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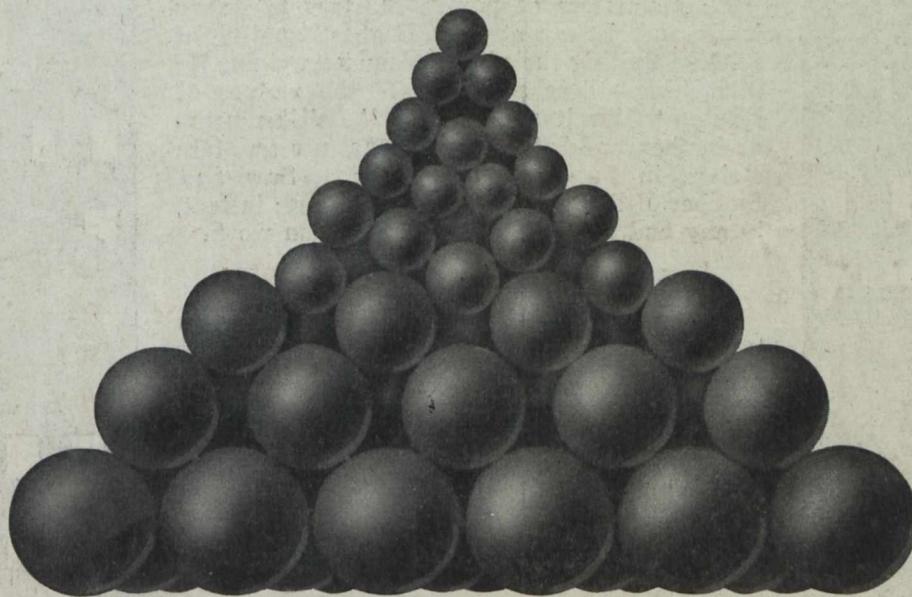
CANADIAN MINING JOURNAL

VOL. XL.

April 16, 1919.

No. 15

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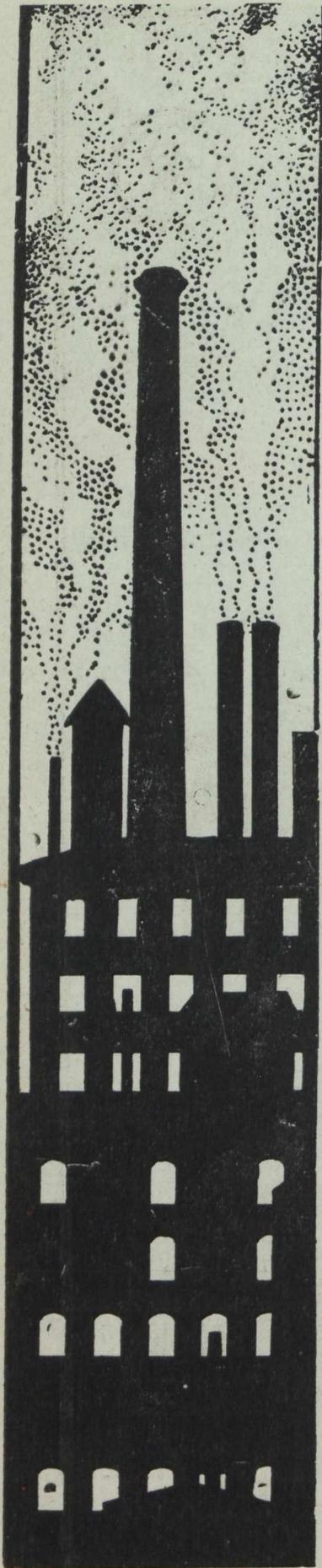
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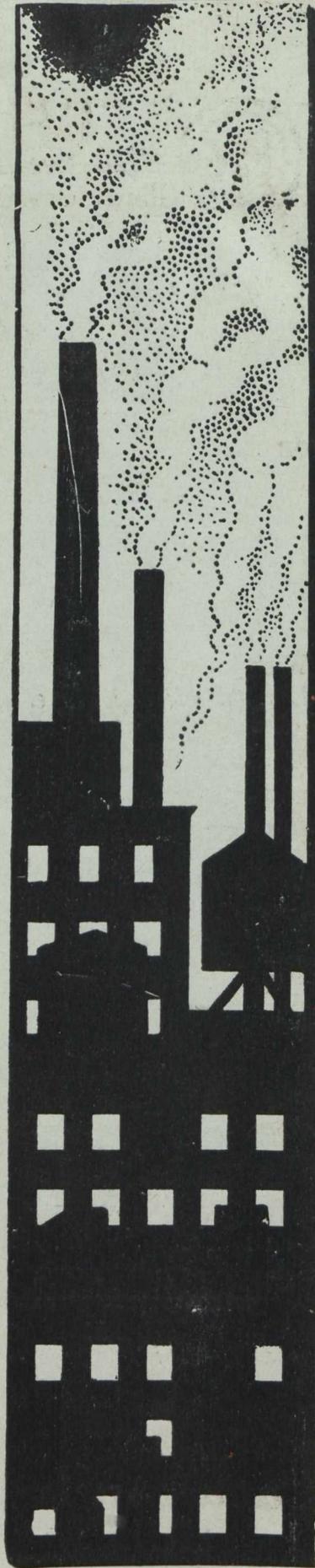
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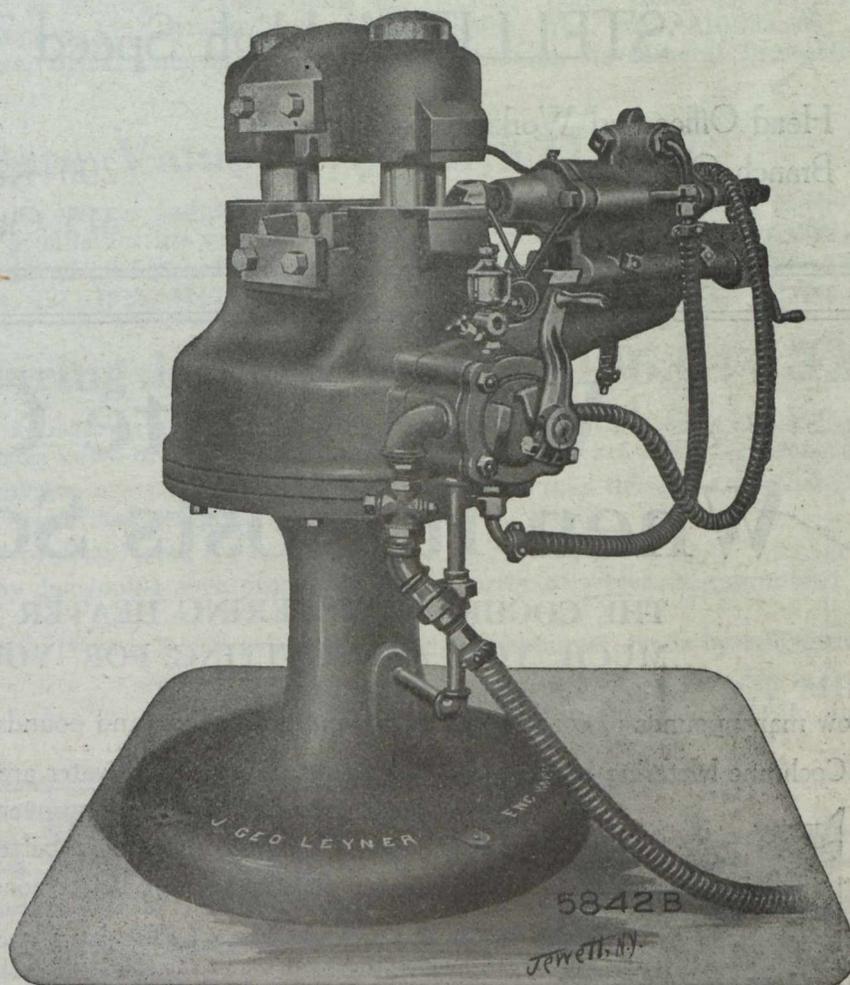
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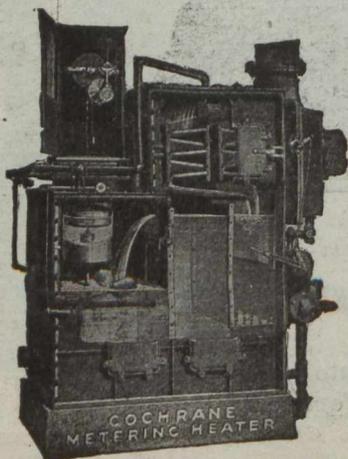
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Aggregate Value of \$595,571,107

The substantial progress of the Mining Industry of this Province is strikingly exhibited in the following figures, which show the value of production for successive five-year periods: For all years to 1895, inclusive, \$94,547,241; for five years, 1896-1900, \$57,605,967; for five years, 1901-1905, \$96,509,968; for five years, 1906-1910, \$125,534,474; for five years, 1911-1915, \$142,072,603; for the year 1916, \$42,290,462; for the year 1917, \$37,010,392.

Production During last ten years, \$296,044,925

Lode-mining has only been in progress for about twenty years, and not 20 per cent. of the Province has been even prospected; 300,000 square miles of unexplored mineral bearing land are open for prospecting.

The Mining Laws of this Province are more liberal and the fees lower than those of any other Province in the Dominion, or any Colony in the British Empire.

Mineral locations are granted to discoverers for nominal fees.

Absolute Titles are obtained by developing such properties, the security of which is guaranteed by Crown Grants.

Full information, together with Mining Reports and Maps, may be obtained gratis by addressing

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Nova Scotia possesses extensive areas of mineral lands and offers a great field for those desirous of investment.

Coal Over six million tons of coal were produced in the province during 1916, making Nova Scotia by far the leader among the coal producing provinces of the Dominion.

Iron The province contains numerous districts in which occur various varieties of iron ore, practically at tide water and in touch with vast bodies of fluxes. Deposits of particularly high grade manganese ore occur at a number of different locations.

Gold Marked development has taken place in this industry the past several years. The gold fields of the province cover an area approximately 3,500 square miles. The gold is free milling and is from 870 to 970 fine.

Gypsum Enormous beds of gypsum of a very pure quality and frequently 100 feet thickness, are situated at the water's edge.

High grade cement making materials have been discovered in favorable situations for shipping.

Government core-drills can be had from the department for boring operations.

The available streams of Nova Scotia can supply at least 500,000 h.p. for industrial purposes.

Prospecting and Mining Rights are granted direct from the Crown on very favorable terms.

Copies of the Mining Law, Mines Reports, Maps and other Literature may be had free on application to

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Commissioner of Public Works and Mines



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

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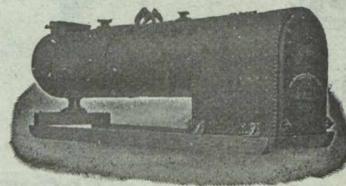
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THE FLOTATION PROCESS

MINERALS SEPARATION NORTH AMERICAN CORPORATION

Is the registered owner of the following Canadian patents: Nos. 74,621; 87,700; 84,322; 129,819; 94,516; 96,182; 96,183; 99,743; 127,397; 129,820; 134,271; 135,089; 137,404; 142,607; 147,431; 147,432; 148,275; 151,479; 151,480; 151,619; 151,810; 157,488; 157,603; 157,604; 160,692; 160,693; 160,694; 160,846; 160,847; 160,848; 169,849; 160,850; 160,937; 163,608; 163,707; 163,936; 164,587; 165,390; 166,415; 167,474; 167,475; 167,476; 167,603; 187,263.

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.

Minerals Separation North American Corporation

Head Office:
61 Broadway,
New York, N. Y.

Engineering Office:
220 Battery Street,
San Francisco, California.

Canadian Attorneys.

Messrs. Ridout & Maybee, Patent Solicitors, 156 Yonge Street, Toronto, Canada.

THE FLOTATION PROCESS

MINERALS SEPARATION NORTH AMERICAN CORPORATION

NOTICE

NOTICE is hereby given that we will enforce our patents and stop all infringements, but are prepared to grant licenses for the right to use all or any of our processes to those who wish to use them. To those who infringe or have infringed our patents, notice is given that a settlement for such infringement must precede the granting of licenses for the future use of same.

Notice is further given that no one is authorized to introduce our processes or apparatus into the United States, Canada or Mexico, without direct authority from us.

All applications should be made direct to

Minerals Separation North American Corporation

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New York, N.Y.

Engineering Office:
220 Battery Street,
San Francisco, California.

or through

Messrs. Ridout & Maybee, Patent Solicitors, 156 Yonge Street,
Toronto, Canada



PROVINCE OF ONTARIO



BUREAU OF MINES

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 talc.

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

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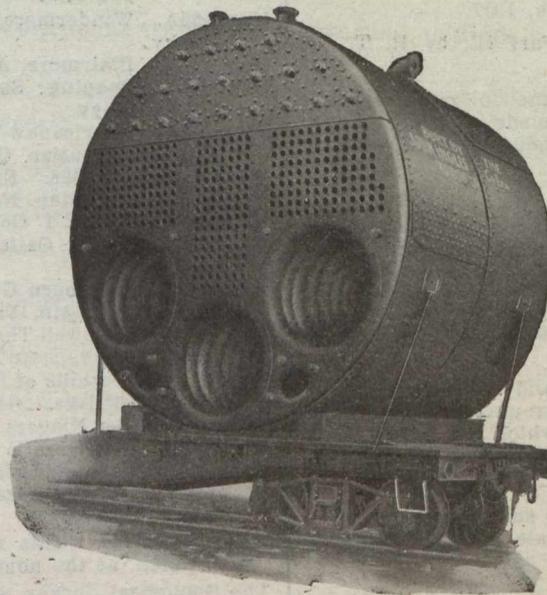
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CANADA

DEPARTMENT OF MINES

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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, 1917.

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. The annual Summary Report of the Geological Survey is now printed in parts. Applicants should therefore, state what particular geologist's report is required, or what subjects they are interested in.

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

Memoir 98. Magnesite Deposits of Grenville District, Argen-teuil County, Quebec, by M. E. Wilson.

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

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

Memoir 106. Road materials in a portion of Vaudreuil county, Quebec, and along the St. Lawrence river from Quebec boundary to Cardinal, Ontario, by R. H. Picher.

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 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.

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May. 1715. The Ontario peninsula. Geology.

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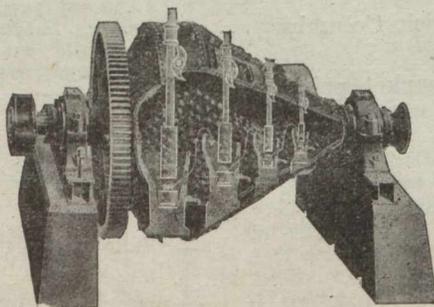
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EDITORIAL

CANADIAN COAL AND IRON AND THE TARIFF.

It should by this time be plain to all who have followed history since August, 1914, that the possession of coal and iron deposits, and their utilization in the arts, is a first requisite of national commercial importance, and also a first requirement of national defence.

The world may be—we sincerely trust it is—about to see disarmament and the abolition of conscript armies raised for the purposes of aggression. But the realization of ideals has time and again eluded the world when realization seemed most imminent, and in the questions of national armament there is no middle course. Either this world is about to see armies and navies reduced to small forces adapted for police purposes, or it is about to see armaments on a scale which even we in our day have not conceived.

Where does Canada stand in the matter of coal and iron supply? The iron and steel industry, which is mothered and fathered by coal supply, has now risen to be one of the most important single branches of industry in the Dominion. The disturbing feature is that this great superstructure of industry is reared on a shifting foundation, namely, a protective tariff, and is moreover dependent upon an outside source of supply for the raw material, because out of 2,242,337 tons of iron ore charged to furnaces in 1918, only 96,745 tons was ore of Canadian origin.

What about coal supply? The most thickly populated centres of Canada, the most highly industrialized, are, with the exception of the sporadic urban districts of Nova Scotia, utterly and entirely dependent upon United States coal at the present time.

What is the inevitable result of economic dependence? Is it not political subservience, sooner or later?

Canada has a coal production of 15,000,000 tons annually, and her iron ore production is negligible. The United States has an annual coal production of between 700 and 800 millions of tons, and the greatest output of iron ore in the world.

There are just two courses open to Canada. She can shape her fiscal policies so as to encourage the development of her coal and iron resources, thereby assuring herself of a modicum of political independence and some powers of military resistance, or she can resign herself to depending on the United States for coal and iron, or in other words, can place our country unreservedly at the mercy of our neighbors. There is the issue. We express no opinion thereon.

It is reported that the Canadian Pacific Railway has asked Parliament for authority to build a railway from Lanigan, Saskatchewan, to a point near the Carrot and Saskatchewan rivers, west of The Pas, Manitoba, to a point near Cumberland House. Such a line would serve good agricultural areas but it is the possibility of further extension to Northern Manitoba mineral areas that makes the news of particular interest to us.

CLASS LEGISLATION FOR ENGINEERS.

Some of the members of the Engineering Institute of Canada are conducting an active campaign in an endeavor to secure legislation which will make the engineering profession a closed corporation, such as that of medicine and law. Meetings have been recently held at which it was contended that great benefit would accrue to engineers by the securing of such class legislation.

Periodically some of those interested in engineering societies take up this question. Some engineers really believe that engineering societies should exist solely for the benefit of the members rather than for the benefit of the community. Naturally, therefore, they estimate the success of the society wholly by the individual benefit to be derived from its activities. They would attract engineers to such a society by claiming that the society will secure for its members some special privileges.

There is no good reason why engineers who consider their profession underpaid should not form unions as other workers do, to sell their services at a proper price. We agree that technical trained men in this country, on the average, are not receiving proper compensation for their labor. But we do not agree that any class of workers, be they engineers, drill runners or bricklayers, should be given, by legislation, exclusive rights to work at a given profession or trade, unless the determination of the qualifications of workers is undertaken by the Government. No engineering society should be allowed to usurp the functions of government.

It is sometimes argued that mining engineers should join the Engineering Institute of Canada, because that society is very active in the interests of its members, while the Canadian Mining Institute is not. The Mining Institute can well afford to lose those who would change their allegiance for such a reason. The Mining Institute is organized on a plan which does not allow service to members to be placed on a level with service to the industry. If there is any advantage it must come indirectly, as a recognition for service to the industry and the community. We are quite willing to admit that there are other and better reasons for appealing to mining engineers to join the Engineering Institute. We believe that, for many, membership in both Institutes would be desirable. But we do not get a higher opinion of the Engineering Institute for such activities as this campaign for class legislation. We are pleased to see signs of vigorous life in the Engineering Institute, and we wish it every success in its other activities. We hope, however, that in this effort it will fail.

The new haulage slopes at the Nova Scotia Steel & Coal Company's mines at Wabana are a little over two miles long. With these completed, the company has quick and easy access to its main ore deposit. The mining of this ore will be one of the greatest of submarine accomplishments.

VOCATIONAL TRAINING FOR RETURNED SOLDIERS.

Some idea of the work being done by the Vocational Training branch of the Department of Soldiers' Civil Re-establishment was given last week at a meeting of the Royal Canadian Institute, Toronto. Knowing that the man in charge of this work for Ontario is a mining engineer, Mr. H. E. T. Haultain, Professor of Mining in the University of Toronto, and that the whole department is under the direction of another mining engineer, Mr. W. E. Segsworth, of Toronto, our readers will be particularly interested in what is being accomplished.

About 150,000 Canadians have been wounded in the war. An attempt is being made to help all these men to overcome their disabilities. To a large extent the effort has been successful. The department workers begin their work with the returned men in the hospitals. In Ontario occupational work, such as weaving, basketry, wood carving, leather work, metal work, etc., is taught the men by aides trained by the Ontario branch at the University of Toronto. There have also been established curative workshops, where shoemaking, carpentry and other occupations are taught.

When a man is discharged from the hospital he is given the opportunity of training for a suitable position. A Board comprised of one medical man, the vocational officers and one layman outsider connected with the industry, helps in the selection of the occupation, arranges for teaching, secures a position for the trained man, and takes an interest in him until he is satisfactorily engaged in a suitable occupation.

Speaking of the work of this board, Prof. Haultain said:

"This staff examines commercial plants and factories, and makes arrangements for courses, being constantly in search for jobs wherein disabled men can be retrained. Each operation in industry is considered from the point of view of the disabled man. Our inspectors visit these industries weekly and report on the mans conduct and progress.

"This staff keeps track of all retrained men in Ontario. They are visited at their homes and occasionally at their places of employment. By means of these visits and by correspondence, a complete record is kept of every retrained ex-soldier.

The work in which Mr. Segsworth and Mr. Haultain are engaged is proving very successful. Hundreds of men have been retrained and hundreds are applying for training. There are now in Ontario classes 2,300 men. In the other provinces also the work is being carried on, the numbers being naturally smaller.

We understand that in placing men back in industrial occupations the Department has found mine managers very willing to co-operate. With the example of Segsworth and Haultain before them, they will not be satisfied until they have done much more than is expected of those in other industries.

Mr. T. J. Flynn, superintendent of Matachewan Gold Mines, who has been in New York for some time, is again at the Otisse property, work there having been resumed.

MR. SEGSWORTH'S WORK.

Walter E. Segsworth, Director of Vocational Training of the Department of Soldiers' Civil Re-establishment, has resigned. He will represent Canada at the Inter-Allied Conference on the re-habilitation of the disabled soldier, which is soon to be held at Rome, and will then take a rest before returning to private business.

He has been Director of Vocational Training since July, 1917. He will be succeeded by N. F. Parkinson, who since he returned from overseas has been Mr. Segsworth's assistant. In announcing Mr. Segsworth's resignation, Sir James Lougheed, Minister of Soldiers' Civil Re-establishment, says:

"Mr. Segsworth is one of those true Canadian citizens, who, during the war have done their part in solving war-time problems without considering their personal gain. Ever since he undertook this work at my request, he has devoted his entire energies without remuneration, to a problem for the solution of which there were no precedents, and which was of the complex character. He conceived the principles of industrial re-training along original lines, secured the sympathy and co-operation of educationalists, organized labor, and employers, and developed quickly a nationwide organization for the conduct of the work effectively and economically. In conceiving the plan for the rehabilitation of the disabled soldier, he applied the knowledge he had from university and technical training. In the building up and administration of the large organization necessary, he applied the principles he had found successful in the large commercial enterprises he has directed. The success of his efforts is a credit to pure Canadian enterprise and ability. Testimony that Canada is in the forefront in the possession of a comprehensive and successful national scheme of rehabilitation for disabled soldiers has come from all the allied nations."

NORTH CANADA EXPLORATION CO.

The mining machinery of the Sultana mine, at Kenora, is being shipped to the Pas, for use at Mile 194 on the Hudson Bay Railway. The North Canada Exploration Company are the owners of this machinery, and also owners of the Sultana mine. Last September they purchased from John Forbes eight mining claims situated a short distance off the railway, at Mile 194, for \$280,000. A shaft 75 feet in depth, was sunk on one of the claims, and assays of the ore encountered went as high as \$300 to the ton in copper, gold, nickle and silver.

These eight claims are to be incorporated into a company, to be known as the White Bear Mining Co., and active mining is expected to be carried on about June 1st.

Mr. John Forbes, the locator of this discovery, says the orebody is twice as large as the Mandy and Flin-Flon put together. He points out that it has a 72 foot lead, and runs for 7,000 feet without a break.—The Pas Herald.

H. C. Carlisle is leaving the Mandy mine for France. Mr. Carlisle is interested in the engineering designs of reconstructing the devastated portions of the French battle fields. He may go with a body of American engineers. The Mandy will close down further operations pending the arrival of a railway from The Pas. It is estimated that 180,000 tons of low gradé ore lies undeveloped in the mine,

Annual Meeting of Mining Society of Nova Scotia

The 26th Annual Meeting of the Mining Society of Nova Scotia will be held in New Glasgow on the 23rd and 24th of April. The President, Colonel Thomas Cantley, will be in the chair. Following is provisional programme of the proceedings:

Wednesday morning, the 23rd, will be taken up by ordinary business, and the presidential address.

In the afternoon papers will be presented as follows: "Salt & Salt Mining," by Mr. L. H. Cole, of the Department of Mines. This paper will have special reference to the recent discovery of rock-salt at Malagash, Nova Scotia, which was described in a recent number of the JOURNAL.

Mr. C. M. Odell, Resident Engineer of the Dominion Coal Company, will speak on "Romance and Reality in Coal Mining," two subjects on which he is especially qualified to speak. Those who heard Mr. Odell speak last year in Sydney on "Gas Engines" have pleasurable anticipations of his latest exposition.

Lt. George Morley, of Glace Bay, was formerly employed in the Survey Department of the Dominion Coal Company, and will describe tunnelling operations on the Western Front. This is a subject that will appeal to the Cape Breton members, who were so well represented in the tunnelling corps.

Major J. W. Maddin, President of the Cape Breton Branch of the Great War Veterans' Association, who went overseas with the 185th Cape Breton Highlanders, will speak on the "Returned Soldier."

On Wednesday evening, Dr. A. O. Hayes, of the Geological Survey, will give an illustrated description on the "Origin of the Iron Ore Deposits of Wabana, Newfoundland." Those who are familiar with Dr. Hynes' monograph on this subject will look forward with pleasure to seeing microscopic slides of the boring algae which are believed to have played so important a part in the formation of the Wabana ores. It is expected that some interesting references will also be made to the early history of the development of the ore properties by members of the first prospecting parties.

On Thursday visits will be paid to the Shipbuilding Plant of the Nova Scotia Steel & Coal Company at Trenton, and to the Allan Shaft Colliery of the Acadia Coal Company at Stellarton.

In the afternoon a paper is anticipated detailing some of the recent geological discoveries and ascertained facts yielded by the prospecting work carried on for several years past by the Mining Engineer of the Acadia Coal Company. Some long-debated and much disputed conditions in the Acadia Company's area of the Pietou coalfield should be better understood, as the result of the information it is anticipated this paper will give the members of the Mining Society. An active discussion is looked for following the paper.

Mr. F. E. Lucas, the Economy Engineer of the Dominion Steel Corporation, will speak on the "Market for Nova Scotia Coal," and Mr. J. D. Kendall, of Sydney, will give a paper on the "Formation of Coal."

Further papers are anticipated dealing with some

remarkable economies that have been effected in the use of compressed air underground by the check afforded by an air-meter, with some remarkable tonnages that have been released in limestone quarry operations by one blasting operation, and a paper is also looked forward to which will tell of a submarine mining operation in Nova Scotia where a thin seam of coal is entirely removed in undersea territory by electrical coal-cutters, and the use of the long-wall method of extraction. So far as is known this colliery is carrying on unique practice in Nova Scotia, and it is hoped this paper will be presented.

The meeting will end with a smoking concert.

The Nova Scotia mining men are anxious to see visitors from the West, and any who can make the trip will, in addition to receiving a warm welcome, hear some papers worth while, and will, we believe, not be disappointed in the discussions.

The Canadian Mining Institute will be represented at this meeting by Mr. D. H. McDougall, who, in addition to being President of the C. M. I., is also the past-President of the Mining Society of Nova Scotia.

—F. W. G.



ROBERT BRYCE,

Mining Engineer, Toronto, recently elected a councillor of the Canadian Mining Institute.

-:- The Dolly Varden Case -:-

The Mining Committee of the British Columbia Legislature has submitted a report declaring that the Taylor Engineering Company, which met with financial disaster in the construction of a railway from the coast at Alice Arm, B.C., to the Dolly Varden Group of Mineral Claims, is justly entitled to payment in full of the cost of the work done plus 10 per cent contractor's profit. It is asserted that the evidence shows that the contracting company had assurances that its investment in the road, beyond the originally estimated cost, would be repaid and that, reposing confidence in these assurances, it went forward to the limit of its financial ability. Therefore the committee takes the position that the contracting company, and its creditors, should be fully protected before the Provincial Legislature consents to the renewal of the railroad charter.

Recommendations made by the Committee to the House may be summarized as follows:

That the charter of the Dolly Varden Mines Railway, which expired on December 31st last, be renewed to the Dolly Varden Mines company upon compliance with the conditions set forth in the draft bill accompanying the report; that in the event of the mines company and the engineering company being unable to agree upon the construction cost in 1918, it be referred to the Supreme Court to ascertain the cost, and that cost, together with 10 per cent thereof added for contractors' profits, be declared a debt owing by the Dolly Varden Company to the engineering concern; that the sum ascertained be a charge on the railway and all assets of the Dolly Varden Mines Company in British Columbia, subject only to a mortgage for \$150,000 and interest in favor of Goldfields Consolidated, from which the Dolly Varden Mines Company borrowed that amount at six per cent interest, and which mortgage fell due on the 1st of January last, and to the balance of purchase money due to Donald W. Cameron in respect of the Wolf Group of Mineral Claims.

Further, the Committee recommends that all wages for work on the railway in 1918 be paid by the Dolly Varden Mines Company within fourteen days after the enactment of the Act presented along with the report; that the balance of the moneys due to the Taylor Engineering Company in respect of railway construction be paid within thirty days after the amount thereof is ascertained, and that, if the mines company does not wish to assume the burden of such payments, it must notify the Minister of Railways within one week after the adoption of the report by the Legislature in which event the Taylor Engineering Company shall have the right to acquire from the Dolly Varden Mines Company the railway and all assets, the mines company to be entitled to receive from the engineering company the amount of its investments in such assets. Also that in the event of the engineering company acquiring the railway and assets, it shall pay off the mortgage to the Goldfields Consolidated or otherwise protect the mines company against all claims and also the amount due on the purchase of the Wolf claims. Should the Dolly Varden Mines Company decide not to pay the cost of construction of the railway, and in the event of the engineering company exercising the right to acquire the line upon payment of the amount of the mines company's

investment in the same, the latter concern shall be released from all claims in respect of construction of the railroad and be entitled to be paid by the Taylor Engineering Company the amount of its investment.

The draft bill which accompanies the report is a lengthy one, covering all contingencies which might arise from the taking over of the property by the creditors of the Taylor Engineering Company.

An important provision is that the renewal of the charter does not take place until the Dolly Varden Company has first complied with the conditions as to the paying off of the wage claims and securing the general creditors of the Taylor Engineering Company. This provision it is said, instead of being a hardship on the company, was designed by the Committee to safeguard the Dolly Varden Company from any attack through the courts by the Temiskaming Company under its option to purchase. It may be stated here, by way of explanation, that the Temiskaming Company holds from the Dolly Varden Company an option to purchase the Dolly Varden Group of Minerals Claims, the railroad and other associated assets, the consideration being \$900,000. Without this provision, it is asserted, the Temiskaming Company would be in a position to bring suit for specific performance, forcing the Dolly Varden Company into a position where they would only have \$150,000 or \$200,00 left in return for the entire investment of some \$640,000.

Should the Dolly Varden Company elect to let the engineering company's creditors pay off the wage claims and take possession of the property they will then be paid in full for their investment out of the profits of the mine, which was the way in which they were to be paid their balance of the \$900,000, for which a sale had been agreed upon. The draft act embodies in toto the conditions of operations which the Dolly Varden Company had agreed to accept from the Temiskaming Company, with a clause added providing that in the event of dissatisfaction over the working of the mine and the division of the profits, the aggrieved party may appeal to the Supreme Court and have an independent receiver appointed.

Subsequent to the presentation of the report to the House, Premier Oliver announced that representatives of the Temiskaming Company had complained that they had not been given an opportunity to submit evidence to the committee as to their position. He stated that it was not intended that any interests, concerned in the development of the resources of the country, should leave feeling that they had not been given fair treatment. He therefore moved that the report be referred back to the select committee with power to hear any further testimony bearing on the matter that the company in question or any other parties might have to offer. This was carried.

The committee's report clearly outlines the entire situation as disclosed by evidence adduced and is interesting. It follows, in part:

The dispute between the two companies comes before the Legislature in the form of a petition by the Dolly Varden Mines Company for an extension of the time given to it under the "Dolly Varden Mines Railway Act" of 1917 in which to complete the construction

of the Dolly Varden Mines Railroad, and a cross-petition by the Taylor Engineering Company, Limited, contractors for the construction of the road, praying that such a renewal of the Dolly Varden Mines Railroad charter be not granted except upon such terms as shall constitute their claim for the unpaid balance of the charge for construction, amounting to approximately \$462,500, as a lien upon the assets of the Dolly Varden Mining Company.

Upon the following facts the parties are in substantial agreement: The Dolly Varden Mines Company, incorporated in the State of Delaware, has been developing a group of mineral claims near the Kitsault River, about eighteen miles distant from Alice Arm.

The mining company entered into an arrangement with the Taylor Engineering Company, Limited, for the construction of a line of railroad to connect the mines with tide-water. In pursuance of this object the mining company obtained from the Legislature in 1917 a public Act authorizing it to construct the road. Section 11 of the Act provides that all work must be completed before December 31st, 1918.

At the outset a light dinkey road was required, following the path of an existing pack-trail, with capacity to haul out daily 30 tons of ore or concentrates. The mining company, in its desire to have the road completed and the mine operating before the close of the year 1917, desired that the work should proceed at once without the delay involved in having the usual surveys made and quantities calculated. The Taylor Engineering Company, Limited, accepted the contract on a cost plus 10 per cent basis. A written agreement that the work would not cost more than \$175,000 was given by the Taylor Engineering Company, Limited. This agreement, however, was, according to the evidence of Mr. Taylor, supplemented by a private verbal agreement whereby President Hubbard, of the Mining Company, agreed to see that any excess above this figure up to an extra \$100,000 would be paid.

After the road was commenced, labour difficulties, the increased cost of materials, improved standard of construction required, and unexpected difficulties in engineering resulted in an expenditure during the first season of over \$275,000 without the road being nearly completed. Mr. Hubbard observed the private agreement he had made to the extent of paying the contractor \$70,000 out of the extra cost of \$100,000, and work was stopped on the construction owing to lack of funds. Up to this point there is nothing in the relation of the two companies which calls for adjudication on the part of your Committee.

The present dispute arises out of the operations for the year 1918. Mr. Taylor was very anxious to complete the construction of the road. At the same time the shareholders of the Dolly Varden Mines Company, through Mr. Hubbard, were endeavouring to negotiate a sale of the property to the Granby Consolidated Mining, Smelting, and Power Company, Limited. Mr. Hubbard represented to Mr. Taylor that the Dolly Varden Company was unable to assume any financial responsibility for further work done upon the road, but assured Mr. Taylor that if he desired to go on at his own risk he would be fully paid in the event of the sale to the Granby Company being made. In the event of the sale to the Granby Company not being made, Mr. Hubbard stated that so long as the work done was done to the satisfaction of the Engineers of the Dolly Varden Company, the Taylor Engineering Company, Limited, would have all its just claims paid and be given proper

compensation for engineering and contractor's profits out of any subsequent disposition of the mine.

The letter from Mr. Hubbard to Mr. Taylor, dated May 14th, 1918, is as follows:—

Vancouver, B.C., May 14th, 1918.

"Gentlemen,—I understand that you have proposed to Mr. Sylvester, of the Granby Company, that the Taylor Engineering Company should resume construction of the Dolly Varden Railroad and carry it on pending the examination of the Dolly Varden properties by the Granby Company; that if the Granby Company should elect to exercise its option and purchase the Dolly Varden properties, the Granby Company would reimburse the Taylor Engineering Company for the outlay and make satisfactory arrangements with you for the completion of the road. I understand that Mr. Sylvester has indicated a willingness to accept your offer.

"We are not concerned with any arrangement you may make with Mr. Sylvester in regard to the matter, provided the Granby does ultimately take the properties over; but in case they should not do so, it is obvious that your relations with the present owners of the property would become important and would require serious consideration.

"You are already fully informed of the limitations and conditions affecting the ownership and the policy of the owners at this time, and this knowledge will enable you to readily understand the position which I am compelled to take.

"The owners cannot and will not assume any liability whatsoever at this time. They will recognize neither a financial nor a moral responsibility to reimburse you, or to compensate you for this work in case the Granby Company does not buy the properties. They cannot and will not permit the properties to become subject to any lien for material, labour, or other charges. If the Taylor Engineering Company undertakes this work it will be necessary to have from them an instrument releasing the present owners from any financial or moral responsibility in the matter, and expressly waiving lien rights and protecting the property against such rights, not only as to the Taylor Engineering Company, but as to sub-contractors and material men.

"As against this, you can rely upon the following facts and assurances. If the Granby Company should not exercise its option to take over the properties, it is obvious that the present owners will either have to reorganize, complete the railway, and operate the properties themselves, or dispose of them to some purchaser other than the Granby Company. In either event and subject to the limitations stated below, I will personally assure you that any just claims you might have for the work done and materials furnished will be recognized and provided for either in case of reorganization or sale to others. Compensation for such claims would include not only a reimbursement, but proper compensation for engineering and contractor's profits. This assurance, however, presupposes that all work shall be done to the satisfaction of the owners, and will have to be approved by their Engineers, who would be the sole judges as to whether and how far the work would be acceptable.

"You may safely assume that the Dolly Varden properties with the railway constitute an asset of sufficient value to justify the assumption that any just claim you might have could and would be taken care of in the final 'work-out' of the proposition, and in any event. A final payment of \$25,000 is due on October 1st next on the Wolf claims, and the Goldfield Con-

solidated Mines Company loaned \$150,000 at 6 per cent, which is due January 1st, 1919, and for which the Goldfield Consolidated Company is entitled to a mortgage. This mortgage has not yet been recorded and its final form is yet to be agreed upon. I cannot personally guarantee it, but I have no doubt the payment on the Wolf claims will be made when due. In spite of the statement, the owners will not and cannot consider any arrangement which might create a lien upon the property, in case of foreclosure of the Goldfield mortgage, and failure to redeem by the present owners, arrangements could and would be made whereby you could redeem from such foreclosure.

"Yours truly, J. D. HUBBARD."

Relying upon the undertaking given in the latter paragraph of Mr. Hubbard's letter, the Taylor Engineering Company, Limited, resumed construction-work in 1918. All parties were at that time expecting the sale to the Granby Company to be carried out, and the work upon the road was done to conform to the requirements of the Granby Mining Company, which required a road-bed of increased width with easier curves and capable of hauling 400 tons of ore daily. This work was done, as the correspondence shows, under the supervision of Mr. R. R. McGinnis, the Resident Engineer for the Dolly Varden Mines Company.

The work was carried on in 1918 on the credit and capital of the Taylor Engineering Company, Limited, which by the middle of July of that year was at the end of its resources; when the offer of purchase was finally made by the Granby Company, it was refused by the directors of the Dolly Varden Mines Company, owing to dissatisfaction over the proposed conditions of operation. The financial embarrassment of the Taylor Engineering Company was very well known to Mr. Hubbard and his engineer, Mr. McGinnis. On August 19th, 1918, Mr. McGinnis wired to his chief, notifying him in effect that the Taylor Engineering Company were at that date so far committed financially that they could not stop construction without financial ruin. On October 12th the Granby offer was refused. On October 22nd construction-work ceased and the Taylor Engineering Company assigned for the benefit of its creditors.

Since assignment, Mr. Taylor, in his efforts to enable the Dolly Varden Mining Company to obtain the money wherewith to pay off his claim, succeeded in bringing Mr. Hubbard and a representative of the Temiskaming Mining Company, of Cobalt, together. Mr. Taylor endeavoured to effect sale of the Dolly Varden properties to the Temiskaming Company at a price of \$1,100,000, his services as an agent in the matter being given without charge. Since then, Mr. Hubbard, of the Dolly Varden Company, and Mr. Errington, representing the Temiskaming Company, have arranged for the sale of the property to the Temiskaming Company at a price of \$900,000, which includes a commission of \$50,000 to be divided between Messrs. Hubbard and Errington, this sale being conditional upon the renewal of the charter to the Dolly Varden Mines Railway.

The sum of \$900,000 is insufficient to pay all parties without loss, and your Committee understands that the proposal of the Dolly Varden Mines Company, which claims to have invested \$640,000 in the property, is that the charter for the railroad be extended on condition that they pay in full the wage claims for the construction of the road, amounting to approximately

\$150,000, and that the creditors of the Taylor Engineering Company divide with them the losses on the mine and railroad project.

It was urged by counsel for the Dolly Varden Mining Company that the President of his company, in his letter of May 14th, 1918, repudiating all moral and financial liability to the contractors, had no authority to bind the company to any undertaking in the event of a sale to the Granby Company not being carried out. Assuming this to be so, Mr. Hubbard having been allowed to assume the direction of the affairs of the Dolly Varden Mining Company, your Committee considers that it would be unjust to allow the Dolly Varden Mines Company to divest itself of liability for the construction of the railway, especially when the company is engaged in marketing the very labour and material which was placed on their property as a result of the inducements held out by its President in his letter of May 14th, 1918.

The correspondence and evidence showed that the work in 1918 was carried out without excessive cost under the supervision of Mr. R. B. McGinnis as resident engineer of the Dolly Varden Company, who reported to the President of his company on September 11th, 1918 (six weeks before work stopped): "The construction-work on the road has been well down throughout, and the only complaint we could make is that they had spent more money on the upper end than we intended to at this time."

Mr. McGinnis also says in the same report to his President: "If Granby takes the property it is all right, and if we keep it we still have a good road, but have a heavier investment than was absolutely needed at the start. We could have changed the road later."

The evidence of the Government Railway Engineers who inspected the line was, however, that the road only met with the minimum requirements, was not extravagantly built, and that had it been less well built they would not have taken the responsibility of issuing the company a certificate to commence railroad operations.

Your Committee, therefore, being satisfied on the evidence that the work was properly performed and that the Taylor Engineering Company resumed operations in 1918 on the promises made in the letter of May 14th by Mr. J. D. Hubbard, President of the Dolly Varden Mines Company, that the Taylor Engineering Company would be paid in full for its just claims, either from a sale to the Granby Company or "sale to others," feels that the Taylor Engineering Company is entitled to be paid in full for its "just claims . . . for work done and materials furnished," to "include not only a reimbursement, but proper compensation for engineering and contractor's profits," to adopt the language used by the President of the Dolly Varden Company in his letter to the Taylor Engineering Company.

Your Select Committee points out that since the Dolly Varden Mines Company entered into the proposals to sell to the Temiskaming Mining Company for a price of \$900,000, an offer of \$1,100,000 for the property had been made by Mr. S. S. Taylor, K.C., on behalf of the creditors of the Taylor Engineering Company. This offer is without the payment of commission to any one, and if carried into effect would enable all the creditors to be paid in full and leave a sum larger by over \$50,000 for the shareholders of the Dolly Varden Mining Company than under the offer of the Temiskaming Mining Company.

The Geophone

An Instrument for Detecting Sounds Underground.

The geophone, a listening instrument invented by the French during the war to detect enemy sapping and underground mining operations, and for the location of enemy artillery, is now being used by the U. S. Bureau of Mines, Department of the Interior, as a possible aid in locating miners who have been entombed after a disaster. The instrument was developed by United States engineers during the war, and is now used by the bureau according to plans drawn by these engineers.

Alan Leighton, assistant chemist of the bureau, who now has charge of these investigations for the bureau, has given the following statement of general information regarding the geophone:

The instrument, though small, is essentially a seismograph, since it works on the same principle as the ponderous apparatus with which earthquake tremors are recorded.

It consists of an iron ring about three and a half inches in diameter, within the centre of which is suspended a lead disk which is fastened by a single bolt through two mica discs, one of which covers the top and the other the bottom of the ring. There then are two brass cap pieces, the top one having an opening in its centre to which is fastened a rubber tube, leading to a stethoscopic ear piece. These cap pieces are fastened with bolts to the iron ring, and serve also to hold the mica discs in place.

We then have really nothing but a lead weight suspended between two mica discs cutting across a small air-tight box. If the instrument is placed on the ground and any one is pounding or digging in the vicinity, energy is transmitted as wave motion to the earth, and the earth-waves shake the geophone case. The lead weight, on account of its mass and because it is suspended between the mica, remains comparatively motionless. There then is produced a relative motion between the instrument case and the lead weight. The result is that a compression and rarefaction of the air in the instrument takes place. Since the rubber tube leading to the stethoscopic ear piece is connected with this space in the geophone, this rarefaction and compression is carried to the ear drum. Usually two instruments are used, one for each ear.

When the two instruments are used, it has been found that the sound is apparently louder from the instrument nearer the source of the sound. It is evident then that by moving the instruments properly a point can be found when the sound will be of the same apparent intensity in both ears. The direction of the sound is then on a perpendicular to the line connecting the centres of the two instruments either in front of or behind the observer. Further observation will show which side. Direction is quite accurately determined in this way. The sound is not actually louder in one ear than in the other, but the ear is capable of distinguishing the difference in time at which the sound arrives in the two instruments. Since this is the case, persons who are slightly deaf in one ear are said to still be able to determine direction with the instruments.

During the period of the war, engineers of the Mining Division of the Bureau of Mines were engaged in determining the distance that different mining

machines could be heard through the clay, shale, coal and the mine cover. Measurements were made also of the energy required in blows that they be heard definite distances through clay, shale and coal, as well as the distances at which shock waves resulting from the discharge of various explosives could be heard. A brief investigation of the factors influencing the transfer of energy from a mining tool to the clay and coal was also made in order that recommendations could be made as to the type of mining machine which could be used to accomplish the most work with the least noise.

In this connection it was found that sounds were transmitted only about half as far in clay as in shale strata and about one quarter as far in clay as in coal. To give some idea of the sensitiveness of the instrument it may be said that pounding with a pick on the bituminous coal can be detected for a distance of 900 feet, and the direction determined, and that pounding with a sledge can be heard as far as 1,150 feet. These measurements were made in the Pittsburg coal seam in the vicinity of Pittsburgh, where the coal is somewhat harder than in most other bituminous coal beds. The explosion of a one-ounce charge of dynamite was detected a distance of over two thousand feet through the shale strata. One interesting feature of the instruments is that the sound as transmitted to the ear is very characteristic of the instrument producing the sound. To illustrate: Twelve mining and carpentering operations were carried out on the coal rib. An engineer of the Bureau who had never used the geophones and who did not know what tools were to be operated was able to recognize and name nine of the instruments at a distance of several hundred feet through the strata. The other three sounds were accurately described, but the machines were not identified.

Now that the war is over the Bureau work has turned to the development of the instruments for peace time uses. In this connection it is thought they may be of great value to mine rescue crews who may be entering mines for exploration, and to locate miners who may have been entombed after a disaster. The tests so far made in the vicinity of Pittsburg show that a man pounding on the coal rib with a pick, piece of timber, or a sledge can be detected and located from a point 600 to 1,200 feet distant. This distance depends greatly on the character of the coal upon which the man is pounding, and intervening rooms and entries seem to have surprisingly little effect upon the distance or the determination of direction.

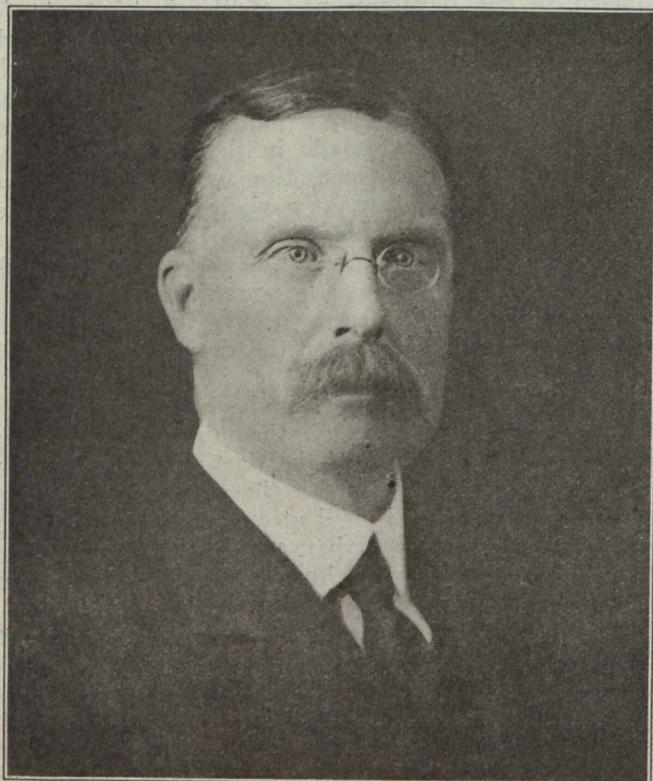
Pounding with a sledge can be heard from two to three hundred feet through the mine cover, depending upon the quietness of the day outside, since any wind greatly interferes with the successful operation of the instruments. It will at once be seen that when mines are not too deep they can be "explored" from the surface, and it will thus be possible to find and locate a miner who is pounding. At the Experimental Mine in Bruceston, Pa., a man has frequently been located through 140 feet of cover with 50 feet of the exact point where he was pounding. A study is also being made of the distances that pounding on rails and pipes can be heard. Since rails are generally buried in the earth or dust on the entries of a mine and since that dust damps the transmission of the sound, the sounds are not transmitted very well. The same is true of pipe lines. However, if pipe lines are not

buried, but are laid on blocks and ties, the pounding can be heard great distances. So far no lines have been found long enough to show the limits of the geophones. It is known, however, that the naked ear can get sounds farther than 2,000 feet.

In metal mines expensive surveys have sometimes to be made in order that approaching tunnel headings may be brought accurately together. Since direction can be determined so well with the geophones, it is thought that they can be used to guide such work. It would simply be necessary to go into each heading and locate the direction from which pounding in the other heading was coming.

It is also thought that they will be of value to prevent accidents, from explosions when breaking through. In this connection an interesting incident happened recently. Observations were being made at a tunnel heading. The pit boss happened along and asked to be allowed to listen. He put the ear pieces in his ears and remarked: "Mack is tamping in a charge, we had better move away." He spoke as naturally as he would have had he been watching Mack, and it is quite evident that he did not realize the sound was coming through 300 feet of coal, else he would not have given the warning.

Observations were made recently of a mine fire burning from 20 to 40 feet below the surface. A low rumbling noise could be heard as if air were being drawn in along crevices, and occasionally sounds could be heard from the snapping and falling of pieces of coal or rock. As well as can be determined, the fire area was accurately located, but owing to the fact that the fire can not be approached from the inside the data can not be checked absolutely. It is interesting to note that similar sounds could be heard from only one point on the inside of the mine, and that that point was the one nearest the area as located on the surface.



J. B. TYRRELL,

Recently elected member of council of the Institute of Mining and Metallurgy.

Ore Receipts at Trail.

Ore receipts at the Trail Smeltery for the week ending March 14th totalled 7,546 tons, which is 2,000 tons greater than were the receipts for the week previous. The shipping mines over the period referred to numbered eleven and there are indications that activity is increasing in the mining sections which may be termed tributary to the Consolidated Mining & Smelting Co.'s great plant. Ore shipments to Trail since the beginning of the year by Districts follow:

Boundary:			
B.C. Mine, Eholt	120		
Bell, Beavercell	33	69	
Emma, Eholt	891	6,702	
Providence, Greenwood	40		
Totals	934	7,021	
East Kootenay:			
North Star, Kimberley	94	1,068	
Paradise, Athalmer	88	814	
Star Mine, Athalmer	34	34	
St. Eugene, Moyie	152		
Sullivan (lead), Kimbley	784	7,101	
Sullivan (zinc), Kimbley	2,976	31,709	
Total	3,976	40,878	
Nelson and Salmo:			
California, Nelson	48	48	
Emerald, Salmo	177		
Eureka, Taghum	134		
Jersey, Salmo	42		
Totals	48	401	
Rossland:			
Center Star, Rossland	2,305	21,961	
Josie (LeRoi 2), Rossland	263	3,920	
Totals	2,568	25,881	
Slocan and Ainsworth:			
Arlington, Slocan	509		
Eastmount, Enterprise	35		
Echo, Silverton	243		
Florence, Princess Ck.	606		
Cork-Province, Zwicky	30		
Galena Farm, Silverton	63		
Idaho-Alamo, Alamo	28		
Lucky Jim, Kaslo	109		
Meteor, Slocan City	35		
Molly Gibson, Kitto Ldg.	124		
Reco, Sandon	5		
Nickelby, Ainsworth	5		
Number One, Sandon	34		
Petty, Three Forks	22		
Ram.-Cariboo, Rambler	161		
Republic, Slocan City	23		
Retallack, Retallack	28		
Ruth, Sandon	44		
Silver Bell, Zwicky	39		
Silversmith, Sandon	84		
Spo.-Trinket, Ainsworth	92		
Standard, Silverton	27		
Totals	2,308		
American Mines:			
Bonanza, Evans, Wn.	42		
Eagle, Newport, Wn.	16		
Montana, Mey, F'lls, Wn.	25		
Reardon, Clines, Wn.	88		

Special Correspondence

NORTHERN ONTARIO.

Will Develop Claims in Gillies Limit.

A company to be known as the Oxford-Cobalt Silver Mines, Limited, is being organized for the purpose of developing two claims in the Gillies Limit, a few miles south of Cobalt. The Nos. of the claims on which work is to be undertaken are: A-100 and C-1000. The organization of the company is in charge of Mr. J. W. Russell, of Woodstock, Ont., who formerly was connected with the Kerry Company in the development of the Cart Lake Lease. While up to the present time no mines have been developed in the Gillies Limit, favorable formation has been discovered in two sections of the area, and has attracted attention since Cobalt's earliest days. One is the conglomerate area in the most northerly section of the territory, where some rich ore was found in veins in the conglomerate at surface. Values did not prove consistent. The other favorable area is a little farther south, where Keewatin occurs along the diabase sill, on the upper side. It is in this latter area that the property of the Oxford-Cobalt is situated. A number of promising veins are said to occur on the claims, in which cobalt and low silver values have been found.

A Mill for Adanac?

In view of the satisfactory results obtaining at the property of the Adanac Mining Company, Cobalt, the management have under consideration the construction of a milling plant with a capacity of about seventy-five tons per day. It had been formerly intimated that the Adanac might secure the mill of the Temiskaming Mining Company, the adjoining property. The construction of a new mill would eliminate the transporting of the ore to the adjoining property, and make available a larger amount of ore of a lower grade on the Adanac than would be possible providing it had to be transported to the Temiskaming Mill. According to official advice underground operations at the Adanac are said to be favorable. The winze is now down more than twenty feet, at which point good grade ore continues. A considerable amount of high-grade ore has been bagged and a large tonnage of low-grade has been conveyed to the surface dumps. It is stated that the ore after hand sorting, carries an average silver content of about thirty-three ounces to the ton. A number of veins are being worked on, and generally speaking, the results at the property are quite satisfactory.

A Busy Year for Prospectors.

Judging by the large number of mining claims on which assessment work must be performed this season, a busy time is ahead of the prospectors and mining men of the north country during the coming spring and summer. A number of new districts have been extensively staked during the past two years. Owing to the scarcity of men to perform assessment work during the war, many claim-owners have received extensions of time on the performance of their legal duties, with the result that in a great many cases more than the current year's work will require to be done. It is conservatively estimated that between two and three thousand claims are being held

in the Temiskaming district upon which it will be necessary to perform the required assessment work this summer, or forfeiture to the Crown will follow. On the average of these claims sixty days' work is required. Providing just 2,000 claims are so situated 120,000 days' work will be required to be performed during the next six months. To accomplish such an amount of work would require about eight hundred men working twenty-six days per month during the six open months of the season. Thus it is expected the coming summer will prove a busy one in the prospecting field and its allied pursuits.

Gold Discovery in Hurricanaw Area.

Reports from the Hurricanaw River district are to the effect that a promising discovery of gold has been made on the Cisco property. This property is situated about one and a half miles from the Martin Gold Mines, the leading operations of the district, and is under option to Montreal interest, who anticipate early exploration.

Burton-Munro.

Work is being conducted on a small scale on the property of the Burton-Munro Gold Mines Company. A test pit is being sunk on the vein, and is now down about twenty feet. The property is situated in the township of Munro, a short distance from the famous Croesus Mine.

Alexo Shipments.

Shipments from the Alexo Mine at Porquois Junction for the third week in March amounted to four cars containing approximately 393,000 pounds of nickel ore. During the preceding week three cars containing 408,000 pounds were shipped from the property. The total amount of ore shipped during the first three weeks of March amounted to 1,111,000 pounds. The ore is taken to Sudbury for treatment.

Elliott-Kirkland.

Work is being held in abeyance at the Elliott-Kirkland property for a short time, while plans for a further programme of exploration and development are being mapped out. This property adjoins the Kirkland Lake Gold and the shaft has been sunk to a depth of 500-feet. Considerable diamond drilling has also been carried out on the property.

Will Develop Properties in Gowganda Area.

According to reports from Gowganda, preparations are being made to do considerable development work on a number of properties which have been in idleness for some time. Among those mentioned as likely to resume operations right away is the Reeves-Dobie. A small steam plant is being taken in to the Collins group of claims situated about six miles east from the Miller Lake-O'Brien Mine. The Hudson Mining Company of Cobalt is reported to be making arrangements for the re-opening of their property here in the near future. The annual meeting of the Silverado Mining Company was held at Cobalt this week. A small gang of men are working at the property, and will be added to with the advent of warmer weather. The next few months promise extensive enlargement of the active mining operations in the Gowganda camp.

Three Mills in Operation at Kirkland Lake.

Three mills are now in operation in the Kirkland Lake camp, and generally speaking the Kirkland Lake field is taking on a very business-like appearance. The milling plants now operating include the Lake Shore, Teck-Hughes and Kirkland Lake Gold Mines. Within the next two months it is expected the Tough-Oakes will have its mill in operation, and by mid-summer all four mines should be producing at full capacity. The installation of the 150-ton milling plant on the Wright-Hargraves should also be in an advanced stage by the end of August, while it is only a matter of time until installation of a mill will become necessary on the Kirkland-Porphry, which will make a chain of more than two miles of producing mines.

The Dome Re-opening.

Mining interests both large and small are looking to the re-opening of the Dome Mines at Porcupine, with expectations perhaps never before exceeded in the history of the mine. In view of the fact that the Dome is recognized as a large low grade mine, it is obvious that in treating a large volume of ore daily, lies the only means of realizing the full benefits of operation. With the large amount of ore broken in the shrinkage stopes of the mine ready for hoisting to the mill it seems highly probable the plant will soon be operating at full capacity. According to the last report of the company approximately 400,000 tons of ore of an average value of \$5.10 per ton was already broken ready for hoisting to the mill for treatment. Since this time, further development has taken place and a large crusher has been installed at the 800-foot level, which should add greatly to the efficiency in handling the ore. Considerable diversity of opinion exists as to the policy of operation to be followed on recommencement of milling operations. In some quarters it is thought the mill will not be brought up to full capacity before late summer, while others are of the opinion that capacity production will be reached within a few weeks of re-opening, and some contend that previous production records may possibly be exceeding with the improvements inaugurated at the property during the period of suspended milling operations. Numbers of old employees who left the Dome when work was curtailed are being offered their old positions, and invariably they are requested to report for work by the 15th of the current month. The avowed policy of the president of the Dome to keep the shareholders advised as to important developments bodes well for the future. The mine stands out as one of the bright spots in the gold mining industry of this country, and present indications are that upwards of five hundred men will be working at the property within the next few months.

Dome Lake Mill Again in Operation.

The mill at the Dome Lake Mines, Porcupine, resumed operations again this week, according to advice just to hand. It is expected the average tonnage treated in the mill will show an increase from this date forward, and will possibly exceed the average accomplished before the closing of the mill some time ago. Underground developments at the property recently are said to have been of a very satisfactory nature.

Interest in Larder Lake Area.

Several of the mining companies of the Cobalt district are interesting themselves in the Larder Lake Gold Area. This is apparent in the fact that a large number of claims have been staked by representatives of these companies recently. The possibilities of this district have always been conceded to be worthy of further investigation, it being realized that initial exploration and developments in the area were of a very superficial character, insufficient work being accomplished to prove the merits of the various properties. The Goldfields Consolidated Mining Company's operations are the most important in the district to date, and it is reported encouraging results are being met with in development there.

Will Drill at Haileybury.

Much interest is being manifested in the operations of a diamond drilling machine which has been set up just west of the Temiskaming and Northern Ontario Railway tracks at Haileybury, where it is proposed to drill for oil.

Arnold-Hughes Claims Sold.

Another big deal was closed this week for property in the Boston Creek gold area, when a group of three claims owned by Dr. Arnold and J. A. Hughes, both of Haileybury, changed hands. The claims are situated in Catherine township, and adjoin the Cotter property on the latter, of which the eastward extension of the rich Miller-Independence vein has been discovered. The purchaser, Mr. Savage, of Buffalo, will make substantial payments at intervals of ninety days. A payment was made on the signing of the option agreement, which is to go towards immediate exploration and development work. A company is to be formed for the purpose of completing the payments and carrying on development work. This deal forges another link in the chain of properties which are gradually being acquired by strong interests in the vicinity of the Miller-Independence. The northeast corner of the township of Pacaud, together with the northwest corner of the township of Catherine and McElroy, and the southeast corner of Boston township comprise the chief area of present activity in the new mining field.

Indications point to the possibility of activity spreading far into Catherine as well as northward into the townships of Boston and McElroy. These four townships are the area commonly known as the Boston Creek field.

Washington Smelter Closed Down.

The closing down of the Northport, Wn., smelter is a matter of considerable interest to the mine operators of the Boundary District of British Columbia. There is a belief among some Canadian mining men that this action is the result of an understanding with the large smelting interests of America. One newspaper of the Provincial Interior observes: "The West Kootenay Light & Power Company recently completed an expensive line from Trail to the smelter at Northport in order to sell power to the plant, but it is likely that the big Canadian power concern took good care to protect itself against any such contingency as that at present existing."

BRITISH COLUMBIA.**Will Resume Operations at Anyox Smelter.**

Preparations are being made by the management of the Granby Mining & Smelting Co.'s plant at Anyox, B.C., for the resumption of operations. The smelter, it will be recalled, closed down several weeks ago when fire destroyed a small part of the equipment. The men also had refused to accept the company's proposal for a reduction of wages, the same to be placed on a sliding scale which would advance or decline with the fluctuations of the price of copper. The plant now is ready for work again but, in the meantime, the majority of the workmen have left the town to look for employment elsewhere. The management, therefore, is looking for men in Vancouver, Victoria, and other provincial cities, it being advertised that 1,200 are required and the preference will be given to returned soldiers. It is not thought that there will be much difficulty in securing the number of workmen needed, and the expectation is that work will be resumed very shortly.

Testing Laboratories for British Columbia.

The announcement that the Dominion Government is making provision in this year's estimates for the expenditure of \$100,000 on one or more ore testing laboratories in this Province is welcomed by mining men. This is something for which British Columbia operators have been agitating for years. At present it is necessary to send ore which it is desired to have tested to Ottawa, thus involving expense and considerable loss of time. With facilities at hand those engaged in putting properties, especially of the complex ore bearing character, on a shipping and paying basis will find readily available the means of obtaining necessary information.

Renewed Activity in Yukon Gold Mining.

Klondyke operators are preparing for extensive dredging and hydraulic work this year, according to reports from Dawson. It will commence about May 1. It is thought likely that the output of \$2,000,000 in gold will be considerably exceeded this season, as some of the larger companies, which have been tied up by litigation and the work of re-organization, are planning to resume operations. It is estimated that fifty creeks of proved value remain in the Dawson district. The Canadian Klondyke Company's dredge No. 4 worked every day last winter and is going full blast still, which is considered a remarkable feat under semi-Arctic conditions. The Mayo Silver Camp is said to be proving up very satisfactorily and those from that section optimistically declare that it is destined to rival Cobalt.

A Placer Gold Discovery Above Marshall City.

E. W. Parks, owner of a quick-silver mine in the Yukon, arrived from the north a few days ago, and reported that a placer strike had been made above Marshall City, and a short distance beyond Holy Cross on the Yukon River. Mr. Parks states that he met a number of prospectors who have stampeded to the new diggings and that they report 50 cent pans as common there. The creek on which these placer claims are situated, and which ground is said already to be completely staked, runs into a slough of the Yukon River.

Will Drill Aspen Grove Properties.

Four standard diamond drill outfits have arrived at Thelia on the Kettle River Valley Railroad, Kamloops District, and will be taken to the property of the Aspen Grove Amalgamated Mines, Ltd., for exploration purposes. Mr. Joseph Errington and associates are representing the bond holders, and active extensive work is promised for the coming season. The property com-

prises some seventy-five claims on which considerable development work has been done. It is said that should the drilling results prove satisfactory the capital necessary for the further opening up of the property, to the end that it be placed on a producing basis, will be immediately available.

Nechaco River Mines, Inc.

Promising reports have been received from mine properties situated on Stone Creek about twenty miles south of Prince George, B.C., where the Nechaco River Mines, Inc., a New York Syndicate, has been carrying on development work for the last two years, its property being known as the Yellowjacket Group. From the quartz formation near the main lead an assay has been obtained showing values of \$27 a ton in gold, silver and lead. The statement is made of this property that there are thousands of tons of the same formation on either side of the main and richer body of ore which could be loaded on cars by a steam shovel. The Yellowjacket Group lies about four miles east of the Pacific Great Eastern Railway grade and adjoins Stone Creek Canyon. William West is in charge of development work at present, but expects an engineer from New York to look over the ground and decide upon a plan of operations at an early date.

Examining Property of Kitselas Mountain Mining Co.

The Kitselas Mountain Mining Co., which has a gold property situated near the town of Usk on the Grand Trunk Pacific Railway, is negotiating for its sale to a syndicate of North Dakota capitalists. Representatives of the latter recently made an inspection of the prospect, took samples, and the character of their report will determine the results of the negotiations.

An Opportunity for Placer Miners.

W. A. Phair, a pioneer placer miner of British Columbia, at present resident at Lillooet, offers a striking solution of the question of employment for returned soldiers during the reconstruction period. "During this period of depression," he says, "it seems to me that some of those in the city who cannot find employment for the moment could, at least, make a living by placer mining along the Fraser River. During the depression, about 1896, I can remember seeing the banks of the Fraser lined with Chinese and Indians with rockers and pans. They used to make at least a dollar a day with a chance of striking a pocket. They used to work several months each year. During the low water periods of March and April there are great chances to get down where the river has not been worked and when a pocket is struck it generally means several thousands of dollars. A few years ago Indians took out a lot of gold just above the town of Lillooet. I know several averaged over \$30 a day for some weeks. If several prospectors got together they could wing dam parts of the river with the chance of big money. Then there are several new gold-saving devices which might be used to advantage."

Canada Copper.

The Napoleon Mine in the State of Washington has been dismantled by the Canada Copper Corporation. A 5,000-foot tramway of the Bleichert aerial type, has been moved to the Mountain Chief Mine at Ranea, where it will be installed for early use.

Echo Silver-Lead Mine is Now a Steady Producer.

The Echo Silver-Lead Mining Company, which operates near Silverton, B.C., has entered the list of continuous producers. Four carloads of silver-lead concentrate are produced monthly. The silver-lead concentrate contains 65 per cent lead and 125 ounces of

silver to the ton, and the zinc concentrate 40 to 45 per cent zinc and 60 ounces of silver to the ton. The zinc concentrate is being banked at the mill for lack of satisfactory market for zinc products. The Echo mine is equipped with a two-bucket tramway that is connected with the Standard tramway by which ore deliveries are made to the Standard Mill, where the concentrating is done.

Will Re-open Highland Valley Mine.

F. Keffer, manager of the Highland Valley Mining and Development Company, states that this property, which is situated in the Ashcroft District of the Province, will be re-opened and probably placed on a producing basis this summer. The mine is well equipped, possessing a concentrating mill. The necessary capital having been interested, Mr. Keffer looks forward to a season of activity and who states that "we expect to begin work as soon as the snow goes, and push it for all it is worth."

The Smelter Rates Investigation.

The committee of investigation into charges made by the Slocan lead-silver-zinc shippers against the management of the Trail Smeltery in respect of the latter's custom smelting rates is reported to be making good progress in its work. A number of meetings have been held and evidence taken from those directly affected on both sides. Information also has been secured from officials of the smeltery. The preparation of the report is the chief task now before the Committee, and in this it is stated that the assistance of Mr. E. R. Whitaker, who conducted the Colorado State Investigation, will be available. It is not expected that the report will be ready before the lapse of two or perhaps three months.

Killed by Snowslide.

Two men of the Surprise mine force, who were employed on trail work, lost their lives recently when a snowslide caught and swept them into oblivion. They were William McKnight, a Scotchman, and Joe Sesil Sonr, an Austrian. Both were about 35 years of age and married. The scene of the fatality was near the Noble Five Mine, near Sandon, B.C.

Nugget Gold Mines, Ltd., Will Operate Sheep Creek Mines.

The Nugget-Motherlode-Searchlight Group of claims on Sheep Creek have been brought under control of a British Columbia syndicate which has been incorporated as the Nugget Gold Mines, Ltd. The property, it is stated, is to be actively developed and placed on a producing basis with as little loss of time as possible. Mr. R. H. Stewart, M.E., one of the best known of Provincial Mining Engineers, will supervise the work. In acquiring the Motherlode the new operators not only have a promising property, but have secured a ten-stamp mill of South African type, which was built by the Fraser and Chalmers Company of London in 1912. It includes a cyanide plant and is said to be one of the most complete mills of its size in the province. Those interested in the project look forward to developments with confidence. They state that it has long been evident that the only economical way to operate on Sheep Creek was to amalgamate several groups of claims and treat the ore at a central mill. This has been accomplished. The Nugget, Searchlight and Motherlode groups, with the mill on the latter property, found, it is said, an ideal mining and milling aggregate. The Nugget and Searchlight occupy the summit of the mountain, at an elevation of 5,500 to 6,000 feet above the sea level. The Motherlode mill is at the foot of the south slope of the mountain on the main fork of Sheep Creek,

at an elevation of about 4,000 feet, so that there is a vertical depth of 2,000 feet of "backs" above the mill which can be worked by adits, enabling the property to be economically worked.

Portland Canal District.

The Portland Canal District, northwestern British Columbia, is going to be heard from this summer, according to a number of prospectors and operators from that section. No one, however, is more enthusiastic than R. W. Martin, of Seattle, Wn., one of the owners of the Mineral Hill Group of Claims situated above the Bush Mine, of which great things are expected this season. Mr. Martin looks for the completion of a wagon road to his and other adjacent properties in the course of the next few months and states that, with this done, considerable shipments of high grade ore will be made.

Expects Decrease in Coal Production.

"This year coal mines of the northwest will not operate 40 per cent of the time, which means a heavy expense for operators," stated James S. Ramage, head of the Continental Fuel Company, and the Hawkeye Fuel Company, recently in Spokane, Wn. "For some time," he continued, "there has been serious over-production of coal in Canadian and other districts from which Spokane City receives its supply. About 80 per cent of the steam coal used here comes from the Canadian mines, and a serious situation has developed in that country as is evident by a recent report issued by the Workmen's Compensation Commission, making the definite statement that cost of labor in producing coal is \$2.60 a ton, which is above previous calculations and more than in other fields with which Canada competes."

The Coal Situation in Alberta.

As to the situation in western Canada in regard to coal production and trade it is interesting to note the comments of Premier Charles Stewart, of the Province of Alberta, made recently to the Legislative Assembly of that Province. He pointed to the stored up surplus of 2,000,000 tons of coal and admitted that the position was a serious one, especially with the embargo taken off American coal and with production costs at a high level. The Premier declared that the only solution of the problem was the reduction in the price of coal to the extent of at least \$2 a ton in order that American competition might be met. This reduction, he said, had to be achieved by cutting the price of production, though some slight decrease might be attained in freight rates. He believed that the difficulty might be remedied at least in a degree by lengthening the time of production, assuring the miners of steady work for a period of eight months in the year, instead of but six months as at present. While Premier Stewart declared that he was against cutting wages, his remarks led to the conclusion that, with the lengthening of the period, the miners' daily wage would have to come down. He virtually admitted, however, that the Alberta Government was helpless in face of present conditions.

Work has been resumed at the Diamond Vale Coal Mine, Merritt, B.C.

Coal Prices at Prince Rupert.

During the past winter the City of Prince Rupert has been complaining bitterly of the cost of coal to its citizens. The question has been discussed by the councillors of the community regularly without achieving much in the way of results. At any rate, it has been found impossible as yet to obtain such reductions in the price of coal at Vancouver Island mines, together with handling charges, to bring the ultimate cost to the consumer below the figure at which the fuel stood, per ton, at

the outset. Several weeks ago, however, Prince Rupert had her chance. The Fuel Control Board of the City Council recommended the purchase of 1,800 tons of coal from the Coastwise Barge & Steamship Company, at Vancouver, B.C., the same to be delivered alongside the dock at Rupert at a cost of \$7.00 a ton. There can be no doubt that, making the most liberal allowance for handling charges from the barge at the dock to the cellars of the consumers, the latter would have been able to get the fuel considerably cheaper than the \$12 a ton, and more, which they have been paying. But the City Council, when confronted with the straight proposition, declined the responsibility. The tying up of \$15,000 of the city's money, even for a brief period, did not commend itself to the civic solons and the Committee's recommendation was vetoed. It would seem that, after all, the directors of Prince Rupert's destinies have come to the conclusion that there is a proper and useful niche in the life of the municipality for the coal dealer who, on the Pacific Coast of late, has been receiving some pretty hard knocks.

Litigation Over Coal Lands by Nanoose Collieries.

There has been litigation during the past few weeks over title to the coal fields of Vancouver Island controlled by the Nanoose Collieries, Ltd., suit being brought against the Company by A. F. Eastman, manager of the Marble Bay Mines, Texada Island, for an accounting and for an order restraining further work on the property. His claim was that in 1906 he had entered into an agreement with the then owner of a portion of the property now under development to provide money for opening up the coal measures supposed to be there in return for a half interest. Work started on this basis, a small seam was struck not far from the surface, and then a disagreement arose with the result that operations were suspended. Mr. Jack subsequently died. His executors, according to Mr. Eastman, declared that the estate would sell its interest for \$60,000, whereupon Mr. Eastman et al arranged to dispose of the entire holdings to Alvo von Alvensleben, the German financier and propagandist of which considerable has been heard both in Canada and the United States of late years, for \$125,000. This, however, was not accepted by the Executors and Alvensleben bought the Jingle Pot Mine, near Nanaimo, B.C. Finally the property was sold out to the Nanoose Collieries, Ltd. The reply to Mr. Eastman on behalf of the company was that his agreement with Mr. Jack was to the effect that he should have one half of the returns of coal produced during the active operation of the partnership. The Court upheld the Company and the action was dismissed.

British Columbia to Recompense Sufferers from Riots.

An echo of the Vancouver Island coal miners' strike of 1914 was heard in the British Columbia Legislature during the closing days of the last session when Premier Oliver moved that members of the House should go into Committee of the Whole to consider the advisability of settling the claims of those who suffered through damage to or loss of property because of the riots which occurred on that occasion and, if favorable thereto, that leave be granted to introduce legislation to that end. The resolution was carried; the discussion developed that the opinion was unanimous that the Province was obligated to make proper recompense to the sufferers; and the necessary Bill was introduced and passed without loss of time. Mr. Justice Gregory, of the Supreme Court, it should be explained had been appointed a Commissioner by the late Government in 1916 to hear

evidence and decide on the amount due to each of the petitioners and his report, which was presented and on which payment will be based, indicates that the total sum to be thus disbursed is \$56,878.

Premier Oliver, in moving the resolution, explained that personally he did not think the Province was legally responsible for the payment but he thought there must have been some object in having an inquiry made and that the then Government, in ordering one, contemplated payment of claims approved by the Commissioner. He felt that it was a matter for the Legislature to decide and that was why, as Leader of the Government, he had brought the matter to the House in order that it might give expression to its views.

There was considerable debate. One member suggested that, inasmuch as the Dominion Government had recognized its responsibility by the calling out of the Militia in order to quell the disturbance, it seemed that that Government might be held responsible for the damage to property. For the Province to pay would be the establishment of a bad precedent. W. J. Bowser, the Premier at the time, declared that, whatever might be the legal responsibility of the Province, he certainly thought there was a moral one, while J. H. Hawthornthwaite, member from one of the coal mining sections, stated that he had "butted" into the troubles in the effort to effect settlement, but the miners had been badly advised and the riots resulted. The Province had control over civil rights and property and must protect them. He was convinced that the Government should shoulder the responsibility for the payments.

Hon. Wm. Sloan, Minister of Mines, believed the responsibility for the trouble lay with some 200 agitators who came over from the State of Washington and inflamed the miners. Application had been made to the then Government for protection, but it was not forthcoming until after the damage had been done.

As a result of the passage of the measure the claimants will be paid forthwith.

Nicola Valley Coal.

For a number of weeks the Merritt (B.C.) Board of Trade has been investigating the coal situation as it affects the Nicola Valley Coal field with a view to the presentation of arguments to officials of the Canadian Northern Ry. Company to the end that the latter concern may be persuaded to use Nicola Coal in the operation of the inter-mountain divisions of their railroad. At the present time the fuel used comes from Brule Lake, Alberta, and Vancouver Island. President Hanna, of the C.N.P.R., is visiting the Coast and advantage is being taken of the opportunity to have a deputation of the residents and coal operators of the Nicola-Princeton District wait upon him with respect to the matter.

Amendments to B.C. Coal Mining Regulations.

The amendments to the Coal Mines Regulation Act, introduced to the Provincial Legislature at the session just closed by Hon. Wm. Sloan, Minister of Mines, passed with no very material change. One alteration, however, was permitted, namely, that the Minimum Wage Section, which authorized the Minister of Mines to define any particular coal mining section and to declare it a minimum wage district, shall not come into effect until July 1920. Thus the coal mine operators are given a year before this law can be applied. As it is thought that this legislation is aimed at the Chinamen employed as miners at the face in some of the mines of the Province, it is possible that the condition which gives, allegedly, rise to this part of the Act will be non-existent before the lapse of twelve months. It fol-

lows that there is a possibility that the Legislature may decide ultimately that it is unnecessary and may be expunged. However these are but surmises and the probability is that, with the consensus of opinion being in favor of a minimum wage under any condition, that the measure will remain on the Statutes and be applied when found advisable.

It is significant, in this connection, that notices have been posted by the Canadian Western Fuel Company at its mines in the Nanaimo District informing employees that from the 1st of April the price of coal to them will be \$4 a ton. They have been getting it for \$2.50 a ton. This advance was necessary, the announcement stated, owing to the decision of the company to make Nanaimo a white man's camp by replacing Orientals now in the company's employ by white men who, owing to advanced age or injuries, were unable to continue their regular employment underground.

The Tax on Coal.

At one time during the recent session of the British Columbia Legislature the coal mine operators of the Province were disturbed by the report that it was the Government's intention to increase the per ton tax on coal produced from 10 cents to 25 cents. Representations of a very strong character were made against any such impost, it being contended that it would make the costs so high as to render it impossible for British Columbia coal to hold its foreign markets, chiefly those of the States of Washington and Oregon. The Legislature has prorogued and the minds of the operators are relieved as, while an amendment has been made to the Taxation Act affecting them, nothing so radical as was suggested has been placed on the Statute Books. The tax for years has been 10 cents per long ton on all coal shipped, exported, or delivered from the mines of this Province, excepting that which goes to the coke ovens. To take care of the latter there is a supplementary clause taxing coke at the rate of 10 cents a long ton. The amendment referred to makes the coal mines or collieries liable to pay either the 10 cent Royalty described or to pay on their income, the Crown having authority to collect on whichever basis yields it the greater revenue.

MARKET PRICES OF SHARES.

The following are prices for Saturday, April 12th, on the Standard Mining Exchange, Toronto.

Standard Stock Exchange.

Gold—	Ask.	Bid.
Apex	3½	3¼
Baldwin	34	33
Boston Creek	30	20
Davidson	66	65
Dome Extension	29½	28½
Dome Lake	26	25
Dome Mines	15.00	14.25
Eldorado	2	..
Gold Reef	3⅞	3¾
Hollinger Con.	6.35	6.25
Inspiration	9	8½
Keora	18	16
Kirkland Lake	49	48
Lake Shore	1.02	1.00
McIntyre	1.68	1.67
Moneta	10½	9
Newray Mines . . . . .	..	16
Porcupine V. & N. T.	23½	21½
Porcupine Crown	29	28½
Porcupine Gold	1	..

Porcupine Imperial	17⅞	1¾
Porcupine Tisdale	23¼	2¼
Preston	4	3½
Schumacher Gold M.	37	34½
Teck-Hughes	21¾	..
Thompson-Krist	8	7½
West Dome Con.	14¾	14½
Wasapika	62	60
Silver—		
Adanac	18½	18⅞
Baily	4½	4
Beaver	44	43½
Chambers-Ferland	10½	9½
Coniagas	2.55	2.50
Crown Reserve.	45	41½
Foster	4½	4
Gifford	3	2¾
Great Northern	4	3¼
Hargraves	3	2½
Hudson Bay	55.00	45.00
Lorrain	2¼	1
La Rose . . . . .	..	29
McKinley-Darragh	49¾	48
Mining Corporation	2.15	2.00
Nipissing	9.50	9.05
Ophir	10½	10¼
Peterson Lake	8⅞	7½
Right-of-Way	3½	3
Silver Leaf	2½	2⅜
Seneca-Superior	2	..
Timiskaming	33½	33
Trethewey	39	38½
Wettlaufer . . . . .	..	5
York, Ont.	2	..
Miscellaneous—		
Vacuum Gas	8	7½
Rockwood	8	6

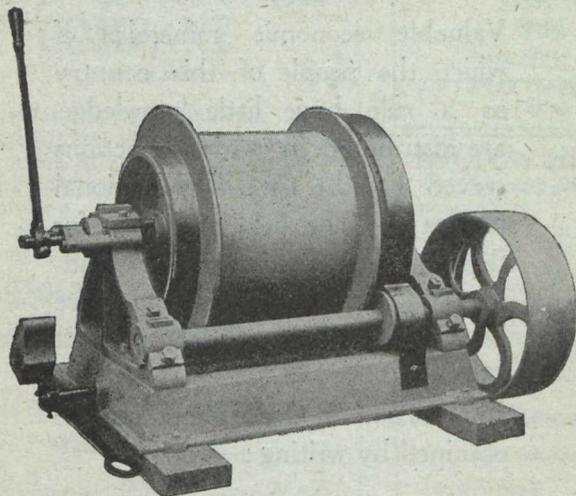
Standard Sales—April 12.

Gold—	Open.	High.	Low.	Clos.	Sales.
Baldwin	33½	..	33	..	1,000
Davidson	66	..	..	..	1,000
Dome Ex.	28	29½	28	29¼	6,000
Dome Lake	27	..	25½	..	7,450
Dome M.	14.50	..	..	..	80
Gold Reef.	3¾	4	3¾	3⅞	3,500
Holly Con.	6.30	..	..	..	1,030
Kirk. Lake	48½	49	48½	49	2,000
Lake Shore	103	..	101	..	1,700
McIntyre.	167	..	..	..	1,649
Moneta	10	..	..	..	1,000
Newray. M.	16	..	..	..	1,000
P. Crown	29½	..	29	..	1,000
P. Imperial	1¾	..	..	..	2,000
P. Tisdale	2½	..	..	..	500
Preston	4	..	..	..	1,000
Schumacher	37	..	..	..	1,000
Teck-Hughes.	22	23	22	..	4,200
T.-Krist	7¾	..	..	..	2,000
V. N. T.	24	..	23	..	6,000
Wasapika.	60	61½	60*	61½	2,500
W. D. Con.	14½	..	..	..	2,000
Silver—					
Adanac	18¾	..	18½	..	2,500
Beaver	43¾	..	..	..	500
Gifford	2¾	..	..	..	7,000
La Rose	28	150
Min. Corp.	2.05	150
National.	11	12	11	12	1,000
Ophir.	10½	11	10½	..	14,000

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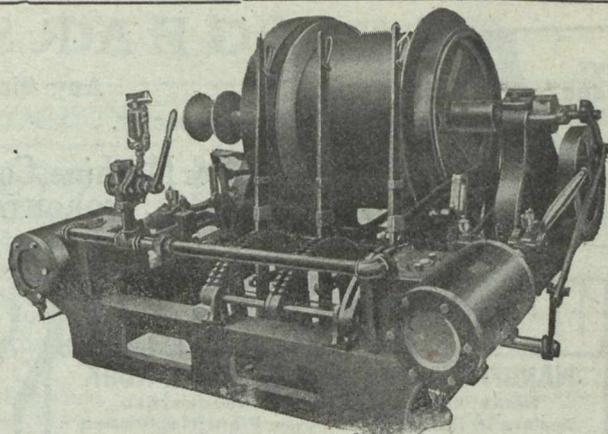
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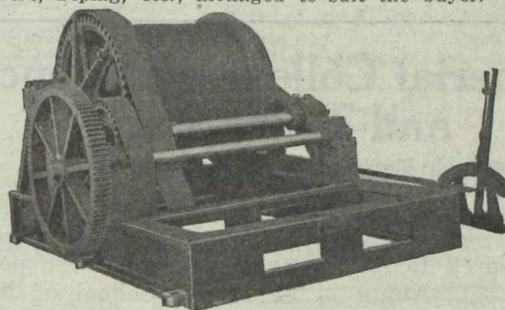
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La Rose Developing Princess Property.

Quite satisfactory results are said to be attending development work on the old Princess property adjoining the McKinley-Darragh Mine, and being operated by the La Rose Mining Company, Limited. Ac-

ording to reports the new vein opened up early in the current year on the McKinley-Darragh, and which was found to be running in the general direction of the Princess, was found to have terminated before the boundary was reached. A considerable amount of rich ore came from the Princess in the early days of the camp, and with the present high price of silver as a stimulant to encourage exploration the La-Rose mining company is carrying out a development program, which is being rewarded with a fair amount of success. Reports in well informed circles here are to the effect that a vein was recently uncovered at the 200-foot level of the old La Rose property, from which a considerable amount of high grade ore is being obtained, while the wall rock on both sides of the vein is said to carry milling ore for several feet. The high grade streak is said to be about six inches in width. Work is still being energetically prosecuted at the Violet property of the La Rose mining company, and satisfactory results are said to be attending with further opening up of the valuable orebodies. A large amount of good grade milling ore has been opened up, and the orebody has been proven to persist to a depth of 475 feet in a winze which was sunk to this depth from the 410 foot level. While official announcement of the date set for the hearing of the dispute between the O'Brien and the La Rose, concerning the boundary line of the two properties, has not been given out, persistent rumors are current in the camp that the case is to come up about the fifteenth of the month. While much importance is attached to the outcome for both companies concerned, the decision is not vital to the future of either company.



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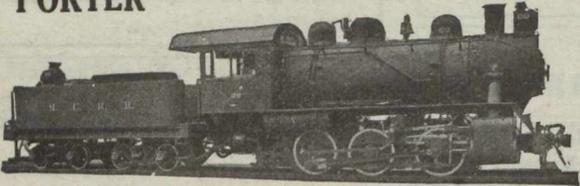
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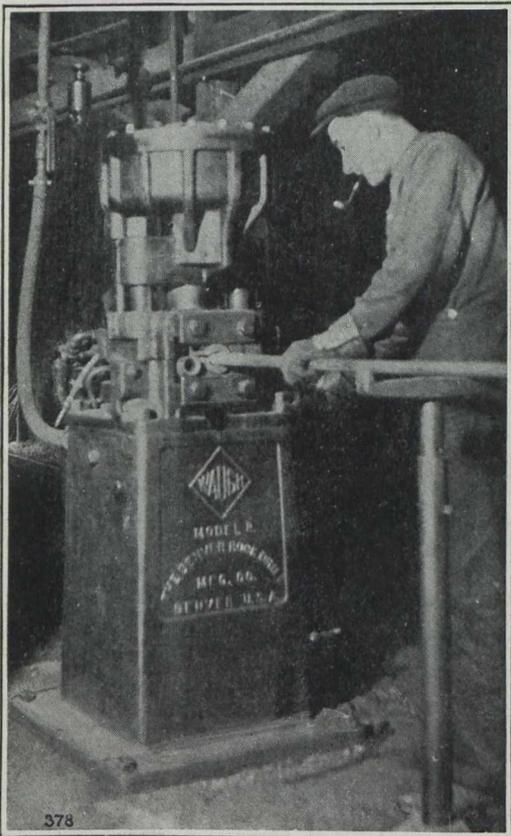


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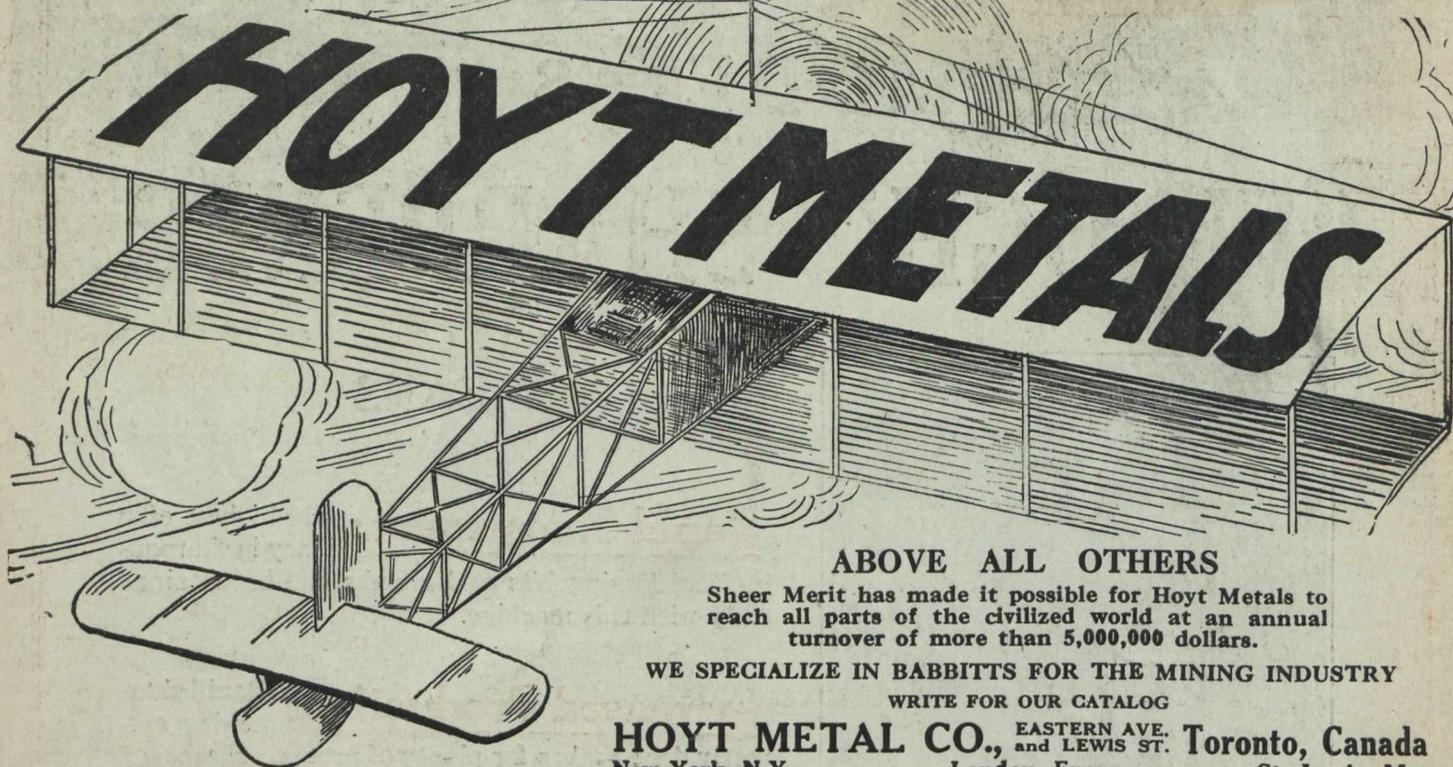
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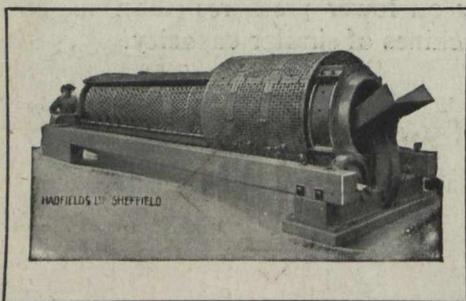
Hecla and East Hecla Works, Sheffield, England

Works area over 200 acres

Sole Agents : Peacock Brothers, 285 Beaver Hall Hill, Montreal.

MAKERS OF ALL KINDS OF

Stone Breaking & Ore Crushing Machinery



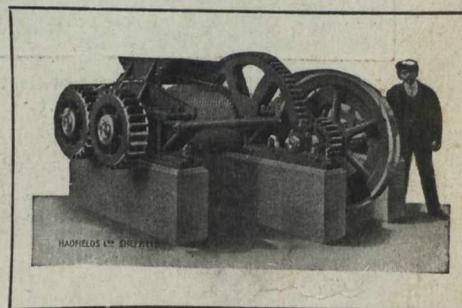
REVOLVING SCREEN

MINING REQUISITES

of all kinds

Forged Steel Balls, all sizes, for Ball Mills and Tube Mills. Grizzly Bars, Shoes and Dies. Steel Wheels and Axles, etc.

HIGH SPEED AND OTHER TOOL STEELS
of the finest quality



ROLL CRUSHER OF SOLID STEEL CONSTRUCTION

Steel Castings & Forgings

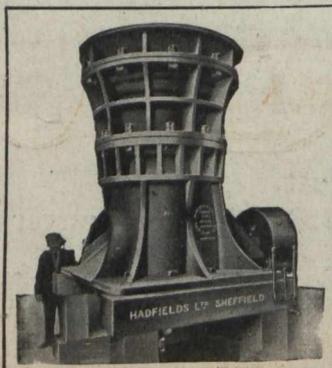
of every description.

Sole Makers of HADFIELD'S PATENT

"ERA"

Manganese Steel

The Supreme Material for the Wearing Parts of Stone Breaking and Ore Crushing Machinery



'HECLON' ROCK & ORE BREAKER