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N INTERNATIONAL MINING CONVENTION AT VANCOUVER.

An international mining convention will be held at Vancouver, B.C., from the 8th to the 10th of January, 1919, inclusive. It will be conducted under the auspices of the Vancouver Chamber of Mines, the officials of which body propose bringing some of the most prominent mining men of the continent to this Province to participate in the proceedings. They take the position that British Columbia's possibilities as a mining centre are just beginning to be realized; that its future in this respect has been to some extent forecast by what has been done in supplying metals necessary in the manufacture of munitions; that the outlook has been further brightened by the discovery and the development to some extent of molybdenite and manganese, to say nothing of platinum; and that its mineral resources have as yet not been exploited in any marked degree. As its history as a mineral producing country has yet to be written, they think both its citizens and the outside world should be brought to more fully realize its riches in this respect and that one of the best means is through a convention of the representative character contemplated and the arrangement of a programme which will be both entertaining and educative.

ENGINEERS AND THE MINING INDUSTRY

In the October Bulletin of the Canadian Mining Institute reference is made to the relations with the Engineering Institute of Canada, the society formerly known as the Canadian Society of Civil Engineers. The secretary urges on members the desirability of consolidating to protect the engineering professions and promises to the Engineering Insitute the co-operation of the Mining Institute whenever it may be requested.

To protect the interests of its members is one of the proper functions of any society. Another proper function is to co-operate with other societies on matters of common interest. Obviously, therefore, it is to be expected that there should be co-operation between the Mining Institute and the Engineering Institute on matters affecting the status of the engineering profession. We have no doubt that there will be.

It is a mistake, however, to expect that there will not be differences between these two Institutes. The aims of the two are similar in some respects; but quite different in others. Failure to recognize the points of similarity and difference has been responsible for some unpleasantries in the past. Would it not be well for each Institute to undertake to make the members of the other more familiar with the nature of the respective societies?

To us the essential difference between the Institutes is that one represents an industry, and the other represents a profession.

The Canadian Mining Institute is chiefly composed of technical men. This is a natural consequence of the fact that mining and metallurgical operations are to a very large extent directed by, and carried on with the assistance of technical men. It does not follow, however, that the Mining Institute is a mere technical society. We would be very sorry if it should become such. The aim of the Mining Institute is to develop the mineral resources of Canada. Among its members are several who have had no technical education; but have other qualifications which make them equally valuable as members. They would not qualify, and would have no particular desire to belong to, an engineering society; but they are eminently qualified to take a leading part in the mining and metallurgical industries.

The Engineering Institute of Canada, on the other hand, represents no particular industry. It has, nevertheless, good and sufficient reasons for existence. Comparatively few mining engineers belong to the Engineering Institute because the Mining Institute gives them the advantages of a professional society while it also represents their industry. The professional members of the Canadian Mining Institute will always be found ready to co-operate with the members of the Engineering Institute in efforts to improve the status of the engineering profession.

ALBERTA COAL MINES WILL PRODUCE 6,000,000 TONS THIS YEAR.

J. T. Stirling, Chief Inspector of Mines for the Province of Alberta, who also is the Chairman of the Workmen's Compensation Board of that Province, has just returned after making a stay of some weeks in British Columbia. During this period Mr. Stirling visited some of the coal mining districts with a view to acquainting himself with conditions and also gave some attention to the provisions of the Coal Mines Regulation Act under which the British Columbia mines are operated. He states that in Alberta coal mining never has shown such activity before. The output this year he believes will reach the total of 6,000,000 tons as compared with 4,000,000 tons for 1917. From the Drumheller District alone, which has been opened up for a comparatively short time, there will be a product aggregating at least 1,000,000 tons. New mines are being developed in many sections of the Province and are shipping, many of them, on a small scale.

PRODUCTION OF COAL IN BRITISH COLUMBIA.

In view of the discussion as to the production of British Columbia's coal fields this year, and the possibility of the output meeting at least the most pressing demands with domestic and foreign it is interesting to give the results of a rough estimate made by a high authority. Up to the end of the month of August the production was 1,821,681 tons, and an estimate of the output of the month of September, the returns being not yet available, is 167,301 tons, making a total of 1,988,982 tons up to the last day of last month. From this must be taken 221,840 tons which was used in the making of coke. The total coal marketed from this Province for the first three-quarters of the year, therefore, would be 1,767,142. At the conservative valuation of $5.50 a ton, this would be $9,719,281. In this period it is estimated that the Crow's Nest Pass collieries had produced 130,389 and the Canadian Collieries (D) Ltd., 19,196 tons of coke, a total of 149,585, which at a valuation of $9 a ton, equals $1,306,265. So the value of the coal production of British Columbia may be said to aggregate approximately $11,025,546.

COAL MINERS ACCEPT ORDER OF DIRECTOR OF COAL OPERATIONS.

The coal miners strike in the Crow's Nest Pass District is at an end. After being out since the 4th of September, the men went back to work on the 8th of October, having accepted the order of Mr. W. H. Armstrong, Director of Coal Operations. This grants them their demand for a single shift system in the operation of the mines of Fernie and Michel and provides that Mr. Armstrong will request of the Provincial Mines Department that a Royal Commission be appointed to investigate the condition of the mines in question, presumably to establish whether or not the one shift in twenty-four hours is necessary for the protection of the lives of the underground workers.

It is reported that a deal is pending whereby the manganese deposits of the Cowichan Lake District, Vancouver Island, will be put to industrial uses by Vancouver interests. At present the properties are controlled by Mr. C. H. Dickie, of Duncans, V.I.

There is another Yukon and Alaska "stampede" in progress, but in the opposite direction to that of years ago. The generally unprofitable character of gold-mining to-day is felt in the far north, to even a greater extent to elsewhere. There is much talk of government assistance, but apparently little faith that it will be forthcoming.

THE ALLIED METALS CONGRESS.

The Allied Metals Congress at Milwaukee, held October 7th-11th, under the joint auspieces of the American Institute of Mining Engineers, the American Foundrymen's Association and the American Malleable Castings Association, was one of unusual importance. Its purpose was to assist in carrying on the war and those who organized the Congress and all who contributed to make it a success have good reason to believe that their efforts will have good results. Many valuable papers were presented and discussed and a splendid exhibit of labor saving machinery was made. Those attending must have profited by the many practical suggestions offered and been stimulated to greater effort by the earnestness of purpose of their fellows. Men who are responsible for the production and manufacture of metals have seldom gathered in such numbers anywhere in America, certainly never with such a serious common object. Not under any ordinary circumstances will one see eight hundred foundrymen listening with rapt attention to technical descriptions of processes of manufacturing cast iron.

Headquarters for the Congress was at the Milwaukee Auditorium. This splendid building is exceptionally well adapted for both exhibitors and meetings. The 165 exhibitors had space in the Arena and Machinery Hall. In the Arena were displayed manufactured products, tools, shop supplies and accessories. In the Arena foundry and metal working equipment was shown in operation. Large and small lecture halls were utilized for the meetings.

Opportunity was given to visit many of the notable plants in Milwaukee and vicinity. A plant visitation schedule was arranged and private cars took the guests to the plants of the Allis-Chalmers Mfg. Co., Kearney & Trecker Co., Falk Co., Chicago & Milwaukee Ry. Co., Wisconsin Gun Co., Sivyer Steel Casting Co., Pawling & Harnishfeger Co., Northwestern Malleable Iron Co., Vilter Mfg. Co., and the Filer & Stowell Co. The great shops of the Allis-Chalmers Co., the Falk Foundry and the Wisconsin Gun Co., where 75 mm. guns are being made, proved particularly interesting to many of the guests.

At the opening session Hon. E. L. Phillipp, Governor of Wisconsin, welcomed the guests. He dwelt on the need of materials for carrying on the war, and asked those present to proceed with their plans for increasing production regardless of rumors of peace. He believed that the end of the war is drawing near, but he thought it very important that there should be no halt in production until peace is an accomplished fact. He ventured the opinion that when peace does come there will be a tremendous demand for materials for reconstruction. Mr. B. D. Fuller president of the American Foundrymen's Association assured him that the foundrymen would not allow peace talk to interfere with their efforts. He congratulated Milwaukee on its war effort.

Mr. E. D. Brigham, manager of the iron ore, coal and grain traffic of the United States railroad administration asked for the co-operation of the metal trade in meeting the demands made on transportation. He said that everything must be subordinated to the demands of the government and that producers must look with patience on shortage of shipping facilities.

Mr. C. S. Koch, of the Ordnance Department, Washington, gave some account of the activities of the Army Ordnance Department, with especial reference to foundry matters. Major Frank B. Gilbreth gave an illustrated talk on military matters of special interest to metal workers.

It was decided that a message should be sent to President Wilson assuring him that the metal industry would

leave nothing undone to accelerate the production of munitions. The following resolution was passed.

"That every resource of these allied metal trades is again pledged to the government not only in the production of materials for the conduct of the war, but for the accelerated manufacture of these materials to enable the government to greatly intensify its prosecution of the war, and to bring about a speedy and crushing defeat of the enemy that will lead to his abject and unconditional surrender."

While the Congress was in session a message was received from Chairman Hurley of the United States shipping board who urged manufacturers to increase their export trade. He said that the U. S. Government was turning out many ships that would be of little use after the war unless manufacturers took advantage of the favorable opportunity for increased export of goods. Chairman Hurley asked for comittees to investigate the situation.

One of the notable features of the Congress was the session devoted to manufacture of semi-steel. The opinion was expressed on all sides that semi-steel shells will soon be manufactured in very large quantities in the United States, as they have been in France. In view of this fact the manufacturers who have facilities for undertaking the work took a very keen interest in whatever nformation was obtainable at the sessions.

The chairman, Mr. John A. Penton opened the session by a short address in which he pointed out that it was expected that many of those present would be called upon to make semi-steel shells. He asked them to follow carefully what was said concerning the manufacture, and to consider whether they could undertake such work. He believed that many plants would be found suitable for the manufacture of such shells. The chairman then introduced three French Army officers, members of the Commission now in Washington.

The experience of the French manufacturers of semi-steel was outlined by Lieut. Laurent. He stated that some semi-steel shells had been made before the war and the invasion of Northern France had made it imperative that a substitute for steel be found. The French Ordnance Department found this substitute in cast iron of the variety known as semi-steel.

The ordinary cast iron shell had not sufficient strength and gave on explosion a comparatively small number of effective fragments. When steel scrap is added to the iron, however, a low carbon iron is obtained. It was found that about 30 per cent. steel gave a very suitable mixture.

The advantages of semi-steel over steel are many. In the first place there is not sufficient steel available to meet the requirements and the use of semi-steel would effect a great saving as it did in France. Then, instead of a few steel working plants it is possible to utilize almost any well equipped foundry to make shells. As foundries are scattered over the country the labor problem is also simplified. The materials used are not only more abundant, but less expensive. Scrap steel and rejected semi-steel will supply a large part of the steel needing in the mixture.

The physical requirements and chemical characteristics were detailed by Lieut. Laurent. He indicated how test bars were taken in French practice and gave the figures for tensile strength, elastic limit, crushing strength. The iron contains 2.75 to 3.25 per cent. carbon. It seems essential that the amount of combined carbon should not be over 20 per cent. of the total carbon. To keep combined carbon low, silica may be used, but the amount must not be large. A good rule is that total carbon plus silicon shall be less than 4.5 per cent. For instance, if total carbon is 2.75 per cent. then silicon should be less than 1.75 per cent.

The effect of manganese, phosphorus, and sulphur were pointed out. In general the action of manganese is opposed to that of silicon. The amount of manganese that may be used is small. It has been found that difficulties arise in machining the castings if the manganese content is over 1.1 per cent.

In France it is considered good practice to avoid having more than 0.30 per cent. of phosphorus in the iron. From 0.15 to 0.30 per cent. phosphorus is permissible. Capt. Guillemin remarked, however, that in England and in the United States good results seem to have been obtained with iron containing more phosphorus or manganese than is considered good practice in France.

Sulphur seems to have no very harmful effects when present in moderate amounts. It is, however, desirable to eliminate the sulphur because it makes the molten metal less fluid. From 0.12 to 0.15 per cent. sulphur may be present in good castings.

According to Lieut. Laurent about 25,000 semi-steel shells are being manufactured every day in France. They are not as good as the steel shells; but they can be obtained in larger quantities and ordinary foundries can be utilized to great advantage.

C. E. WATSON AND G. O. RANDOLPH LOST AT SEA.

News has just been received of the loss of Chas. E. Watson and George O. Randolph of Cobalt on the "Princess Sophia," shipwrecked on the Alaska coast. Mr. Watson was manager of the Mining Corporation of Canada. Mr. Randolph was assisting him in examining western properties for the Corporation.

IRON ORE IN CRANBROOK DISTRICT, B.C.

Increased interest is noticable in the iron ore properties of British Columbia, Mr. W. S. Bell announces he is negotiating for the sale of the two red hematite bodies in the Cranbrook District, one of them being on Sand Creek, and the other on Bull River.

Mr. Bell claims these two bodies of ore to be the only known deposits of red hematite west of the Great Lakes, and states the work already done has disclosed a tonnage of almost one million.

One orebody is within four miles of the Crow's N st branch of the C.P.R., and the second, within nine miles of the same railroad, and therefore within a very short distance of an ample coal supply, with the consequent advantage for locating a smelter in the vicinity.

SHIPPING BOG IRON ORE FROM MONS, B.C.

Shipments of bog iron ore (brown hematite), from the properties owned and operated by Dr. J. G. Davidson and Mr. J. H. Thompson, situated two miles from Mons, B.C., on the P.G.E. Railway, started October 7th. The smelter at Irondale, Wash., has contracted for five thousand tons of this ore, one hundred and sixty tons leaving the mine daily.

Mr. Thompson has been responsible for most of the development on the properties, which were originally staked by Mr. W. J. McClure in April, 1910, and include eight claims, i.e., Iron King, Iron King Fraction, Vulcan number one and two, Summit, Morning Star, Cougar and Empress. Test holes made over the entire property indicate an average depth of from five to six feet, with occasional extreme of eight feet. Several engineers who have examined the property estimate over one million tons of ore in sight.

Typical assays made by the smelting company are appended:

Iron	49.47	53.37	58.49
Silica	4.15	2.75	2.29
Phos	0.068	0.184	.072
Sulphur	Nil	0.086	.093
Moisture	2.27	1.82	1.63
Ignition Loss	25.59	20.80	12.48

Discoveries and Developments in Northern Manitoba

By J. A. Campbell.

Nothwithstanding the dearth of men in Northern Manitoba, brought about by military requirements, a certain amount of prospecting has been done this year, and some promising discoveries have resulted.

Lake Athapapuskow—On the border of Lake Athapapuskow several finds have been made which are attracting wide attention. Two of these, made by William Kerr and Fred Vedo respectively, are at the North East arm of the lake almost opposite Goose Creek. They were located early in the season, are in close proximity to each other, and have common characteristics. In each case several claims have been staked and other local mining men are interested with the discoverers. Some stripping and trenching has already been done and several pits sunk. Samples taken from these show chalcopyrite and bernite and assays, of which a number have been obtained, indicate that the copper content is from 3 to 4 per cent.

In this immediate district representatives of the Consolidated Mining and Smelting Company of British Columbia, owners of the Trail Smelter have staked several claims. Mr. Gram, an official of the company, spent some time in that country recently. The main characteristics of these claims are similar to those above mentioned.

Farther east, at the extreme end of the lake, is a still more recent discovery made by Jacob Cook, an Indian prospector working for J. B. Cameron and associates. A small camp has been established there and commendable energy shown in investigating the nature and extent of the ore body. Some splendid specimens of chalcopyrite and bernite have been taken from this property and assays run quite high. As a result the owners are quite satisfied with the prospects and are endeavoring to make arrangements for diamond drilling the property. If this approximates in extent in any way the Flin Flon property, it will be in the front rank as a producer.

The Pine Root-Chica Claim; Phantom Lake.

Near the mouth of the Pine Root River is situated the Chica claim, one of the earliest discoveries in the district. This was taken over by a syndicate of Duluth mining men of whom Mr. E. A. Separk is the president. Mr. Separk personally inspected the property and has been over a considerable portion of the district. An item of interest that is not generally known is that a diamond drill has been working on this property all summer, and approximately two thousand feet of drilling has resulted. The work is in charge of Mr. W. J. Rashleigh and he and certain other members of the crew are also personally interested in the claim. This work is now being wound up for the season. As is usual in matters of this kind no information has been given out as to the character of the core. It is a fair inference, however, that results have been reasonably satisfactory as it is the intention to continue the drilling next year. In addition to copper, the assays show gold and silver.

At Phantom Lake, a short distance west of the Mandy mine, Gus Rosen is doing work on claims located by him, and in which some residents of The Pas are interested. These show a variety of minerals, iron and copper sulphide and molybdenite, while assays have also revealed the existence of nickel.

Flin Flon.—Flin Flon camp is temporarily deserted; two years of diamond drilling have proven that the goods are there—over twenty million tons of eight to ten dollar ore. But the development and operation of a property of that extent and character demand conditions where men and materials are readily obtainable, and these conditions most certainly do not exist now. In a recent announcement the Hon. Provincial Treasurer intimated that the Government would arrange for the construction of a railroad into the district at an early date. The importance of the carrying out of such a programme can hardly be overestimated and the result would be the removal of the main obstacle to the commencement of an immense copper mining industry.

Where the original discovery was made at Flin Flon

Some of the buildings at Flin Flon camp

Examining a new discovery at Phantom Lake

5000 tons of copper ore piled at foot of Schist lake

The Mandy.—On the other hand the Mandy camp on Schist Lake is one of continual activity. Why wait for the railroad when there is an orebody to work on which is solid chalcopyrite and the shipping ore runs over 21 per cent. copper? There is now a dump of five thousand tons of this valuable ore at the foot of Schist Lake, ready for the winter haul to Sturgeon Landing over thirty miles away.

This ore has been brought from the mine during the summer by barge, but low water prevented further transportation in this way. Before the season is over the pile will have been increased by an additional thousand tons, and at the mine another fifteen hundred tons will be ready for the teams. Forty-five men, all that can be obtained, are now employed. The shaft is down two hundred feet, with approximately one thousand feet of drifting. Mining operations will continue steadily throughout the winter.

The Mandy Mine

The Mandy copper mine, Northern Manitoba

Mr. Chas. R. Miller, ex-Governor of Delaware, vice-president of the Mandy Company, recently made a visit to the mine and found the work progressing very favorably under the management of superintendent H. C. Carlisle. While at The Pas he made arrangements for the hauling by team next winter of a minimum of ten thousand tons of ore. The contract was let to Mr. C. B. Morgan who has handled this work satisfactorily in the two proceeding years.

5000 tons of copper ore at the foot of Schist Lake. This will be hauled in winter to Sturgeon Landing, and then in summer to The Pas.

It will come as a surprise to most people to learn that already three and three-quarter million pounds of pure copper have been realized from this mine, and it is confidently anticipated that this season's operations will more than double this total.

Copper Lake Sulphides.—Peculiar as it may seem, the most extensive orebody in the whole district is that regarding which there is probably the least general information. A very large body of sulphides consisting of pyrite and nickelliferous pyrrhotite has been located on Brunne and Copper Lakes, which lie about ten miles north-east of Athapapuskow and north of the Cranberry Lakes. The discovery and first locations were made by Hugh Vickers in 1915. He staked four claims for himself and associates. On one of these, the Deighton, the mineralization extends nearly all over the west half of the claim and is continuous for the entire distance of the four claims. The ore assays; iron 30 to 40 per cent., sulphur 20 to 30 per cent., gold a trace to two dollars, silver a trace to a dollar and eighty cents, platinum a trace, copper a trace to 6/10 per cent. twelve pounds to the ton, nickel a trace to 4/10 per cent. eight pounds to the ton. The orebody is so large and so heavily oxidised that systematic sampling has not yet been attempted and the above results were received from massive unaltered sulphides picked at random.

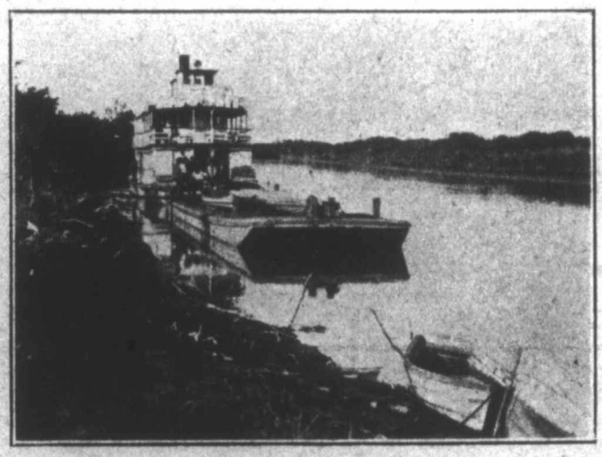
J. P. Gordon who how holds an interest in these claims intends cross-channeling the lode with the intention of cutting through the gossan and heavy oxides and it is hoped that high grade streaks will be uncovered that will give the body a decided commercial value.

J. B. Cameron has done considerable work on a claim to the south-west of the above claims and has exposed a large body of massive pyrites.

Stuart and Moore have a number of claims to the south-west of Cameron's. They have already done considerable trenching and intend working on the orebody during the coming winter. Mr. Stuart advises that their assays have been very encouraging.

Some idea of the size of this orebody may be conceived when it is explained that the body has great width and is continuous for five miles. But when one is on the ground the extent of the body and its irregular shape demonstrates effectually that the property cannot be investigated satisfactorily without the aid of a core-drill. The body contains millions of tons of sulphur (low grade), and if values are found in the base and precious metals, the sulphur contents may possibly some day become worth while.

The districts of Flin Flon, Schist, Athapapuskow and Copper Lakes, will no doubt come into their own as shippers of concentrates when the transportation dif-



Steamer with barge of ore on way from Sturgeon Landing to The Pas.

ficulties are solved, and a railway constructed into the country.

A New Gold Strike.—The sulphides of Copper Lake have taken on a much greater interest of late owing to the spectacular, gold find made by Karl J. Peterson. Peterson's find is in a quartz fissure vein about six feet wide which is cutting across the formation at right angles to the strike. The coarse gold was found within three hundred feet of the south boundary of the Deighton claim and the vein is exposed to where it disappears in the muskeg near the line of that claim. Some of the richest specimens of free gold ever shown in Manitoba have been taken from the Peterson claim.

Mr. Thompson Explains Functions of Office of Fuel Controller

As Fuel Controller for British Columbia, Mr. Nichol Thompson, of Vancouver, B.C., explaining that there appears to be some misunderstanding regarding the functions of his office, has issued a statement in which he enumerates his duties as follows:

(a) To supervise the distribution of all coal or other fuel imported into or made available within such province.

(b) To develop the demand for and supply of wood and other coal substitutes to the greatest possible extent.

(c) To promote and administer any organization prescribed by these regulations within the province.

(d) To gather and compile statistics dealing with the production and consumption of fuel of all kinds within the province.

(e) To promote within the province the greatest development of any coal areas available.

(f) Generally to assist and advise the Fuel Controller of Canada in the discharge of his duties and to enforce any regulations that may from time to time be prescribed by him.

Mr. Thompson continues: "Full powers have been given to the Fuel Controller to handle the situation and regulations have been issued by his department making it compulsory for coal mine operators and dealers to make returns of the quantity of coal produced and on hand and particulars of sales. Broadly speaking his department exercises for the national benefit and in the interests of the Allied governments, the widest possible control over the production, distribution and sale of fuel of all kinds.

"Under orders already issued by the department the price of coal in British Columbia has been fixed and is subject entirely to regulation, as is also the profit which may be made by dealers. There is, therefore, no possibility of profiteering on the part of anybody connected with the fuel business by reason of the demand outrunning the supply; as might easily be the case in a situation such as faces the eastern part of the United States and Canada at the present time.

"I might say that from my official experience the wisdom and necessity of close government control is realized by all fuel interests at the present time, and I have received a full measure of co-operation in carrying out the duties involved.

"There would appear to be some apprehension in the public mind as to the possibility of serious fuel shortage in British Columbia during the coming winter. This is not borne out by the facts, as may readily be demonstrated.

"Firstly, with regard to coal, our principal fuel. The demand for coal at the present time is far in excess of the supply, taking into account the demands for export; but the principle has been established that no coal may be exported without a permit from the Fuel Controller, and it is the policy to take care of the needs of home consumers before allowing export. As an instance, the United States Navy wants 130,000 tons of British Columbia coal during the current year, but so far it has not been found practicable to give them more than 7,000 tons. The needs of the British Admiralty are considered to be of prime importance and our first care is to take care of bunker requirements of war vessels and British controlled shipping entering our ports.

"There has been a great increase for bunker coal from this source, but it appears likely that 160,000 tons additional will be required to bunker the new shipping now being completed in the Pacific ports of the United States and British Columbia, which will sail during the next few months under Admiralty requisition. As an instance of the operation of the permit existing I might mention that in July applications were received for permits to export 18,000 tons of coal for South American points, but the situation did not warrant the granting of permits for more than 6,000 tons."

Mr. Thompson concludes by summarizing statistically the result of coal mining operations in this Province up-to-date this year, figures which have appeared in these columns from time to time. They indicate that the record of 1917 for the first six months has been excelled. From this he argues that there is no reason to believe that the shortage feared is likely to occur although the consumer is asked to make his purchase of the winter's supply without delay. He concludes with the remark that "it is the policy of this department (fuel control) to urge dealers to create by the end of October a large reserve stock at their various depots, to be available in case of emergency."

OPENING COAL DEPOSITS AT PRINCE RUPERT AND PRINCETON.

The opening up and development in a small way of coal outcroppings is being given more attention in British Columbia as a result of the increased demand and the higher prices received for coal. One of the most important of these is situated on the Grand Trunk Pacific Railway not far from the City of Prince Rupert. The Government has assisted in the construction of a road to the property and the owners and operators are confident that they will be able to take care of the greater part of the domestic demand of Prince Rupert and the adjacent district this winter. Another enterprise of a somewhat similar nature is that of the Osoyoos Coal Co. at Ashnola, nine miles from Princeton, B.C. This has been re-opened and the coal will be hauled into Princeton by motor trucks for local use and for shipment by railway to outside markets.

COST OF COAL PRODUCTION IS INCREASING.

There appears to be no finality to the upward tendency of costs. In the past year and a half, or two years, the wages of coal miners in British Columbia, roughly speaking, have risen 45 per cent., in addition to a 50 cents a day war bonus. In other words a man who was receiving $3.65 a day in wages now is getting $5.79 or, if he works an average of 30 days in the month, which most of the overmen do, he gets approximately $174 a month. This is small compared to what some of the best coal miners are making, besides being considerably above the scale paid some of the Coal Mine Inspectors. The continued advance in living costs, however, has resulted, according to authoritative report, in the decision by the miners to request a further increase, and it is understood that they have forwarded to the proper quarters a request that the scale be boosted a further $1 a day. It remains to be seen whether the Fuel Controller will find that this is justified by present living conditions; in comparison with those which existed at the time the last raise was allowed. If the men are supported it will mean, no doubt, corresponding addition to the selling price of coal which went up only a short time ago despite the protests of an indignant public.

Discovery and Exploration of the Belcher Islands*

By Robert J. Flaherty.

In August, 1910, Sir William Mackenzie, president of the Canadian Northern Railway, engaged the writer to undertake a journey to the Nastapoka Islands, outliers of the east coast of Hudson Bay in 56° 5′-57° 50′ N., for the purpose of examining and reporting upon the commercial value of the iron-ore deposits found upon certain members of the group. Sir William's interest in these deposits was connected with his interest in the new Hudson Bay route for the shipment of grain from the Manitoba grain fields to the European market and the opening of the bay to commerce by rail with Lower Canada and by ship through Hudson Strait with England. The route projected is from The Pas, a branch line terminal of Sir William's (now the Canadian Government's) transcontinental railway, to Port Nelson on the west-central coast of Hudson Bay, thence by ship through Hudson Strait and across the North Atlantic to Liverpool. This is a project which, if practicable—a matter still in question—is interesting not only because it would provide a wheat route shorter by a thousand miles than those now in use, but because it would also make immediately available such resources of the vast seaboard of Hudson Bay as might be found to be of commercial extent and of advantageous situation on or near tide water.

This seaboard bounds an area 1,200 miles long by 600 miles wide, 350,000 square miles of inland sea, and embraces the semi-arable hinterland of northern Ontario and northwestern Quebec, the semi-barrens of the Indians, the barrens of the Eskimos, and an arctic area of perpetual ice-bound sea. Nearly two-thirds of this region, indeed, lies within the subarctic and arctic zones of climate.

The white population of the region numbers some hundred and fifty "fur men," factors of the Hudson's Bay Company and their apprentices. From their posts, six along the east coast and six along the west, two hundred miles apart on an average, they control the trade of the country's native inhabitants, who themselves number less than three thousand all told. Exploration of the "East Main," as the east coast is locally termed, on the part of the Hudson's Bay Company has, despite their two and a half centuries of occupation, been negligible. Under their trading system the native brings his furs to their posts along the seaboard and thus renders unnecessary any expeditions on their part for trade extension—expeditions which would, if made, inevitably involve a certain amount of geographical exploration. Of the score or more of rivers that flow into James Bay and Hudson Bay along the east coast only two have been explored to their sources. The largest river entering James Bay, the Big River, is not only unexplored to its source, but is unknown beyond sixty miles from its mouth. The country's vacant spaces therefore can be imagined.

For such information as we have of the coast and its interior we are indebted largely to the remarkable explorations of the late A. P. Low, of the Canadian Geological Survey, whose work, covering a period of more than twenty years, has given us the most detailed and reliable maps and descriptions of the region available. It was Low's detailed reports of the Nastapoka Island discoveries made in 1877 by Dr. Bell, also of the Canadian Geological Survey, that formed the basis of the investigations which I had been commissioned to make.

How this undertaking, involving three further expeditions extending over a period of six successive years, eventually led to the rediscovery, if such it may be called, of an island land mass more than 5,000 square miles in size, lying along the East Main almost within sight of sailing routes of the Hudson's Bay Company to the westward and within a hundred miles of the company's centuries-old post at Great Whale River to the eastward, is a matter of such interest that I give the incidents here just as they happened.

From the railway frontier of northern Ontario, in late August, 1910, I journeyed by canoe down the Mattagami and Moose Rivers to Moose Factory on James Bay, thence in a small Hudson Bay sailing craft across James Bay to Fort George on the east coast, where, weatherbound, I remained until the formation of the sea ice in December. The journey up the coast was then undertaken with relays of sledges with dog teams and native drivers; the first relay at Cape Jones, the northeastern extremity of James Bay, which marks the southern boundary of the subarctic habitat of the Eskimos; the second at Great Whale River, the most northerly post of the Hudson's Bay Company on the East Main, from which point a final 150 miles brought me to the Nastapokas—a distance all told from the railway frontier of 800 miles.

The Nastapoka Islands, ranging in size from a sea-swept reef to an island thirteen miles in length, are grouped in a chain for a distance of 120 miles at an average of four miles from the mainland, forming the spacious Nastapoka Sound. Save the southernmost they lie beyond the limit of trees; such vegetation as they contain—mosses, lichens, and creeping willows—is typically subarctic. The largest of the ore deposits are located on the two central islands of the group, Gillies and Clarke, which are 12 and 3½ miles in length respectively. Their eastern shore line is broken into a series of cliffs, rising, according to Low, to a maximum elevation of 350 feet, where the various rock members are everywhere graphically exposed. These rocks have been identified by Dr. C. K. Leith, of the University of Wisconsin, as of Animikean age. His identification he bases on a correlation with the Animikean rocks of the Lake Superior region, and its interest, economically considered, lies in the fact that it is to these Animikies and the enormous mineral deposits characteristically associated with them that the Lake Superior region in great measure owes its commercial importance.

The examination of Taylor and Gillies Islands completed (the ore deposits were found to be of no present economic interest), I prepared to return to the railway frontier. It was at this juncture that Nero, my driver, one of the only two Eskimos of the seaboard who could speak English, mentioned large island to seaward of the Nastapokas, where lived a tribe of Eskimos whose hunting ground contained great walrus herds, thousands of geese in spring, salmon, seal, bear, etc.—game supply being to a native the only characteristic of a strange land worth consideration. I remembered then, for the first time since leaving Charlton Island en route northward in the preceding fall, a map and interesting information I had received there concerning these same islands from a servant of the Hudson's Bay Company, an Eskimo, Wetalltok by name, head man of the encampment, whom the company had imported from the Great Whale seaboard some fifteen years previously. The map, drawn on the reverse side of an old missionary lithograph, represented Wetalltok's hunting grounds previous to his migration—islands which on the admiralty charts are known as the North and South Belchers, the largest of them not more than six miles long.

The Belcher Island Eskimos.

On the return to Great Whale River I questioned Harold, post interpreter, concerning the post trade with the island Eskimos and learned how every year the island-

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ers, crossing the sea ice, bring bear, seal skins, walrus ivory, and fox skins to barter for tobacco, tea, sugar, matches, bits of finery, powder and shot, and a gun perhaps, if by good fortune there is a "silver" (fox skin) among them. They cross when the ice fields, the largest area of fixed ice in Hudson Bay, are frozen so as to be immovable between the islands and the mainland during the extreme cold months of February and March, a period rarely longer than six weeks. During the remaining months of the year they are isolated from intercourse with the mainland. Harold described how distinctly they differed as a tribe from the mainlanders, not only as to costume in winter, when they wear the feathered skins of eider ducks in place of the mainlander's deerskin, but in speech as well; which, he explained, was more "like the talk of children." He told how primitive they were and how poor as hunters—the latter a damning fault in Harold's Hudson's Bay Company eyes. Harold estimated that the island population numbered some 150 souls, thus corroborating information I had received from Wetalltok and confirming my impression of the extent of their territory.

The Second Expedition.

By June of the following year, 1911, the expedition was under way. I again arrived this time by the Missinaibi route, at Moose Factory and there secured a thirty-six foot sailing craft for the cruise to the islands. To make a long story short, our little craft proved inadequate for the work in hand, and we arrived at Great Whale River post too late to impress a crew for the crossing. Wintering at Fort George, therefore, I waited eight months for an opportunity to cross over the sea ice from Great Whale River, but was again doomed to disappointment when, on the point of making departure with two Eskimos, the field ice broke, disrupted by an extremely heavy gale, an occurrence unique in the twenty-eight years of old Harold's experience.

All thought, therefore, of reaching the islands was abandoned for the remainder of the winter and until the following open season. Whereupon, following an idea that had been shaping itself in my mind, I planned to explore an ore-bearing rock series, similar in character to the Nastapoka series, reported by A. P. Low as occurring along the lower reaches of the Koksoak River in northeastern Ungava, 100 to 150 miles inland from Ungava Bay. I hoped to find an extension of that series farther north on or near tidewater of southwestern Ungava Bay. The undertaking involved two traverses across northern Ungava through the hitherto unexplored portion of the peninsula; the first by sledge along the 57th to the 59th parallels eastward from White Whale Point on Hudson Bay to Leaf Gulf on Ungava Bay; the second by canoe along the 60th parallel westward from Payne Bay on the Ungava seaboard to the mouth of the Povungnituk River on Hudson Bay. The second traverse was undertaken only when I found that the return journey I had planned ascending the Koksoak River to the height of land, thence by the headwaters of the Great Whale River to Hudson Bay, would, in any event, owing to the unusually late break-up of the Koksoak River, bring me too late on the Great Whale seaboard for the crossing I had intended making that summer to the islands.

The Third Expedition.

So it happened that in October, 1912, a year and seven months after leaving civilization, I again arrived in Lower Canada with the expedition to the Belchers still unaccomplished. However, with a persistence altogether characteristic, Sir William said, "Get a ship." This meant outfitting on an adequate scale at St. Johns, Newfoundland, and proceeding through Hudson Strait and southward along the eastern coast of Hudson Bay. Accordingly the topsail schooner Laddie, of 83 tons register, was purchased from Captain Sam Bartlett, the well-known Arctic navigator of Brigus, Newfoundland. Captain H. Bartlett was put in command. The crew were: S. Gushie, mate; H. Spracklin, boatswain; McLeary, engineer; W. Robertson, cook; and R. O'Leary, K. French ,and J. Robertson, seamen. S. Sainsbury and E. E. Laduke completed the personnel of the expedition.

Though we cleared St. Johns on August 17th, 1913, it was not until a year afterward, late August of 1914, that we finally put into the bay. This was on account of our delayed departure from Newfoundland, which brought us so late into the strait that we were stopped there by winter. Winter quarters were erected in Amadjuak Bay on the south-central coast of Baffin Island, and the ship was sent back to Newfoundland with orders to return the following year over the first open water. During the year we carried out explorations along the seaboard. An attempt was made to explore the unknown coast line of Fox Channel; but an inadequate outfit and impassable rough ice made the project impossible and, at the Trinity Islands, 35 miles west of Cape Dorset, we were turned back. A small portion of the interior of southern Baffin Island was explored as far north as Amadjuak Lake. We compiled an ethnological collection for the Royal Museum of the University of Toronto, and with a motion picture outfit filmed the travel and igloo life and some of the religious performances, conjuring, and dances of the Baffin Island Eskimos.

The Laddie was six weeks en route to our relief, having encoutered heavy ice all along the northern Labrador coast and at the entrance to Hudson Strait; in the strait she was nipped in a heavy ice stream which came near sinking her. On the 19th day of August, when we were living on the fag ends of our provision supply, she finally arrived, somewhat bruised at the bow and with a bent propeller shaft, but not beyond repair; and on the 23rd of August we set sail for Hudson Bay.

Arrival at the Islands.

From Cape (Sir Thomas) Smith a course was laid due south and off shore some seventy miles. In latitude 59° we encountered thick, foggy weather, which was continuous to 56° 30′. We had sighted small islands, barren, low masses of trap, all of them less than two miles in length, whose outlying waters were shoal and infested with innumerable reefs. Fearing accident, toward nightfall of September 8th, the ship's course was laid to eastward for sea room over night, but within the hour she grounded on a sunken shoal, where she pounded heavily through the night. When daylight came we made out through the lifting fog a small island a half mile to westward, while to the northeast, the east, and the southeast lay a nest of boiling reefs.

Contrary to our expectations of total wreck, at noon, by aid of the tide and the discharge of her ballast and oil fuel, the Laddie hobbled off unhurt. Our good fortune did not end here, for the watering crew, taking the ship's casks ashore to refill them, climbed a low hill of the small island's northern end and from its vantage saw land to the west extending north and south over nine points of the compass and distant approximately twenty-five miles; obviously it was an island seaboard at least sixty miles in length—identifiable only as the eastern coast line of the Belchers.

That evening we arrived at the northerly extreme of the island, logging twenty-two knots for the distance. From the crest of the shore range, a bold island-free coastline of barren, ice-scoured diabase descending some 250 feet half rounded / like a whale back into the sea, we gained a view of unbroken ranges of land to the westward, barren save for plots here and there of russet mosses, studded with tiny lakes, and extending inland to a horizon twenty miles away, and here, typifying as strikingly the topography of the country as do those of the Nastapokas

and the mainland, lay the Animikies—first the costal eruptives, and beyond them the red bands of shale and marl, the yellow of the quartzites, and the white gray of limestone, all paralleling north-northeast and south-southwest, the trend of the island generally.

A week was spent along the island's east coast. Six miles to southward of this first anchorage we entered a snug bottle-necked harbor, and, while the crew reballasted the ship and did such overhauling as under the circumstances was possible, we made cross-wise trips inland and a launch cruise to the southward, covering short distances only, however, since we found the ore series we were looking for on the shores of the harbor itself, and detail work upon it consumed most of our time. We kept a sharp lookout for natives, but none were seen; though recent fire places, boulders, and old goose blinds were noted at several points along the shore.

Embarrassed by the unseaworthy condition of the ship, on the morning of September 13th, we cleared the islands, southward bound, to berth her for the winter at Moose Factory. At Great Whale River post the expedition instruments and gear were discharged and stored away against our return islandward the following open season.

Our testimony to the extent of the land we had seen was received both at Great Whale River and elsewhere on the bay with open skepticism and no little "pleasantry" on the part of Company men whose life's experience had been along the Great Whale seaboard.

We arrived at Moose Factory on October 2nd, and there experienced an aftermath of the island shipwreck, when the Laddie, discharged of her ballast and gear, filled to the engine room, but settled, fortunately, on a shallow river bar, over which she lay at anchor until berthed.

Fourth Expedition.

After spending the winter in the confines of civilization we again reached our field of operations in September, 1915, when the Laddie again dropped anchor in the shelter of a Belcher Island sound. On this, our second visit to the islands, the explorations were carried on continuously through the winter and summer until the following September They were as comprehensive as thelimited resources of the expedition in men and means permitted, for only the ship's master, W. Robertson, and a Moose Factory servant, to both of whom I am deeply indebted for what was accomplished, remained with me through the winter and following summer. The remainder of the crew were sent out in October and February owing to our lack of fuel and provisions. By Mid-March our fuel had become exhausted, and the Laddie, now crewless anyway, became the victim of circumstance and afforded us a fuel supply by her masts, yards, bowsprit, rails and cabin—all of her in fact that was combustible. The following open season's work and the final journey from the islands were carried out in the Nastapoka, the same diminutive craft we had attempted to use in our first futile effort to gain the islands from Great Whale River on our second expedition.

Topography and Structure of the Islands.

The island ranges, barren hills, the highest of them not more than 480 feet as determined by aneroid, lie like bands of rounded ribbing, paralleling the islands' trend. This is typical of the Animikean rocks, which were found everywhere to comprise the rock system. Eruptive diabases, extending over a third of the island's surface area, include the more prominent of the ranges and are distinguishable by their conspicuous brown black appearance, by their generally more barren condition, and by their massiveness. They form a striking contrast to the sedimentaries, which lie in folds, synclines and anticlines, dipping east or west, as the case may be, at an angle which varies from 50° to 5°.

Owing to the absence not only of tree growth but also of soil, except where to a local extent it occupies the floors of valleys, the rock formations are everywhere so well exposed that with a field glass from a distance of six miles or more we were able to locate the white bands of quartzite, the reddish masses of the ore series, and the jet-black hills of the eruptives. This absence of trees and soil was a factor in facilitating exploratory work whose value can hardly be realized by one not familiar with such conditions.

Throughout the interior of the larger islands lakes are everywhere found. They range in size from goose ponds and pools in the peaty tundra of the valleys to the magnificent Kasegaleek Lake (Lake of Seals). The smaller lakes are generally shallow; in many the ice freezes to the bottom, that is to a depth of six feet. The lakes not thus frozen in winter contain an abundance of Arctic salmon and whitefish, the only species of fresh-water fish found and an important source of the islanders' game supply during the open year until the middle of December Kasegaleek Lake, 43 miles in length and, on an average, 7½ miles in width, occupies the largest and central island of the group. It lies some 40 feet above sea level and discharges from its southwestern extremity through a small river 10 miles in length. This river is broken into a series of lake expansions and descends by rapids, none of them too rugged for kayak travel to the sea. A mile from its mouth it is 200 feet wide, has an average depth of 4 feet, and a current flowing at the rate of 3 miles per hour. The eastern shore line of the lake is composed of almost sheer rugged cliffs and steep hills of diabase, averaging 150 feet in height and extending nearly the entire length of the lake. On the lake's northeastern portion, a U-shaped bay extends eastward to within 1,500 feet of tide water, to which, through a canal, the water of the lake could easily be led, with a fall of 40 feet. The western shore of the lake is less rugged and is broken by islands and long-fingered indentations which run parallel to its length. The islands increase in number to southward, being most numerous in the southwestern portion. The natives say that the lake is extremely deep. Unfortunately I had neither time nor opportunity to make soundings.

Innumerable pools and small lakes on the islands and throughout the low tundra of the western shore are breeding-grounds for geese during the months of May, June, and July. At this season the natives come there to hunt them, to gather eggs, and to fish for the Arctic salmon which then are spawning in the gravels along the shore line and in the mouths of entering streams. Here also they hunt the fresh-water seal, with which, they assert, the lake abounds; hence its name. Its clear, green water, hemmed in by the jet walls of rugged shore, with a traverse that extends to a landless horizon when viewed from either extreme, forms, despite the dearth of trees and vegetation, a picture that is singularly beautiful.

Navigation.

Good harbors, ranging from sounds to small and snug bottle-necked anchorages, occur throughout the islands. With proper charting, the approach from sea, save along the southwestern coast, should not be at all dangerous. The season of open water varies greatly, however. During the year of our residence the field ice cleared on June 10th, and did not return again during the summer. We gathered that this was a very unusual occurrence and was due to the prevalence of northerly winds during May and June when the sea ice was rotting and being broken by the tides. The Eskimos say that in some years the islands have been surrounded by pack ice as late as mid-August, and that ordinarily the annual clearance occurs about the first week in July. For ships built for the navigation of Hudson Strait the average date of approach to the islands

should be approximately the first week in July, if not earlier, since much of the field ice, if still existent, would then probably be rotten enough to offer no obstacle. Obviously only ice observations covering a period of years can yield results of definite value.

Climate.

The climate of the islands differs widely from that of the opposite mainland. Compared with weather reports from Great Whale River for the same period, our observations gave a far greater proportion of overcast skies and fogs, stronger and more constant winds, but higher and more equable temperatures. From October till early December winds of a velocity up to 50 miles were almost constant, and the sky was continuously overcast.

No snow covered the ground permanently until November 15th, and no ice was formed in the small lakes near the wintering base until December 4th, when the long period of winds ceased and a fortnight of calm, clear weather set in. The mercury did not fall below zero until January 2nd—a weather condition without precedent in my experience of the North. Great Whale River early in December had a minimum temperature of —30 degrees and recorded a constant average for the period well below zero.

On January 2nd, winter commenced in earnest. The month was characterized by constant drifting winds of a maximum force of 70 miles; calm days were unknown; and the average temperature was —16 degrees. In February the winds abated; there were many days of sunshine, a few of them almost calm. The average temperature for the month was —19 degrees. Throughout March strong winds again prevailed; by the end of the month the snowfall for the winter had reached its maximum, 4 feet; the average temperature for the month rose to —9 degrees. In April and May there was the usual prevalence of wind, and several blizzards occurred, each covering a period of from one to two days. In the latter part of May the weather broke and became warm and summery; in fact, there were heavy thunderstorms at this time. On May 28th, sledging over the ice fields was at an end, and by June 10th the field ice surrounding the islands had blown off to southward. Then commenced the most trying time of the year; for hardly two days together did fair weather obtain. From mid-June onward to the time of our departure on September 13th, exceedingly heavy gales of wind of from one to three days' duration occurred in every week. The prevailing direction of the winds was south-southwest for not only that period but for the entire year. Days of sunshine were rare; the sky was generally overcast; and rains, accompanied usually by heavy southeast winds, were frequent. According to the natives the weather we experienced during that year was not at all typical; usually, they said, the winds were fewer and less violent, and the temperature during the winter was lower. The remarkable lateness of the freeze-up (December 23rd) was, they said, without precedent. The minimum temperature for the winter was —48 degrees as compared with the lowest mean reported temperature on the mainland of —55 degrees. The maximum thickness of fresh-water ice was 5½ feet, and of sea ice 5 feet. The maximum temperature for the summer, occurring on July 25th at noon, was 70 degrees.

Minerals of Belcher Islands.

Our mineral explorations resulted in the discovery of four distinct ranges of iron-bearing rocks, 30 miles in length and 3 miles apart, one from another, in an east-and-west direction, on the eastern half of the island. The longest continuous outcrop found was 4 miles in length, with an average width of the orebody—if such it may be called, for it is a mixture of ore, jasper, and much other siliceous material—of 30 feet. This outcrop is the northern extremity of a range which follows for 25 miles the eastern shore line of Keepaloo Inlet. Here from what is the western edge of an enormous syncline the ore series dip 40° to eastward and underlie Omarolluk Sound, 5½ miles across to its eastern shore, where the eastern edge of the fold is found, though in much leaner state and less exposed at surface. These figures may convey to the reader some idea of the magnitude of the largest of the iron ore deposits. No ore of high quality, however, was found. The best, in Keepaloo Inlet, averaged from wall to wall not more than 38 per cent. metallic content—obviously too low-grade a product for present operation in these latitudes. The principal detriment to the ore is silica; as far as phosphorus is concerned it is fairly clean, averaging less than .005 per cent.

In certain contacts between the silicified limestones an diabase on the western slope of Tookcarak Island were found occurrences in small stringers of calcite, of smaltite, and of cobalt bloom. There was no body of calcite, and the distribution of the minerals where found was sparse. Other minerals noted were manganese, occurring in small stringers in iron-bearing slates and chalcopyrites, some of the latter mineral containing as much as 30 per cent. of of copper. Neither mineral was found in commercial quantity, however.

Other Expeditions.

In August, 1916, the writer's father, R. H. Flaherty, M.E., Dr. E. S. Moore, professor of geology in the Pennsylvania State College, and W. H. Howard, Dominion Land Surveyor, arrived on the islands. Dr. Moore and Mr. Flaherty made geological and mining reports on the ed-pedition discoveries. Dr. Moore also made a geological cross section of the folds of rock series over the eastern half of the islands. Mr. Howard's work comprised an accurate determination of the position of the islands in relation to known points on the mainland as well as some detail surveys in connection with Dr. Moore's and Mr. Flaherty's reports to Sir William.

During the summer of 1915, that is the summer succeeding our first landing on the islands, the Hudson's Bay Company had made an expedition there with a local James Bay steamer and salvaged one of their sailing vessels which had been carried away by ice the preceding fall from Fort Churchill 500 miles across the bay. She had been reported to Mr. Mavor, the factor at Great Whale River, by migrating Eskimos, whereupon he had sent out his clerk, Mr. E Renouf, a young Englishman, to verify the report. This Mr. Renouf did, crossing the field ice with two Eskimos, the first crossing over the ice to be made by a white man since Wiegand's in 1849. During our wintering Mr. Mavor and the Rev. Mr. Walton, missionary to the Eskimos of the Great Whale seaboard, visited me. All of this was the more interesting since the bay folk had been sceptical of Wetalltok's "Big Islands" yarn. The Big Islands are ancient history in the bay now, and Wetalltok stands vindicated.

MINING CORPORATION INVESTIGATING MINES IN BRITISH COLUMBIA.

Messrs. C. E. Watson and G. O. Randolph, the former being general manager of the Mining Corporation of Canada, Toronto, which corporation recently purchased the Woolsey silver property, on Silver Creek, near Revelstoke, B.C., have left for Northern British Columbia. Their intention, according to well authenticated report, is to make an examination of the famous Engineer Mines of the Atlin (B.C.) District, one of the best known gold producers of the Canadian West. The Engineer Mine is at present controlled by Capt. Alexander, who takes out considerable gold annually by means of a small stamp mill For several years Capt. Alexander has brought out every year remarkable samples of native gold. On a number of occasions the property has been under option for large sums and, if Mr. Watson and his associates decide to make the purchase, the deal will be one of importance.

PERSONAL.

Mr. A. B. Clabon, of Vancouver, B.C., is credited with the successful consummation of a deal, by which the Mining Corporation of Canada will take and operate the Woolsey Group at Silver Creek near Revelstoke. The new owners will immediately start building a road, while development work and installation of machinery, will be pushed ahead with all possible speed.

Mr. Walter Vidler, of Boulder, Colorado, is in British Columbia encouraging prospectors to look for rock containing vanadium.

Mr. James Renney, Overman for the past two years at the Reserve Mine, operated by the Canadian Western Fuel Co., at Nanaimo, has resigned his position and gone into business, having taken over the interests of the MacFarlane Wharf Co., Nanaimo.

Mr. Francis John has been appointed Overman at the Reserve Mine to succeed Mr. Renney. Mr. John was Tipple-Boss at the Harewood Mines of the Canadian Western Fuel Co.

Mr. A. L. Rattray, formerly City Clerk at Nanaimo, has accepted the position of accountant with the Granby Consolidated Mining, Smelting and Power Co. at their new Colliery at Cassidy's near Nanaimo, B.C.

Mr. G. W. Bowen, vice-president and managing director of the Canadian Western Fuel Co., has left on a motor trip to California, where he will visit for some weeks, afterwards proceeding to Salt Lake City, Denver and Albuquerque.

Mr. T. E. Godson, Mining Commissioner of Ontario, accompanied by Mr. T. F. Sutherland, Inspector of Mines for that province, has been a recent visitor to British Columbia in the course of a,our of general investigation of the mining departments of other provinces.

Judgment has been handed down dismissing the claim of Robert T. Ward for $11,000 for a mechanic's lien against the Bullion Mining Syndicate of Quesnelle Forks, B.C. The trial was held at Quesnelle, B.C., on June 28th and 29th of this year.

Mr. Cyril Knight, Mr. A. G. Burrows, and Mr. P. E Hopkins, of the Ontario Bureau of Mines have returned to Toronto after spending the summer mapping gold areas in Northern Ontario.

Dr. W. G. Miller, Provincial Geologist, is still in England where he represents Canada on the Mineral Resources Committee.

Mr. T. F. Sutherland, Inspector of Mines, has returned to Toronto after visiting mining districts in Western Canada.

Mr. R. E. Hore has returned to Toronto from Milwaukee, where he attended the Allied Metals Congress.

Mr. W. A. Janssen, Canadian Steel Foundries, Montreal, has been elected vice-president of the American Foundrymen's Association.

Mr. M. Y. Williams, of the Geological Survey, has returned to Ottawa after a field season in southwestern Ontario oil fields. Mr. Williams has recommended several areas as worthy of attention and most of the recent drilling is on these areas.

At the Mossa Molybdenite Mine, Ouyon, operated by the Dominion Molybdenite Co., mining has, up to the present, been by open pit. Underground mining will be begun shortly, a shaft having been sunk to a depth of 200 ft. for this purpose.

Of the 132,248 barrels of crude oil produced in Ontario during the first six months of 1918, nearly 50,000 barrels came from the new Mosa field.

MINISTER OF MINES VISITS BRITISH COLUMBIA.

Hon. Martin Burrell, Minister of Mines in the Dominion Government, is making a tour of British Columbia. Discussing the work of his department he says: "A large part of the energies of the Department of Mines at the present time is being devoted to an investigation of the production possibilities of such minerals as are necessary in the production of munitions of war. The purpose is to investigage such discoveries as may be reported with a view to securing development if the propositions appear to justify action on the part of the department. We are paying especial attention to plantinum, because of the extraordinary shortage of this metal all over the world. The Ural Mountains of Russia were the principal source of supply before the war. Judging by reports which the department has received the Tulameen district of British Columbia is the most hopeful platinum prospect on this continent. To encourage platinum production the department has established a refinery for this mineral at the Vancouver (B.C.) Assay Office, and a considerable production already has resulted." In reference to the production of gold and the serious handicap which this branch of the mining industry labors under existing conditions Mr. Burrell said that the question was an involved one of international concern, and the matter of assistance could not be dealt with until a universal policy was decided upon.

COMMITTEE WILL INVESTIGATE SMELTER CHARGES.

Definite word has been received of the approval by the Dominion Government of the proposed investigation of the affairs of the Consolidated Mining & Smelting Co. of Canada with a view to ascertaining whether in its charges to mine operators and in its general dealing it has been fair to its customers, having special reference to the conduct of the large smeltery at Trail, B.C. The members of the Committee of Investigation, who have been endorsed, are Messrs. S. S. Fowler (chairman) and Ivan DeLashmutt, and James Anderson. Full powers are said to have been granted the Committee to take evidence on oath and arrangements are being made for expert metallurgical and accounting assistance. Mr. Fowler, a graduate of the Columbia School of Mines, is a man of wide experience in mining and smelting matters. For several years he was consulting engineer for the British Columbia Goldfields and many other properties and is consulting engineer for the Yankee Girl Gold Mines. He is best known as the manager of the Bluebell Mine at Riondal, B.C. Ivan DeLashmutt, the Superintendnet of the Standard Silver Lead Mines at Silverton, B.C., was for many years with the Anaconda Smelter and later was testing engineer for the Utah Consolidated. He is a graduate of the Colorado School of Mines and for some time held a post as professor of metallurgy at the University of Arizona. Mr. James Anderson is the mayor of Kaslo, B.C., and has had extensive mining interests in British Columbia for many years. He is the agent for the George Alexander interests which control the Nettie L., Ruth, Silver Cup and other properties.

BUILDING MILL AT PRINCETON

Work on the new mill for the Canada Copper Corporation at Princeton, B.C., is underway, the foundation, as far as excavation is concerned having been completed, and a part of the concrete laid. The railway between Princeton and the mill site will be ready for steel by the 1st of November. Immediately upon the completion of this end of the road the grading between the mill site and Copper Mountain will be pushed forward, with a view to providing, at as early a date as possible, facilities for transportation of ore from the mine.

Magnesite quarries in Quebec are now producing about 12,000 tons magnesite per month.

SPECIAL CORRESPONDENCE

NORTHERN ONTARIO.

Nipissing.

Production of silver from the Nipissing mines for the month of September, showed an increase of nearly $6,000 over the August output, but at the same time was considerably below the average monthly production of the balance of the year. In his report to the president and directors of the company, Hugh Park, manager, says that during the month the company mined ore of an estimated value of $256,461, and shipped products from Nipissing and customs ore of an estimated net value of $545,528. The usual amount of underground work was performed at all the shafts. A small vein being encountered at shaft 73; it is one inch wide and assays about 1,500 ounces, but over its present exposed length the average assay is considerably lower than the above figures. The diamond drill has completed operations on R. L. 402. Several holes were drilled for formation purposes. No veins were encountered. The high grade mill treated 98 tons and shipped 513,713 ounces of bullion, while the low grade mill treated 6,348 tons. The following is an estimate of production for the month:

Washing plant	$151,688
Low grade mill	104,773
Total	$256,461

The record month of the Nipissing Mining Company for the current year was in June, when $340,657 was produced.

Will Explore Properties North of Cobalt.

The Mining Corporation of Canada is making preparations for the extensive exploration of the property recently acquired near North Cobalt in the Townhsip of Bucke. The property lies on the west side of the Nipissing Central Railway and was purchased from the railway company during the past summer. The old shaft on the property, which was sunk to a depth of 100-ft. on a promising vein in which cobalt was present, is being timbered and it is the intention of the company to carry this working to a depth of 300-ft. Electrically operated machinery will be used for development. The geological conditions prevailing in the immediate vicinity of North Cobalt are somewhat similar to that occurring in the productive area of the Cobalt camp, and the fact that ore in commercial quantities was never developed in the district is somewhat of a puzzle to leading mining men. However, the recent successful operation of the former Green-Meehan mine by its present owners, indicates more or less big possibilities in the south-eastern Bucke area, which may yet take its place as a valuable silver producer.

Kerr Lake.

The Kerr Lake Mining Company began its fiscal year with a production in September of 208,339 ounces of silver in the first month. This compares with 210,388 ounces in the corresponding month of one year ago, and is considered very satisfactory. The output was approximately 42,000 ounces less than August, but was almost on a par with last year's monthly average. With ore reserves estimated to contain upwards of 1,600,000 ounces of silver, the year is looked forward to with optimism.

The regular dividend of 25 cents per share has been declared payable December 16th, to shareholders of record December 2nd. The disbursement amounts to $150,000, and is equal to 5 per cent. of the issued capital. The coming dividend will make a total of 20 per cent. paid during the current year, the total disbursement amounting to $600,000. Since going on a dividend basis on October 4th, 1905, including the dividend just declared, the company will have returned to its shareholders $8,010,000. This is the third highest record of Canadian silver mining companies, comparing with something over $17,000,000 paid by Nipissing and $9,240,000 by the Coniagas Mining Company.

Interesting Development Work at Adanac Mine.

The large new vein at the 310-ft. level of the Adanac mine recently encountered in the west cross-cut, and on which drifting is being done is about nine inches in width, the larger part of which is composed of nicolite and cobalt, with ruby silver. The drift is being driven to the south, and is in the Keewatin formation at a point close to the underlying diabase, which is dipping to the south. As the drift advances it draws farther away from the sloping diabase. Veins close to the contact generally show a tendency to split up, or are more or less irregular while a short distance away from the contact, they become more regular. Such is proving to be the case at the Adanac, and those most deeply interested anxiously await the result of each round of shots. On the Temiskaming property, which adjoins, during its early development drifting was carried on along a vein less regular and not nearly so well mineralized as that being worked at the Adanac, when without any other indication a round of shots revealed a high grade shoot of ore which netted the company several hundred thousand dollars, and started the company on its highly profitable career. Thus the present development of the Adanac is fraught with a great deal of interest. Assays from the vein taken recently have given slightly over one hundred ounces to the ton in vein matter in which silver was not visible, while in portions of the vein native silver is in evidence. A small shipment was made during the past month containing approximately three tons of high grade ore. Mr. R. A. Cartwright, president and Mr. E. M. Campbell, director of Ridgeway, Pa., recently visited the property and are confident of the near future placing the mine among the list of important silver producers.

Ore Shipments from Cobalt.

Ore shipments from the Cobalt camp during the month of September amounted to approximately 2,319,515 pounds, including shipments from the Pittsburg-Lorraine Syndicate of South Lorraine and Edwards and Wright, operators of the Green-Meehan property. These figures compare with shipments for the month of August of 2,554,180 pounds. From present indications the current month promises to establish a record considerably in excess of that of the month of September. It is usually the case that shipments during the fall show an increase. In point of silver shipped the Nipissing Mining Company appears to have assumed the lead, while the Mining Corporation of Canada comes second. The large ore reserves of the Nipissing lead to the belief that in future this company will maintain the lead as a bullion shipper from the camp. The company owns a large acreage which as yet has not been entirely explored.

Mr. Alfred R. Whitman, geologist, of New York, formerly of Cobalt, has given up consulting work to take an instructorship in War Topography at Columbia University, in connection with the Students' Army Training Corps. Mr. Whitman during recent years has distinguished himself and become one of the recognized authorities on geological conditions met with in Northern Ontario. Mr. Whitman said, in a recent interview: "I will not again be available for consultation work until after the war. I have definitely committed myself to this war work as long as it may last."

Work is under way on the Giroux property, in the township of Lorraine, near La Tour Lake. A small force of men are at work and additional supplies are being taken in. The property is being worked under lease by Cobalt men, and it is planned to ship ore during the coming winter.

McKinley-Darragh.

The current assets of the McKinley-Darragh-Savage Mining Company of Cobalt, are considerably more than the amount required to meet the dividend requirements for the year 1918, at the present rate of 12 per cent. per annum. The surplus as shown of September 24th, totals $336,697. In addition to this highly satisfactory financial position, the current earnings of the company are more thar sufficient to meet the dividend requirements of 3 per cent. quarterly. In 1917 the mine yielded upwards of 900,000 ounces of silver. While a slight decline in production may be looked for during the current year, output is considered to be fairly well maintained. Backed by this strong financial asset, the McKinley-Darragh is considered to be in a very healthy condition.

Gowganda Mine Will Produce 1,000,000 oz. of Silver This Year.

Production for the current year at the Miller Lake O'Brien property at Gowganda, the second largest silver mine in the Dominion, in point of ore reserves, will probably be about one million ounces, possibly more. Its operation being controlled by a closed corporation, the details are not available, except in approximate figures. Unofficial estimates place the ore reserves of the company at about six million ounces. As a result of the development of such a mine nearly thirty miles from the railway, and in view of the fact that the surrounding properties in a number of instances have similar geology, the past year has witnessed increased genuine and consistent development. In spite of the general shortage of labor throughout the district, the achievement of this company is one of the most notable in the mining history of the North Country. This one great mine has been the groundwork on which the prospects of the district are being developed. The company makes every effort to assist in the happiness of its employees, and with this end in view moving pictures and social evenings are provided by the management.

The Walsh Property, Gowganda.

The Crown Reserve Mining Company of Cobalt is understood to have dropped its option of the Walsh property in the Gowganda mining area, which it has had under option for the past year, and on which development has been carried to a depth of 200-ft. with lateral work at this level and also at the 100-ft. level. During the summer an encouraging vein was encountered at the 100-ft. level and drifted on for some distance, while the shaft was continued to the 200-ft. level and a cross-cut run to the vein at this depth. According to reports the results obtaining during the tenure of the option were sufficiently encouraging to warrant further work. However, a large cash payment fell due about the first of the present month, and when an effort was made to obtain an extension of time, one week was granted, at the expiration of which time the payment was not made and the claims reverted to the original owners. The original owners are said to be making arrangements for the continuation of the development of the property.

The Castle Property, Gowganda.

The shaft at the Castle property adjoining the Miller-Lake-O'Brien mine at Gowganda is nearing the 300-ft. level, where the development program consists of extensive lateral work. According to late reports from the property a vein system for which it was thought a cross-cut would have to be run at the 300-ft. level, cut across the shaft somewhat higher up. The vein is said to be encouraging. The Castle is under control of the Trethewey Mining Company of Cobalt.

A number of other properties besides the three above mentioned in the Gowganda district are receiving attention at present, and on a number of these promising surface indications are said to be present. With the increased activity of the district, it is highly probable further steps will be made to improve the transportation facilities to the camp as soon as the cold weather sets in.

Wright-Hargreaves.

The designing of a mill with a capacity of 150 tons per day for the Wright-Hargreaves property at Kirkland Lake is being proceeded with and the site for the new structure has been chosen. An excellent mill site has been selected just north of the No. 3 shaft on the shore of the lake. It is proposed to equip the No. 3 shaft with a large head-frame and the necessary equipment to meet the requirements of the central or main shaft. The head-frame from the No. 3 shaft will be removed north to the No. 1 vein and used for further work at this point. The designing of the mill at this time will permit of the order for machinery being placed in time for arrival and transportation to the property over the winter roads before spring. Providing nothing unforeseen happens to retard the work, the mill should be in operation next summer. The supply of labor for construction purposes is very limited at present. However, there are many possibilities which might tend to remedy this condition, in which case the work will be proceeded with more rapidly. The mine has been developed to a depth of 400-ft. and there are about a dozen faces in ore. Thus with the completion of the milling plant the property could immediately go on a producing basis.

Lake Shore Mines.

Operations at the Lake Shore mines, Kirkland Lake, continue to be of a highly satisfactory and profitable nature. The company is increasing the capacity of the mill. The September monthly statement showed the treatment of 1,860 tons of ore, and yielded $44,500. This performance is considerably in excess of the estimated capacity production of the plant, and is chiefly due to the efforts of Mr. R. C. Coffey, the present manager, who designed the milling plant. The mill heads to date have averaged around 125 per ton with all ore coming from development work at the 200 and 400-ft. levels. One of the most significant features of the property is the tendency of the orebodies to show greater width as depth is attained. This is particularly true of the No. 1 vein, where in the west drift more than a score of feet in width of ore is showing in the face of the drift. Such orebodies, wholly intact, except for the amount of work necessary to prove their existence, may be fully counted upon to constitute a huge reserve. The ore at present in sight in the workings of the mine is sufficient to keep the mill operating at full capacity for a number of years to come, and added to this will eventually be greater length and depth of these orebodies. Thus it is highly probable that when the economic conditions become favorable the Lake Shore will enlarge their milling facilities. It is estimated that costs of production at the property are running between eight and ten dollars per ton, thus leaving a profit of $15 per ton on a capacity of 60 tons of ore per day which is being treated. Upwards of 2½ per cent. every sixty days is being earned on the capital issued. The second dividend is expected early in December. These results have been accomplished under most adverse conditions and with a return to more normal times, the profits of the company would be much greater. The future for the Lake Shore appears exceedingly bright.

Ontario-Kirkland.

Plans for the operation of the Ontario-Kirkland property in the Kirkland Lake district have been consider-

ably enlarged upon. financial arrangements having been made for the carrying out of approximately seventeen hundred feet of underground work. After the completion of installation of the $15,000 electrically driven mining plant, the shaft, which is now down one hundred feet, will be continued to a depth of 300 feet. where 1,500 of lateral work will be done. It is expected the plant will be installed by the early part of November, and the shaft will reach the 300-ft. level some time in January. A number of strong well-mineralized veins have been opened up on the Ontario-Kirkland property and development work underground will be centred on the vein which the shaft is being sunk on. However, two other strong veins are known to parallel the former, and these will also be tapped at depth to determine values.

Frank Huth, of Nazareth, Pa., president of the company, accompanied by William F. Meyer, of Bethlehem, Pa., and Walter E. Hurd, of Philadelphia, have recently paid a visit to the property. The claims which comprise the holdings of the company were formerly known as the Hurd group.

Kirkland Lake Gold Mines.

With the new mill almost completed at the Kirkland Lake Gold Mines property, much speculation is rife in the the district as to whether it is the intention of the company to press the plant into service at once or not. Sufficient ore of a good milling grade has been blocked out underground to keep the mill in operation for some time and a large amount of ore is on the dumps ready for treatment in the new mill. However, whether or not milling operations are to be commenced has not yet been announced.

A central shaft is being sunk on the property with three compartments and will be connected with the various levels as the work proceeds. The underground workings of the Kirkland Lake Gold have been carried to a depth of 700-ft,. the deepest in the Kirkland Lake Camp, and at this depth the mineral deposition proved consistent with the upper levels of the property and showed no signs that it would not continue to much lower depth. Almost a million dollar's worth of ore is said to be blocked out in the mine.

The Beaver Consolidated Mining Company, of Cobalt, which controls the Kirkland Lake Gold, owns nearly all the stock of the concern and have financed the development of the property and erection of the mill, and it appears reasonably sure that the shareholders of the company will eventually reap the just rewards of the energetic endeavors of their president and directors in their comparatively new mining venture.

Miller-Independence.

Drifting operations are under way both east and west at the 200-ft. level of the Miller-Independence Mine at Boston Creek along the big orebody. In the meantime the mill has been completed and the necessary additions made, and is now in readiness for operation. The capacity of this plant is approximately 40 tons per day. Owing to the richness of the ore to be treated, however, to make sure of good recovery only about twenty tons per day will be fed to the mill. Lack of water has formerly been one of the inconveniences at the Miller-Independence, but a dam has been constructed and an artificial pond made which will provide sufficient water for all requirements.

Additional working forces and two more machines are to be employed immediately. With the orebody at the 100 and 200-ft. levels being developed and a large amount of high grade ore already conveyed to the dumps, a considerable portion of which runs several hundred dollars to the ton, and in some instances well over one thousand dollars, the condition of the property and outlook for the future is exceedingly bright. The results of the first operations of the renovated mill are being looked forward to with keenest interest.

Patricia Mine.

Four machines are now employed on development work at the Patricia Syndicate property at Boston Creek. According to recent advice, results being met with are proving highly satisfactory. Lateral work is being carried on at the 100 and 200-ft. levels, where either new veins or the continuation of those previously known are being developed. The steady wet weather of the past two or three months has made the matter of securing fuel a very serious problem. The swamp lands from where the wood was being obtained, have become almost impassible for horses, with the result that milling operations were suspended. This difficulty it is thought will be overcome with the arrival of cold weather.

Gold on Cotter Property.

A vein in which visible gold occurs has been opened up on the Cotter property at Boston Creek. The vein was picked up at a point within two or three hundred feet of the north-east corner of the Miller-Independence Mine. The strike of the new vein is directly toward the rich vein on the latter, and is thought to be a continuation of this vein. It has a width of from four to upwards of five feet and is dipping to the south. A diamond drill has been set up a little south of the vein and drilling has started. The first hole is being driven at an angle of 55 degrees pointing towards the north.

Work Begun on O'Donald Claims.

Work was commenced about the middle of the month on the O'Donald claims in the Boston Creek district, which are under option to Robert W. Norrington and his associates of Detroit, who also are operating the Cullen-Renaud group of claims in this district, with good results. The O'Donald is situated directly between the R. A. P. Syndicate and Patricia Mine. Although exceedingly well located and several times under option, during the course of which numbers of promising veins have been located on the surface, it has never been extensively explored, nothing more than surface prospecting, trenching and the sinking of test pits having been done.

Howie-Couchenour.

The mining plant at the Howie-Couchenour property in the Lightning River area has been in operation for the past couple of weeks and it is expected that from this time forward much better progress will be made. Difficulty in the transportation of supplies to the district up to the present time has proven a retarding factor. The shaft is down to a depth of about forty feet, at which depth the vein is about two feet in width and is understood to carry commercial values. The vein occurs in basalt formation at outcrop, while before attaining any great depth it is expected to enter the rhyolite formation which occurs in contact with the basalt at a point near the shaft. The rhyolite is dipping at such an angle as to indicate the likelihood of it cutting through the shaft a few feet below its present depth.

According to reports brought out from the Lightning River district by prospectors travelling out by way of Kirkland Lake, a promising vein has been found on the claims of Alex. Perron, situated about one mile east from the Howie-Couchenour property. The vein is reported to be about four feet in width and is said to contain visible gold.

The Lightning River Area.

The Ontario Bureau of Mines is preparing a report on the Lightning River Gold Area, covering the geology as well as the discoveries made to date. The field work has been completed by A. G. Burrows, geologist for the Bureau of Mines, and Cyril W. Knight, assistant provincial

geologist. One feature of the report will be the definite mention of rhyolite formation. Heretofore rhyolite found in this part of Ontario was usually in a more or less altered state. However, such is not the case in the Lightning River district where the rock is found in an unaltered condition and in a clearly defined body. At Telluride, Colorado, silver and gold bearing veins have been found to occur in the rhyolite formation, thus, the addition of this formation to the other list of formations in which precious metals are likely to occur in Northern Ontario, may prove of much importance. The report will not be ready for distribution for some time, but when published will prove a valuable guide to prospectors and property owners in the district.

Good Year for McIntyre.

The belated annual report of the McIntyre-Porcupine Mining Company, for the year ending June 30th, 1918, shows total profits of $811,571 as compared with $716,722 during the previous fifteen months. The company reserved $131,210 for depreciation as compared with $114,736 a year ago and transferred to surplus account $680,361, as against $725,790 in the previous fifteen months. Dividends of 15 per cent., on the outstanding capital were paid, amounting to $541,542 as against $361,028 the year before. The surplus carried forward from the previous year was $741,903, while for the current year $872,172 was carried forward. The year's surplus after dividends and depreciation was $139,000. The rate of profits on capital stock was nearly 18 per cent.

Owing to the fact that the company found it necessary to speed up development work on optioned properties with a limited staff the ore reserves show a slight decline from last year. Important new orebodies, however, were put in sight.

The outstanding bonds of the company were retired at maturity August 15th, 1918, which leaves the property free of all encumbrances. Approximately $300,000 has been spent during the past two years in plant and equipment. Diamond drilling on the Plenaurum property appears to have disclosed the presence of some good orebodies at a depth of 1000-ft. where the drift was extended from the Jupiter property and diamond drilling done.

The annual meeting of the company has been called for the 26th of October, at which time a vote will be taken to determine whether or not the company will exercise its option on the Plenaurum property.

A dividend has been declared payable by the company to shareholders on record November 15th. The disbursement, which is of 5 per cent. will be made on November 30th, making the sixth dividend to date, three of which were made during the current calendar year and three during 1917. The present disbursement calls for $180,514.15 and makes a total amount paid of $1,083,084.90, since going on a dividend basis, February 15th, 1917.

The fact that the company holds such an enviable position to-day despite the strains of war conditions and is able to disburse such liberal dividends is concrete proof of the excellent physical condition of the property, and proof of its excellent management.

GOLD PRODUCTION OF NORTHERN ONTARIO.

With only three of the larger mines producing gold, that is the Hollinger, McIntyre and Lake Shore, and three of the smaller mills running, that of the Dome Lake, Davidson, and the Miller-Independence which is just starting up, it is particularly significant to note that the gold output from Northern Ontario for the current year is slightly exceeding that of 1917. The high grade ores of the Hollinger, McIntyre and Lake Shore has saved the situation. With a return to normal conditions the lower grade mines will be a big factor. Added to this will be the mines now in process of advanced development. The following is a summary of milling facilities at the gold mines, with figures showing the approximate capacity of each:

THE PORCUPINE GOLD CAMPS.

Mine	Daily Capacity in Tons	Present Rate
Hollinger	2,800	Half
Dome Mines	1,350	Closed
McIntyre	600	Full
Schumacher	200	Closed
Porcupine Crown	140	Closed
Porcupine V. N. T.	120	Closed
Dome Lake	75 to 100	Full
Davidson	70	Full
Totals	5,355	

THE KIRKLAND LAKE GOLD CAMP.

Kirkland Lake	150	New
Tough-Oakes	140	Closed
Teck-Hughes	80	Closed
Lake Shore	60	Full
Total	430	

BOSTON CREEK GOLD CAMP.

Patricia	40	Closed
Mill Independence	40	Half
Total	80	

MUNRO TOWNSHIP GOLD AREA.

Croesus	50	Closed
Hill Gold Mines	50	Closed
Total	100	

Thus, in summarizing the gold camps, we have the following:

Camp	Tons Capacity
Porcupine	5,355
Kirkland Lake	430
Boston Creek	80
Munro	100
Total	5,960

Of this huge total, but slightly over one-third is being utilized, or some 2,102 tons daily. Therefore, the assertion that gold production from the Northern Ontario mines is being comparatively well maintained, and about on a par with 1917 is full of significance. With conditions returned to more or less normal, and milling facilities of close to 6,000 tons daily pressed into full service, it is not too much to expect that the output will closely approach $20,000,000 annually. In addition to this are a number of properties awaiting favorable conditions at which time they will proceed with the construction of mills.

Therefore, without taking into account the numerous properties with exceptionally good prospective merit, as well as the enormous stretch of as yet unexplored territory, and by dealing only with the already proven mines, the gold mining is looming large.

THE MONTAGUE MINE

Within the last few months the Montague property has been reported on by A. A. Hassan and more recently by C. A. Burdock for New York capitalists. This property appears to be the most promising at present in Nova Scotia. The present work is confined to the Skerry Lead below the flat reverse fault that cuts this vein at a depth of 65 ft. Some extraordinary pockets or enrichments have been met with in the last three years. These enrichments are associated with stringers or angulars entering the main lead, and it is the experience of those working the vein that only angulars entering from the north cause enrichments. The vein averages about four inches in width and in value two and one-half ounces per ton.

SHAFT UNWATERED AT GOLDENVILLE.

Mr. John Warner, formerly underground manager of the Boston Richardson Mine, has been appointed manager of the Goldenville Consolidated Mining Co. This company has recently unwatered the Wellington shaft which has not been in operation for thirty-five years. The intention is to sink this shaft 200 ft. and develop the Wellington Lead and the Dewar Lead, 110 ft. to the north.

USING KEROSENE OIL ENGINES IN NOVA SCOTIA.

The kerosene oil engine appears to be meeting with success as a substitute for steam power at a few of the mines. This form of power can be adapted to the Nova Scotia Gold Mines, where with narrow leads the power requirements are small and the fuel question, always serious, has become impossible. Wood, the fuel chiefly used, is scarce in close proximity to the mines and it has become extremely difficult to get men to cut it. The oil engine is being used in some of the stamp mills which, due to narrow veins and small outputs, are only operated five or six days in the month.

WORKING MOLYBDENITE AT NEW ROSS, N.S.

The molybdenite deposit at New Ross, Lunenburg County, is being developed by the Nova Scotia Molybdenum Co., Limited, under the direction of Mr. H. C. Burchell, of Windsor. The ore is associated with a pegmatite dike in the granite area that covers the western end of the province. The molybdenite occurs in rather small flakes, irregularly distributed through massive quartz containing practically no other mineral but red felspar. A shaft has been sunk 100 ft. in the orebody. Two or three small shipments of ore have been sent to the Government Testing Laboratory, Ottawa, and have shown one-half to one per cent. molybdenum sulphide.

DEVELOPING TUNGSTEN DEPOSIT AT MOOSE RIVER.

The Scheelite Mines, Ltd., is doing a small amount of development work on the tungsten property at Moose River. The mill has not been in operation for several years, but about 250 tons of 10 per cent. ore has been mined and ready to be treated. A trace of platinum and gold estimated at 0.04 oz. per ton were found by an assay made at the laboratory of the Department of Mines, Ottawa, from heavy Wilfley table fines. Sperrylite is thought to be the mineral present.

FOUR DRILLS IN OPERATION AT STIRLING, CAPE BRETON.

The Stirling zinc-copper-lead deposit at Stirling, Richmond County, Cape Breton, is being extensively drilled. Four drills are in operation and the company claim to date about 700 ft. orebody as proven. The ore occurs in altered igneous rocks and is composed of zinc blende, chalcoyprite, pyrite and quartz. Assays made at the laboratory of the Mines Branch, Ottawa, show values varying from 4 to 30 per cent. zinc with as high as 7.5 per cent. lead and 3.5 per cent. copper, also traces of gold and silver. The ore is very complex.

DEVELOPING SALT DEPOSIT AT MALAGASH, N.S.

A deposit of rock salt thought to be the first discovered in Canada is being developed at Malagash, Cumberland County. A shaft at present 105 ft. is being sunk and is already twenty feet in salt.

Bore holes have proved about 600 square feet of salt with a thickness of about 40 feet. The salt is interbedded with limestone and gypsum.

THE VOIGHT COPPER CO. CASE.

The action for $75,000 lien or damages which Edward T. Beck and Edward H. Grunder and the Voight Copper Co., instituted against Mr. and Mrs. Emil F. Voight arising out of a deal for the Voight copper claims at Ashnola, near Princeton, B.C., has been dismissed by Mr. Justice Clement of the Supreme Court of British Columbia, in a written judgment. The dismissal is without prejudice to plaintiffs' right to sue for a charge of $19,000 not dealt with under the judgment. The counterclaims of the Voights for payments under an agreement was also dismissed, but without costs. Beck and Grunder claimed to have secured an option on the claims and organized the Voight Copper Co., and to have spent $75,000 in improvements to the property when they were cancelled out by the Voights.

His lordship in his judgment finds that Mr. Beck in 1916 made it clear to the Voights that there would be no more funds forthcoming unless the Voights at once conveyed the property to the Voight Copper Co.; that the Voights were willing sellers, but refused to abandon their safeguards under their agreement and to convey until the full amount of the purchase price was paid. His lordship finds that the plaintiffs failed to carry out their part of the agreement for an active programme of development and therefore are not entitled to a lien or charge for the monies gone into the property. Mr. E. C. Mayers appeared as counsel for the plaintiffs and Mr. A. H. MacNeill, K.C., as counsel for the defendants.

SHIPMENTS TO TRAIL SMELTER.

With three-quarters of the calendar year gone, the ore shipments to the Trail smeltery, Consolidated Mining & Smelting Corporation of Canada, continue to be somewhat smaller than they were for the first nine months of 1917—the figures being 277,664 gross tons for 1917 and 245,375 tons of ore and concentrates for the same period this year. Thus 1918 is 32,289 tons behind 1917 for nine months. September of 1918 has a total of 21,765 tons received against 39,293 tons for September of last year. The chief cause of the falling off this year in ore tonnage is the fact that for several months the Rossland Mines have been worked only on a limited basis, this being due to the present conditions attending the production of gold. Rossland ores, however, contain as well a few pounds of copper per ton and its withdrawal has resulted in the operation at Trail of only one copper furnace, which is handling, almost entirely, rich custom ore. On the 1st of October last year there were 142 mines shipping to the Trail smelter while at present there are but 112 different mines on the shipping list.

HAZELTON GOLD.

Mr. Nicol Thompson, chairman of the Board of Directors of the New Hazelton Gold Cobalt Company, submitted a report of development progress at the recent annual meeting of the directors. A shipment of molybdenite ore from this property was recently made to the government sampling works in Ottawa and the gross value was $109 a ton. Another carload of the ore was being packed for shipment to the Anyox smelter, Granby Consolidated Mining & Smelting Co. The latter had been sorted more for its gold value but contained also a considerable amount of cobalt.

Recent British Columbia incorporations include, Silver Creek Mines, Ltd., Revelstoke, capital, $750,000, International Coal Co., Ltd., Vicotira, B.C., capital, $50,000.

SMELTERS ENQUIRY OPENS AT NELSON.

After marking time for several months there has been received a definite announcement as to the plans of the committee appointed by the Associated Boards of Trade of Eastern British Columbia to conduct an investigation into the matter of the treatment rates charged by the Consolidated Mining & Smelting Company of Canada Ltd. at its Trail Smeltery. The first session will be held at Nelson, B.C., on Thursday, October 31st, and is called, according to public statement, "to receive evidence from shippers of ore to Trail." That the inquiry is to begin immediately is taken as indicating that the members of the Committee have been given assurances by the Dominion Government that the expense of a thorough investigation into the grievances of the mine operators affected will be covered and that they have got authority to examine witnesses on oath, two demands which they made as a condition of their continuing the work.

MARKETS

TORONTO MARKETS.

Cobalt oxide, black, $1.50 per lb.
Cobalt oxide, grey, $1.65 per lb.
Cobalt metal, $2.50 per lb.
Nickel metal, 45 to 50 cents per lb.
White arsenic, 12 cents per lb.

Oct. 28, 1918—(Quotations from Canada Metal Co., Toronto).
Spelter, 11 cents per lb.
Lead, 10¼ cents to 10½ cents per lb.
Antimony, 18 cents per lb.
Copper, casting, 30 cents per lb.
Electrolytic, 29½ cents per lb.
Ingot brass, yellow, 21 cents; red, 26 cents per lb.

Oct. 28, 1918—(Quotations from Elias Rogers Co., Toronto).
Coal, anthracite, $11.00 per ton.
Coal, bituminous, nominal, $9.50 per ton.

STANDARD MINING EXCHANGE.

Messrs. J. P. Bickell & Co. report the following quotations on the Standard Stock & Mining Exchange, as of close, October 26, 1918:

Gold.

	Bid.	Asked.
Apex	.06½	.06
Boston Creek Mines	.27	.25
Davidson Gold Mines	.31	.30½
Dome Extension	.24	.23
Dome Lake	.15	.12
Dome Mines	12.00	11.50
Eldorado	.02	.00½
Elliott Kirkland	.36	..
Gold Reef	..	.01
Hattie Gold Mines	.57	.50
Hollinger Cons	5.20	5.10
Keora	.08	.05½
Kirkland Lake	.39¾	.39
Lake Shore M., Ltd.	.90	.85
McIntyre	1.58	1.57
Moneta	.09	.07
Newray Mines, Ltd.	.15	.13½
Porcupine Crown	.16½	.15
Porcupine Imperial	.01½	.01
Porcupine Tisdale	.01½	.01¼
Vipond	.20	.17
Preston East Dome	.04	.03⅞
Schumacher	.23¾	.23
Teck-Hughes	.35	.32
Porcupine V. N. T. Gold Mines	.18	.17
Thompson Krist	.05½	.05¼
West Dome	.11½	.11
Vacuum G.	.06	.05
Rockwood Oil, Gas	.11	.10½

Silver.

	Bid.	Asked.
Adanac Silver Mines, Limited	.09¾	.09¼
Bailey	.05	.04
Beaver Consolidated	.30½	.30¼
Chambers-Ferland	.10	.09½
Crown Reserve	.22	.19
Foster	.03	..
Gifford	.02¾	.02
Great Northern	.03⅛	..
Hargrave	.04	.03¼
Hudson Bay	..	20.00
La Rose	.40	.35
Lorrain Con. M., Ltd.	.01	..
McKinley-Darragh-Savage	.40½	.38
Mining Cororation of Canada	2.85	2.50
Nipissing	8.70	8.55
Ophir	.06	.05½
Peterson Lake	.10½	.10
Right of Way	.04½	.03¼
Silver Leaf	.01	.00½
Temiskaming	.31½	.31
Trethewey	.25	.23
York Ontario	.01	.00½

WILL USE B. C. BOG IRON ORE.

Bog iron from British Columbia will be in use shortly for fluxing purposes at the furnaces of Irondale, Wn., arrangements having been made by the owners of the property with the Pacific Coast Steel Co. The same company is using the magnetite ores of Texada Island, British Columbia, and the product of its plant is to be utilized in connection with the building of ships in the Puget Sound district. The contract entered into for bog iron calls for the delivery of 5,000 tons as soon as possible and a spur line is being run from the Pacific Great Eastern Railway to the property, which is situated near Mons, B.C., in order to provide satisfactory transportation facilities.

AN ORE SAMPLING PLANT FOR BRITISH COLUMBIA.

At a meeting of the Vancouver Chamber of Mines held recently, Hon. Martin Burrell, Minister of Mines, delivered an address in which he stated that an ore sampling plant would be established in British Columbia by the Dominion Government. He said that the matter had come before him some months ago. Mr. George Mackenzie, of the Department of Mines, now at the head of one of the parties engaged in field work in the Province, prepared a memorandum on the subject which convinced him that such a plant would be a material aid to the mining industry in British Columbia and that it also was required in the Province of Nova Scotia. In this connection the Minister referred to the high cost of the transportation of ores to the Government plant at Ottawa for treatment there, and wound up by declaring that the mining men of the West might rest assured that the matter would not be neglected.

PLACER MINING IN ATLIN DISTRICT, B.C.

Mr. Frank Mobley, member of the British Columbia Legislature for Atlin District, has returned to the Coast after spending the season in the placer mining section of the district. He speaks more optimistically than most of those who refer to the gold production of the North. While the output has been reduced 25 per cent. owing to lack of labor, according to Mr. Mobley, mining is said to be more profitable than it has ever been "because the methods of mining are improved." Formerly it was possible to make only four-ounce ground pay whereas now profits can be made out of two-ounce ground. Mr. Mobley summarizes the season's work on the various placer waterways of Atlin as follows: "Ruby Creek Hydraulic Mine has done very well; Boulder Creek, fair; at Birch Creek there has been a scarcity of water, and the output has been small; Pine Creek has had a fair season; McKee Creek did practically nothing owing to having to cut through a new channel; Otter Creek has had a good output and all the individual mines have given good returns. The general output, however, has not been more than 60 per cent. of that of former years.

ALASKA MINERS IN DANGER.

That there are several thousand miners and prospectors in the Kuskokwim River district, Alaska, threatened with famine is the effect of a report brought from the North by the captain of the power steamer, Ruby, which has just reached Seattle, Wn., in a damaged condition. This boat, which was the only one to set out with food and other necessities for the miners of the Kuskokwim, was unable to complete her journey because of heavy storms which drove her into Seward, Alaska, for shelter. The prospects of getting relief to these people, it is said, aer slim as it is believed to be too late for another vessel to make the trip.