcupine. During the early days of the camp the Imperial attracted a good deal of attention. Surface indications were promising, a number of quartz stringers in a large dike containing visible gold.

### Chromite in Reaume Township.

An encouraging deposit of chrome has been opened up on a group of claims in the Township of Reaume, some six or eight miles southwest from Cochrane. The result of work carried on during the past summer is said to have opened up fair possibilities. The district is easily accessible by water route from the Transcontinental, being situated immediately west of the Frederickhouse River.

### Gold Lake Company.

The Gold Lake Mining Company, with its head office in Toronto, has been formed for the purpose of operating a property in the southern part of the Township of Deloro, in the Porcupine district. The company own nine claims situated near Gold Lake. A number of men are now engaged in road work, and camp buildings are being erected.

### Prospecting in Langmuir Township.

Excellent results are said to have attended exploration work on a group of fourteen claims situated in the Township of Langmuir. It is stated that a wide vein has been opened up for a distance of about 200 feet, in which pyrrhotite and chalcopyrite is present in what is believed to be commercial quantities.

### Bonsall Property, Gowganda.

According to word from Gowganda, work has been suspended on the Bonsall property, which is controlled by M. J. O'Brien and Sir Clifford Sifton. Results are said to have been reasonably satisfactory.

## BRITISH COLUMBIA

### Queen-Kootenay Belle Consolidation.

The Queen, Vancouver, Kootenay Belle and Alexandra Mining Groups, situated on Sheep Creek, Nelson (B.C.) Mining Division, have been consolidated under

control of Mr. A. W. McCune, of New York. For some time it has been the opinion of mining engineers that these properties to be successfully operated would have to be placed under one management. This having been accomplished, it is believed that their joint output should be very materially increased. Sheep Creek has been a producer of gold since 1900. The Queen Mine was a producer from 1900 up to two years ago, when, as a direct result of labor difficulties, operations were suspended. In that time the camp produced gold to the amount of about \$2,500,000, of which the Queen was responsible for \$1,312,654 and the Kootenay Belle, \$104,972. Work has been commenced upon the portal of a 3,000-ft. crosscut commencing at the Malwaaz (one of the claims) and running southeast across the several properties to the Alexandra, which will cut several parallel veins. The new pipe line from the compressor to the new portal is also under way. About 25 men are being employed and this number will be increased to 200. New development will entail an expenditure of over \$200,000. The erection of a 200-ton mill, replacing the old Queen mill, is contemplated and buildings are being remodeled and renovated. A power line and telephone service with the City of Nelson are being arranged for. The manager in charge is Mr. Marcus M. McCune.

Mr. John Hopp, the operator of the largest placer ground areas of the Cariboo District, British Columbia, has come to the Coast from the interior and states that, because of the late spring and early summer of 1918, the gold production of that camp will be considerably reduced in comparison with that of 1917. Mr. Hopp asserts that it has not been possible to carry on new development to the extent necessary because of lack of labor and of capital. The difficulty in securing men, together with the general high costs and the fixed value of gold, has held the operators back seriously. Investors, Mr. Hopp explains, have shown little interest in such propositions as that offered by the placer gold fields of the Cariboo. He is looking forward, however, to better times with the coming of peace.

### B.C. Mines Department Lets Contract for Diamond Drilling.

The International Diamond Drill Contracting Company, of Spokane, Wash., has been awarded a contract by the Minister of Mines of British Columbia for 10,000 lineal feet, more or less, of drilling on the Snowstorm Group of Copper-Silver-Gold Claims, situated in Highland Valley, Yale District. This is the same company that has been engaged in the development of the deposits of Copper Mountain for the B.C. Copper Company and the Canada Copper Co., for which concern it drilled a total of 100,000 feet. The Government work will start without loss of time.

### STANDARD SILVER-LEAD.

The Standard Silver-Lead Mining Co. during the month of June last netted \$16,137 in profits. At the close of that month the company's surplus was increased to \$203,112. These figures offset the report for the month of May, when there was a loss of \$6,272. The change from loss to profit is explained by the receipt of \$41,917 on operating account in June, as compared to \$21,720 in the previous month, the items of June including \$35,809 from zinc sales and \$3,059 in final settlement of sales for April.

**MARKETS**

**TORONTO MARKETS.**

Cobalt oxide, black, \$1.50 per lb.  
 Cobalt oxide, grey, \$1.65 per lb.  
 Cobalt metal, \$2.50 per lb.  
 Nickel metal, 45 to 50 cents per lb.  
 White arsenic, 12 cents per lb.  
 Nov. 26, 1918—(Quotations from Canada Metal Co., Toronto).  
 Spelter, 10½ cents per lb.  
 Lead, 10¼ cents to 10½ cents per lb.  
 Antimony, 14 cents per lb.  
 Copper, casting, 28 cents per lb.  
 Electrolytic, 29½ cents per lb.  
 Ingot brass, yellow, 21 cents; red, 26 cents per lb.  
 Nov. 26, 1918—(Quotations from Elias Rogers Co., Toronto).  
 Coal, anthracite, \$12.00 per ton.  
 Coal, bituminous, nominal, \$9.50 per ton.

**NEW YORK MARKETS.**

Copper—Fixed for the period August 7, 1918, to January 1, 1919, at 26 cents per lb.  
 Tin—Prices are nominal. Supply is controlled by the American Iron and Steel Institute.  
 Silver—The U.S. Treasury announced on Aug. 15 that the maximum price was fixed at \$1.01½ per ounce.  
 Lead—The producers' price is 8.05 cents per lb.  
 Zinc—Market dull, 8 to 8½ cents per lb.  
 Aluminum—Fixed at 33 cents per lb.  
 Silver—101½ cents per ounce.  
 Molybdenite—\$1.00 to \$1.10 per lb.  
 Pyrites—30 to 40 cents per unit.

**STANDARD MINING EXCHANGE.**

J. P. Bickell & Co., report the following quotations on the Standard Stock & Mining Exchange, as of close, November 25th, 1918:

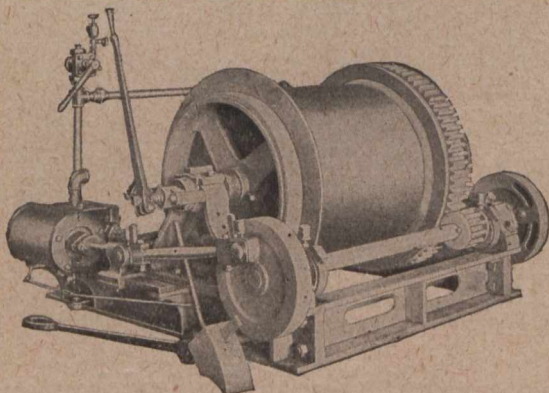
Gold.	Asked.	Bid.
Apex .....	.03½	.03¼
Boston Creek Mines .....	.39	.35
Davidson Gold Mines .....	.72	.70
Dome Extension .....	.25½	.25¼
Dome Lake .....	.19	.18
Dome Mines .....	13.25	12.50
Eldorado .....	..	.01
Elliott Kirkland .....	.36	..
Gold Reef .....	.02	.01
Homestake .....	.50	.45

Hollinger Cons. ....	6.25	6.20
Inspiration .....	.02½	.02
Keora .....	.09	.08
Kirkland Lake .....	.49	.48½
Lake Shore Mines, Ltd. ....	.91	.90
McIntyre .....	1.75	1.74
Moneta .....	.14	.13
Newray Mines, Ltd. ....	.18	.17
Porcupine Crown .....	.26¾	.26¼
Porcupine Imperial .....	.03	.02¾
Porcupine Tisdale .....	.02	.01½
Porcupine Bonanza Mines .....	.04	..
Vipond .....	.25	.21
Preston East Dome .....	.04¼	.03¾
Schumacher .....	.34	.33½
Teck-Hughes .....	.31	.27
Porcupine V. N. T. Gold Mines .....	.25	.20
Thompson Krist .....	.07	.06
West Dome .....	.14¾	.14¼
Wasapika Gold Mines, Ltd. ....	.50	.46

*Silver.*

Adanac Silver Mines, Ltd. ....	.10½	.10¼
Bailey .....	.05	.03½
Beaver Consolidated .....	.40	.39
Chambers-Ferland .....	.15	.12½
Coniagas .....	3.50	..
Crown Reserve .....	.25	.23½
Foster .....	.05	.04¼
Gifford .....	.03½	.03
Great Northern .....	.04	.03¼
Hargraves .....	.02¾	.02½
Hudson Bay .....	..	20.00
Kerr Lake .....	6.25	..
La Rose .....	.36	.35¼
Lorrain Con. M., Ltd. ....	.02	.01
McKinley-Darragh-Savage .....	.48	.47½
Mining Corporation of Canada .....	2.75	2.60
Nipissing .....	9.00	8.60
Ophir .....	.04¾	.04½
Peterson Lake .....	.09½	.08¾
Silver Leaf .....	.01	..
Temiskaming .....	.32	.30
Trethewey .....	.24	.22
Wettlaufer .....	..	.04
York Ontario .....	.01	.00½

The Rossland Mining Camp of British Columbia has been severely hit by the Spanish influenza epidemic. The mines have closed down and even the daily newspaper of the town has ceased publication.



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We manufacture an exceedingly large range of styles and sizes of Mine Cars: Rotary, Side Dump, End Dump, Tipple Cars, Skip Cars, etc.

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**MINE HOISTS**

We show herewith one standard type of our small Mine Hoists for use in the smaller mines, or for prospecting or development work. We make many other designs, besides the one illustrated, one of which is probably just the Hoist you are looking for.

We also design special Hoists to meet the exact needs of the user. We build them to your order, just the way you want them built.

Made in 7 sizes, from 10 Horse Power to 50 Horse Power, and with any Diameter Drum up to 48 inches.

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### MR. JUSTICE MURPHY'S DECISION IN RELIEF ACT CASE.

Does the Relief Act covering licenses on coal and petroleum lands, passed by the Legislature of British Columbia in 1915, automatically protect from relocation, coal and petroleum lands upon which license fees have become due, but have not been paid, subsequent to August 1st, 1914? This in effect is the pleading of the Minister of Lands in the action brought against the Minister by Messrs. Harding, Johnston and Gillespie. Mr. Justice Murphy, of the Supreme Court of British Columbia, has decided against the Minister, but it is understood that the case will be appealed.

Some years ago, coal prospecting licenses numbered 9852-3-4 were applied for and secured. The claims are on the North Thompson River, in the vicinity of Kamloops. On the 17th day of May, 1914, the annual fees were paid, keeping the title in good shape until May, 1915. Under the Relief Act mentioned above, application was made in July, 1915, for relief against forfeiture as the current year's fees had not been paid. At the time, no relief was granted, but a suggestion came from the Minister of Lands to the effect that a proportionate amount of the fees would be accepted. This suggestion was not acted upon. On the 18th day of February the lands were located by Freeman Harding, James Garfield Gillespie and William Henry Johnston, who subsequently gave the requisite 60 days' notice of intention to apply for licenses, duly published the notice in the Gazette and a Kamloop's newspaper, and applied to the Minister of Lands for their licenses, which application was refused.

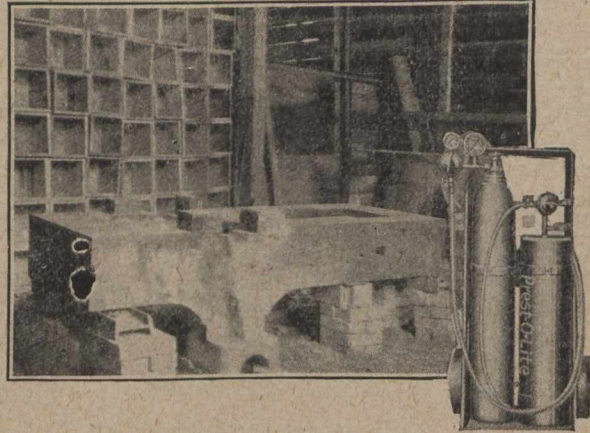
A protest was entered, and on the 9th day of May the Minister of Lands referred the matter to the Cabinet Council, who sustained his decision, and on the 23rd day of May the new applicants for licenses gave notice of appeal to the Supreme Court.

Meanwhile, that is to say, on March 21st, the original license holders paid to the Department one year's fees, namely, \$300.00, and an Order-in-Council was passed on the 31st day of May, extending relief to the original holders for the balance of the fees. In the action against the Minister of Lands, the old licensees were not made parties to the trial, although the judge said they should be given an opportunity of hearing. Mr. A. M. Whiteside, of Vancouver, was present, representing the assignee of a portion of the claims, but as he had not received instructions for all the old license holders, Sir Charles Tupper, for the plaintiffs, successfully prevented his argument being heard.

A conference of miners of District 18, which includes the eastern section of British Columbia and the Province of Alberta, will be held on January 6th to discuss problems relative to coal mining operations within the limits of that section and the men's attitude toward the same.

There is some doubt as to what the Munition Resources Commission of the Dominion of Canada proposes to do in regard to the continuance or the discontinuance of the work of prospecting for platinum now in progress on the Tulameen River, British Columbia. At the time of writing, this activity continues. A No. 3 traction Keystone drill, complete with tools and accessories, is in operation. Whether it will be maintained throughout the winter, now that the pressing war need for this metal has passed, is a question being asked by those interested.

## Oxy-Acetylene Welding and Cutting



### 3½ Ton Press Frame Repaired by Welding

In an accident this big power press frame, weighing 3½ tons, was broken in two pieces—the breaks occurring just below the bearing. By the Prest-O-Lite Welding Process the broken frame was repaired and ready for service in 40 hours.

Two welds, 11 inches wide and 9 inches deep, were necessary. The actual welding time was 7 hours and 40 minutes.

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PROVINCE OF ONTARIO



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# Ontario's Mining Lands

---

Ontario, with its 407,262 square miles of area contains many millions of acres in which the geological formations are favorable for the occurrence of minerals, 70 per cent. of the rocks being of pre-Cambrian age. The phenomenally rich silver mines of Cobalt occur in these rocks; so also do the far-famed nickel-copper deposits of Sudbury, the gold of Porcupine and Kirkland Lake, and the iron ore of Helen, Magpie and Moose Mountain mines.

Many other useful minerals, both metallic and non-metallic, are found in Ontario:—actinolite, apatite, arsenic, asbestos, cobalt, corundum, feldspar, fluorspar, graphite, gypsum, iron pyrites, mica, molybdenite, natural gas, palladium, petroleum, platinum, quartz, salt and tale.

Building materials, such as marble, limestone, sandstone, granite, trap, sand and gravel, meet every demand. Lime, Portland cement, brick and tile are manufactured in quantity within the Province.

Ontario in 1917 produced 46 per cent. of the total mineral output of Canada. Returns made to the Ontario Bureau of Mines show the output of the mines and metallurgical works of the Province for the year 1917 to be worth \$72,093,832, of which the metallic production was \$56,831,857.

Dividends and bonuses paid to the end of 1917 amounted to \$11,486,167.45 for gold mining companies, and \$70,821,829.34 for silver mining companies, or a total of \$82,307,996.79.

The prospector can go almost anywhere in the mineral regions in his canoe; the climate is invigorating and healthy, and there is plenty of wood and good water. A miner's license costs \$5.00 per annum, and entitles the holder to stake out in any or every mining division three claims of 40 acres each. After performing 240 days' assessment work on a claim, patent may be obtained from the Crown on payment of \$2.50 or \$3.00 per acre, depending on location in surveyed or unsurveyed territory.

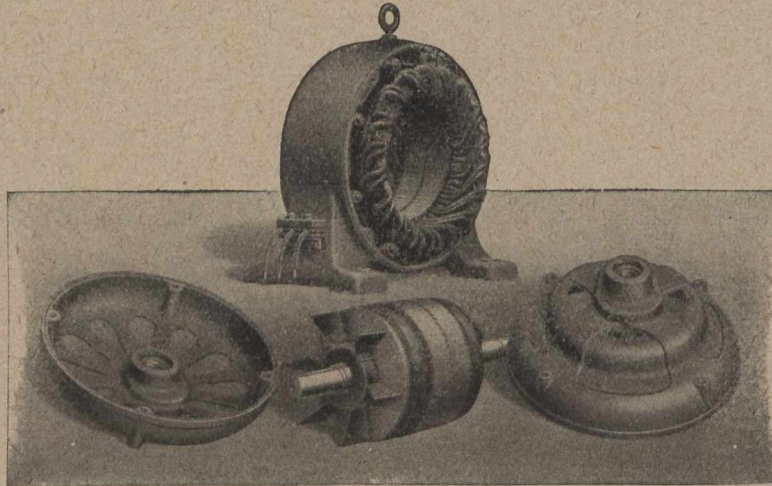
For list of publications, illustrated reports, geological maps and mining laws, apply to

**G. H. FERGUSON,**

MINISTER OF LANDS, FORESTS AND MINES,

Toronto, Canada

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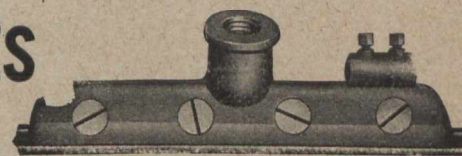
Toronto  
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Regina  
Calgary  
Vancouver

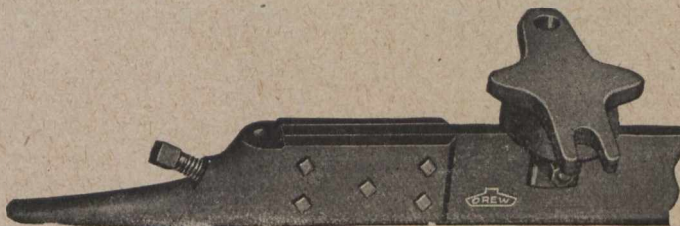
# Overhead Material Which Will Cut Your "Overhead" Costs



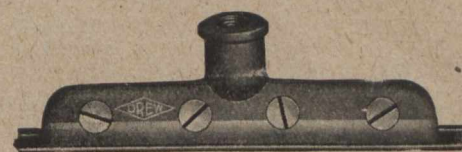
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# PROVINCE OF QUEBEC

## MINES BRANCH

Department of Colonization, Mines and Fisheries

*The chief minerals of the Province of Quebec are Asbestos, Chromite, Copper, Iron, Gold, Molybdenite, Phosphate, Mica, Graphite, Ornamental and Building Stone, Clays, etc.*

**The Mining Law gives absolute security of Title and is very favourable to the Prospector.**

**MINERS' CERTIFICATES.** First of all, obtain a miner's certificate, from the Department in Quebec or from the nearest agent. The price of this certificate is \$10.00, and it is valid until the first of January following. This certificate gives the right to prospect on public lands and on private lands, on which the mineral rights belong to the Crown.

The holder of the certificate may stake mining claims to the extent of 200 acres.

**WORKING CONDITIONS.** During the first six months following the staking of the claim, work on it must be performed to the extent of at least twenty-five days of eight hours.

**SIX MONTHS AFTER STAKING.** At the expiration of six months from the date of the staking, the prospector, to retain his rights, must take out a mining license.

**MINING LICENSE.** The mining license may cover 40 to 200 acres in unsurveyed territory. The price of this license is Fifty Cents an acre per year, and a fee of \$10.00 on issue. It is valid for one year and is renewable on the same terms, on producing an affidavit that during the year work has been performed to the extent of at least twenty-five days labour on each forty acres.

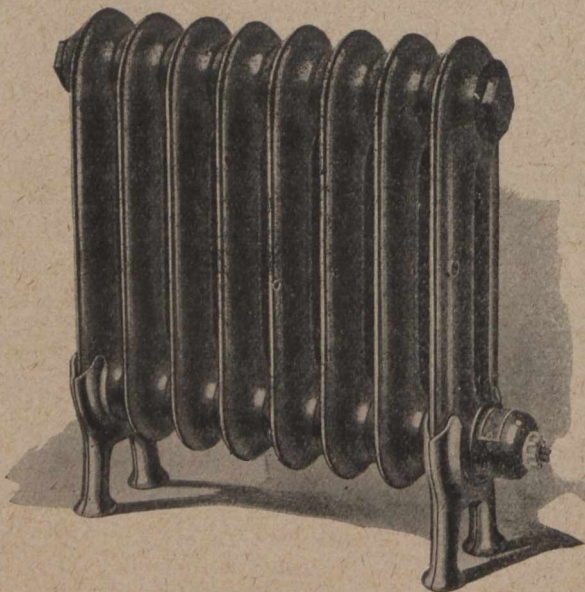
**MINING CONCESSION.** Notwithstanding the above, a mining concession may be acquired at any time at the rate of \$5 an acre for SUPERIOR METALS, and \$3 an acre for INFERIOR MINERALS

The attention of prospectors is specially called to the territory in the North-Western part of the Province of Quebec, north of the height of land, where important mineralized belts are known to exist.

**PROVINCIAL LABORATORY.** Special arrangements have been made with POLYTECHNIC SCHOOL of LAVAL UNIVERSITY, 228 ST. DENIS STREET, MONTREAL, for the determination, assays and analysis of minerals at very reduced rates for the benefit of miners and prospectors in the Province of Quebec. The well equipped laboratories of this institution and its trained chemists ensure results of undoubted integrity and reliability.

The Bureau of Mines at Quebec will give all the information desired in connection with the mines and mineral resources of the Province, on application addressed to

**HONOURABLE HONORE MERCIER,**  
MINISTER OF COLONIZATION, MINES AND FISHERIES, QUEBEC.



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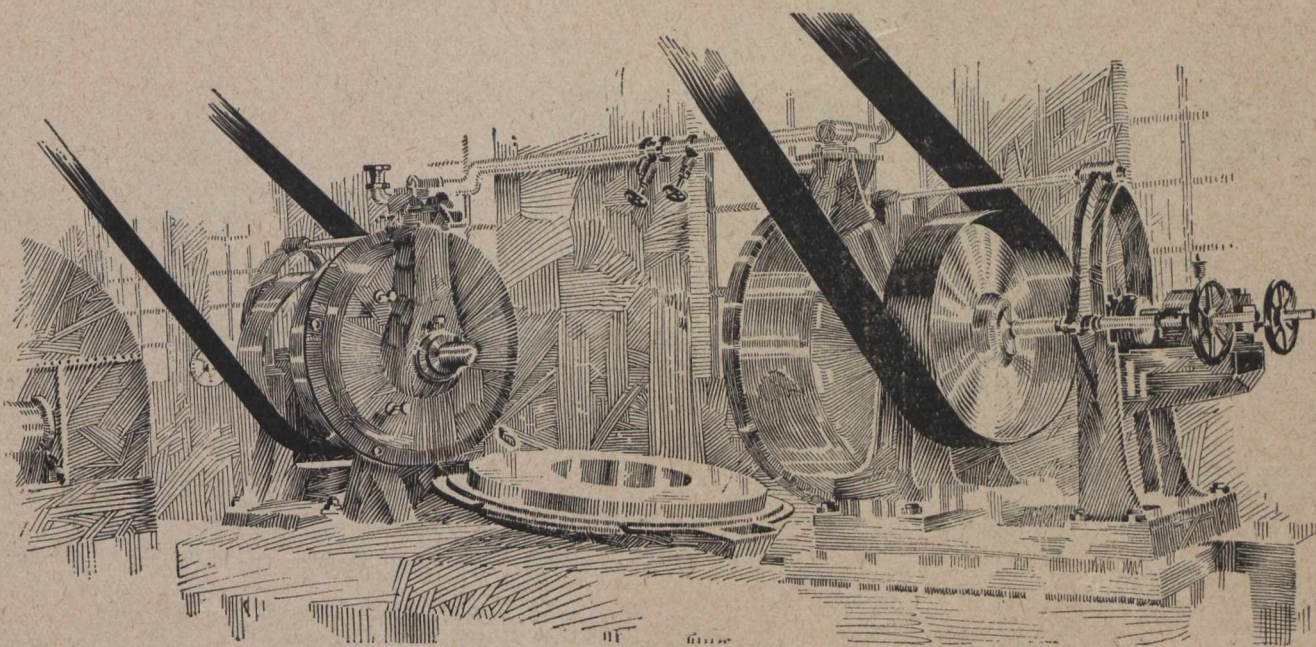
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# CANADA

## DEPARTMENT OF MINES

HON. MARTIN BURRELL, Minister.

R. G. McCONNELL, Deputy Minister.

### MINES BRANCH

#### Recent Publications

Iron Ore Occurrences in Canada, Vol. II. Compiled by E. Lindeman, M.E., and L. L. Bolton, M.A., B.Sc. Introductory by A. H. A. Robinson, B.A.Sc.

The Copper Smelting Industry of Canada. Report on, by A. W. G. Wilson, Ph.D.

Building and Ornamental Stones of Canada (British Columbia). Vol. V., by W. A. Parks, Ph.D.

Peat, Lignite and Coal; their value as fuels for the production of gas and power in the by-product, recovery producer. Report on, by B. F. Haanel, B.Sc.

Annual Mineral Production Reports, by J. McLeish, B.A.

The Coal-fields and Coal Industry of Eastern Canada, by F. W. Gray.

Occurrences and Testing of Foundry Moulding Sands. Bulletin No. 21, by L. H. Cole, B.Sc.

Analyses of Canadian Fuels. Parts I to V, by E. Stansfield, M.Sc., and J. H. H. Nicolls, M.Sc.

Clay Resources of Southern Saskatchewan, by N. B. Davis, M.A., B.Sc.

Summary Report of the Mines Branch, 1916.

The Mineral Springs of Canada. Part II., by R. T. Elworthy, B.Sc.

The Mines Branch maintains the following laboratories in which investigations are made with a view to assisting in the development of the general mining industries of Canada:—

**Fuel Testing Laboratory.**—Testing value of Canadian fuels for steam raising and production of power gas; analyses, and other chemical and physical examinations of solid, liquid and gaseous fuels are also made.

**Ore-Dressing Laboratory.**—Testing of Canadian ores and minerals, to ascertain most economical methods of treatment.

**Chemical Laboratory.**—Analysing and assaying of all mineral substances and their manufactured products. Copies of schedules of fees, which are slightly in excess of those charged by private practitioners, may be had on application.

**Ceramic Laboratory.**—Equipment is such that complete physical tests on clays and shale of the Dominion can be made, to determine their value from an economic standpoint.

**Structural Materials Laboratory.**—Experimental work on sands, cements and limes is also undertaken.

Applications for reports and particulars relative to having investigations made in the several laboratories should be addressed to The Director, Mines Branch, Department of Mines, Ottawa.

### GEOLOGICAL SURVEY

#### Recent Publications

Summary Report, 1917, Part D. Reports on field work in Manitoba.

Memoir 95. Onaping Map-Area, by W. H. Collins.

Memoir 96. Sooke and Duncan Map-areas, Vancouver Island, by C. H. Clapp.

Memoir 98. Magnesite Deposits of Grenville District, Argenteuil County, Quebec, by M. E. Wilson.

Memoir 99. Road material surveys in 1915, by L. Reinecke

Memoir 101. Pleistocene and recent deposits in the vicinity of Ottawa, with a description of the soils, by W. A. Johnston.

Memoir 103. Timiskaming County, Quebec, by M. E. Wilson.

Memoir 105. Amisk-Athapapuskow Lake district, by E. L. Bruce.

Map 63A. Moncton Sheet, Westmoreland and Albert Counties, New Brunswick. Topography.

Map 132A. Southwestern portion of Rainy River district, Ontario. Soils.

Map 135A. Lower Churchill river, Manitoba. Geology.

Map 145A. Timiskaming county, Quebec. Geology.

Map 154A. Southwestern Yukon.

Map 157A. East Sooke, Vancouver Island, British Columbia. Topography.

Map 161A. Beaverton Sheet, Ontario, York and Victoria Counties, Ontario. Topography.

Map 162A. Sutton Sheet, York and Simcoe Counties, Ontario. Topography.

Map 163A. Barrie sheet, Simcoe County, Ontario. Topography.

Map 165A. Windermere, Kooteney district, B.C. Topography.

Map 174A. Blairmore, Alberta. Topography.

Map 179A. Onaping; Sudbury and Timiskaming districts, Ont. Geology.

Map 183A. Harricanaw-Turgeon basin; Abitibi, Timiskaming and Pontiac, Que. Geology.

Maps 1697 and 1698. Explored routes in a belt traversed by the Canadian Northern Ontario railway,—in two sheets: Sheet 1 Gogama to Missonga, Sudbury district; Sheet 2 Oatland to Penhurst, Algoma district, Ontario.

Map 1690. Whiteburn Gold District, N.S. Geology.

Map 1702. Klotassin, Yukon Territory. Geology.

Applicants for publications not listed above should mention the precise area concerning which information is desired.

Maps published within recent years may be had, printed on linen, at the nominal cost of ten cents each.

The Geological Survey will, under certain limitations, give information and advice upon subjects relating to general and economic geology. Mineral and rock specimens, when accompanied by definite statements of localities, will be examined and their nature reported upon.

Communications should be addressed to The Director, Geological Survey, Ottawa.

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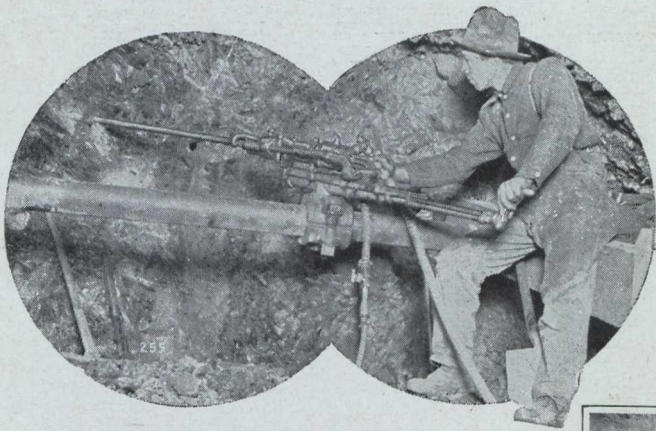
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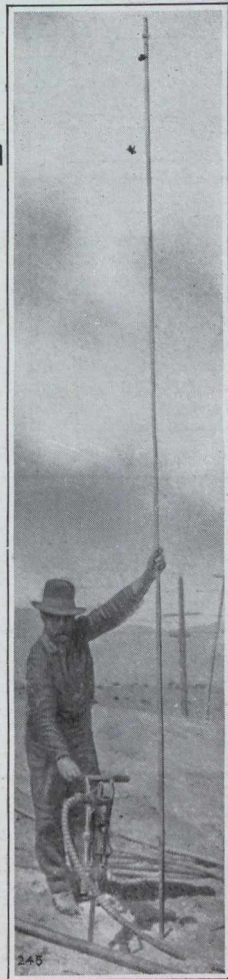
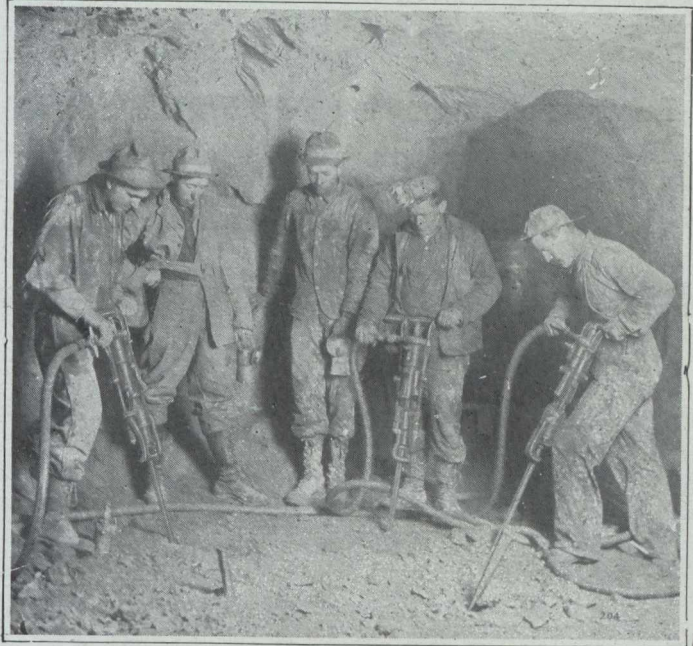
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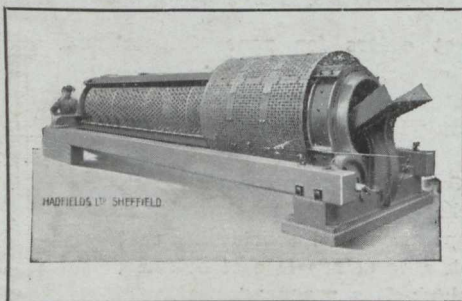
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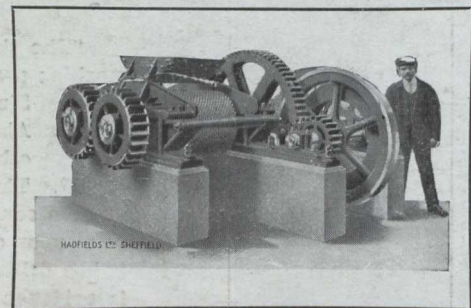
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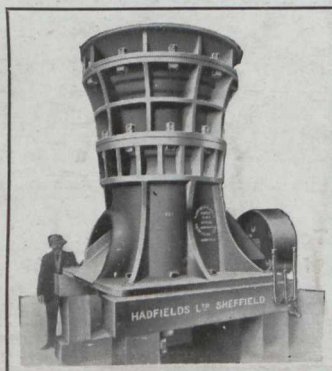
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