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CIRCULATION

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ALIEN ENEMIES AND WESTERN FEDERATION DELEGATES.

Interviewed by the Toronto World last week the manager of a Porcupine gold mining company stated that inefficiency of labor at the mines has become a great problem. Many of the employees are doing very little work. They are, however, demanding higher wages. He states that alien enemies and walking delegates of the Western Federation of Miners are the chief causes of inefficiency.

The alien enemy problem is a serious one. Mine managers have in their employ many who do not deserve such considerate treatment as they are getting. Those who do a good day's work and who behave themselves properly should not have their liberties restricted unduly and should be given opportunity to earn good wages. On the other hand, it seems necessary to consider whether alien enemies who make themselves objectionable should not be taken in hand by the authorities. Loyal citizens in Northern Ontario are not likely to allow alien enemies in their midst to go much further than they have done already. It would be well, however, if our Government would take steps to curb the undesirables.

Should there not be provision made that alien enemies who are unwilling to do a full day's work in the mines may find themselves under military guard doing much more disagreeable work clearing the farms of Northern Ontario? Would it not be well also to provide that for the work of such undesirables the remuneration will not be unduly high?

While the Western Federation delegates are apparently taking advantage of the presence of alien enemies in Northern Ontario to foment trouble, it is not to be concluded that all Western Federation delegates are aliens, though many of them are. The Western Federation of Miners is an American organization with a record that stinks to heaven; but we have no reason to regard it as an enemy organization. Some of its officers are believed to be responsible for crimes worthy of Von Bissing; but among the members are desirable citizens. It is unfortunate for Northern Ontario that the miners have not banded themselves together without affiliating themselves with the Western Federation; but they have done so and therefore made it impossible for the mine managers to recognize their organization, for no manager in his proper senses will submit to the dictates of this alien federation.

There are few mining men who do not believe that miners should form organizations to treat with their employers and to further their interests in various ways. Every man who has his labor to market should strive to get as much as he can for it, and he is more likely to succeed if he unites with his fellow workers

for the purpose. A union among miners is just as necessary as a union in any other industry.

The cost of living in most mining districts is high and the wages should be high. It is therefore greatly to the advantage of the miners in Northern Ontario that they have a union to formulate demands to enable them to meet the present conditions. They doubtless consider also that they are in a stronger position owing to their affiliation with the American organization, and if that organization had a reasonably clean record they would have grounds for such belief.

Western Federation methods are not of a character to warrant success in Ontario. Intimidation and murder accompanied the last effort of the Federation in Michigan. There are so many decent citizens among the members of the miners' union of Northern Ontario, however, that it is scarcely credible that they will tolerate Western Federation methods in Canada, even if they have affiliated themselves with that organization.

It is reasonable to assume that the Western Federation officers are well posted as to the attitude of Canadians towards lawless agitators. It is also reasonable to assume that they recognize that the present is no time to try the temper of the public by typical Federation methods.

CORRESPONDENCE

STEEL ALLOYS CORPORATION.

Editor, Canadian Mining Journal:

Sir,—I enclose a prospectus of the Steel Alloys Corporation. The whole reeks of the wild-cat promoter.

What a war baby this is! It is born of Germany's "molybdenum guns smashing the impregnable fortresses of Europe" (see p. 4). And what a word for the promoter is molybdenum with the mystical MoS₂. Ricketts & Co., Inc., have reported on the holdings. In middle of winter I understand even reputable firms make mistakes at times. The report is most definite as to its body, and most indefinite as to conclusions. Entire ignorance is shown with regard to occurrence of the mineral, the mode of concentration, mode of conversion to ferro, its price, conditions and cost of mining.

What a promotion!

Steel Alloys Corporation, incorporated in Delaware, is selling stock in New York and elsewhere (I am told) above par. The property is in the backwoods of Ontario (distance lends enchantment). Representatives of the New York American and Evening Mail visited the property and Mr. Mullally states "nothing but the love of truth could cause me to endorse this security."

We do love to be fooled, and we do love to fool and not be found out.

I know nothing of the personnel of the corporation or those connected with it. The above remarks arise from what appears on the face of the report and a general knowledge of the condition of the molybdenite situation.

A READER.

We have received from the Sullivan Machinery Co. copy of a new bulletin, No. 71-C, on air lift pumping methods and equipment, and bulletin No. 75-B, dealing with the standard straight line, two stage steam driven Sullivan air compressors, class WB-2.

CHANGES IN ONTARIO MINING TAX.

It was proposed in a bill presented last month, that the tax on profits of mining companies operating in Ontario be increased from 3 to 5 per cent. It has been decided, however, that gold and silver mining companies earning less than \$1,000,000 annually shall pay the old rate.

In the case of mines, other than nickel or nickel-copper, the tax shall be three per cent. per annum on the excess of annual profits above \$10,000 and up to \$1,000,000, and in the excess above \$1,000,000 the same rates as those provided for nickel and nickel-copper mines. This is an added clause to the amendment to the Mining Tax Act. The new tax on nickel is to be five per cent. on profits from \$10,000 to \$5,000,000, with an increase of one per cent. on each \$5,000,000 profit above the first \$5,000,000.

Another new clause of the utmost importance in the bill as redrafted says: "The mine assessor shall ascertain the market value of the fine metal or other product or products, suitable for direct use in industries or arts without further treatment arising from or contained in the output of the mine.

"He shall deduct from the amount so ascertained the actual cost of marketing the metal or other products and of each process by which the metal or other product is refined or treated, as shall be established to his satisfaction by the owner, manager, etc., of the mine." He shall also make the deductions previously allowed. "And the balance after making the said deductions and allowances shall be deemed and taken to be the annual profits of the mine and the year's output for the purposes of this act."

A new clause, which will have direct effect in the arrangement hitherto effectual between the interlocking Canada Copper Co. and the International Nickel Co., provides that: "A sale (of the product of a nickel or nickel-copper mine) shall not be deemed a bona fide sale within the meaning of subsection 36, where it is made directly or indirectly by an incorporated company to another incorporated company, which is associated with or ancillary to the selling company, or which controls or substantially controls the price to be paid or credited to the selling company, for the output of the mine."

NEW CALEDONIA NICKEL PRODUCTION, 1916.

According to Le Bulletin du Commerce, February 10, 1917, page 13, the following was the production of nickel ore and matte for the year 1916. The figures for preceding years, given in the Royal Ontario Nickel Commission Report, page 245, are inserted for comparison. It will be noted that the production for 1916 shows a considerable decline, doubtless owing to lack of shipping facilities.

	1913.	1914.	1915.	1916.
Ni. ore (metric tons) . .	93,190	94,154	48,576	30,679
Ni. matte (metric tons)	5,893	5,277	5,529	4,935

The nickel ore averages less than 5 per cent. of nickel as shipped, or about 6 per cent. after drying at 100 deg. C. The matte contains about 45 per cent. of nickel and is shipped to Scotland, France and New Jersey, U.S.A., where it is bessemerized and brought up to about 80 per cent. of nickel before refining.

The shipments of chrome ore in 1916 amounted to 74,115 metric tons.

THE STRATEGIC VALUE OF CAPE BRETON ISLAND.

(With Especial Reference to the Coal Fields.)

By F. W. Gray.

When the French monarchs of the old regime selected Louisburg as the site of an impregnable fortress, proudly named the "Dunkirk of America," they had a proper conception of the strategic importance of the ISLE ROYALE, that outpost of Canada since known as Cape Breton Island.

Who holds the Island of Cape Breton commands the Cabot Straits and the Gulf of St. Lawrence, and if that same power holds also the Island of Newfoundland, the Gulf of St. Lawrence can be made a closed sea.

While the main ideas of naval strategy are the same in all times, yet to-day we think in terms of modern inventions. The advantages given to Cape Breton Island by its geographical position are at this date enhanced by the presence of large bodies of coal developed to a producing stage, by the existence of large iron and steel works and chemical plants, and by the existence in connection with these industries of commodious harbors, equipped with facilities for loading and discharging cargoes, and by rail connection with the mainland.

It may be laid down as an axiom that no modern nation can retain economic independence unless it possesses within its frontiers a supply of bituminous coal. Bituminous coal is the motive power of modern civilization. It has been truly said—and by a German military leader—that victory in the present war will go to the nation that can mine and carbonize the largest quantity of bituminous coal. No form of deep mining can be prosecuted without coal, and the absence of coal will effectually limit the mining of all metals and minerals.

Coal moreover is the source of the base of the most destructive modern explosives. Briefly, without coal the national armament would be limited to the weapons of the mediaeval knight.

As this war and its preliminaries have abundantly demonstrated, economic dependence spells sooner or later political subservience.

The importance of Cape Breton Island is chiefly this: With the exception of a strictly limited deposit of bituminous coal on the mainland of Nova Scotia, the Island of Cape Breton and the submarine territory adjacent, contains the only supply of bituminous coal in Canada east of the region of Weyburn and Estevan.

The national future of Canada, its maintenance of national integrity and political independence, is bound up with retention of possession of the coalfields of Cape Breton Island. This may seem a sweeping statement, originating in the mind of one who attaches undue importance to coal, but a little consideration of the present position of France, Italy, Switzerland, Norway, Sweden, Spain, Greece, and—to come nearer home—of Central Canada, will show that the statement is made advisedly. France and Italy would be impotent and defeated if it were not for the coalfields of Britain and the British Navy.

The position of the European neutrals to-day is dictated by the source of their coal supply. The safety of the United States lies not so much in vast territory and population as in the possession of the richest coalfields of the world, so situated as to be far removed from the

danger of foreign invasion. If Russia were not the possessor of coalfields she would be more helpless than Holland, more dependent than Denmark, because, and here is where the analogy interests Canadians, extent of territory, density of population and agricultural wealth are a menace only, if coal is absent.

In these times coal spells power. It is a necessity of nationhood.

Is it therefore too much to say that if Canada wishes to fulfil the glorious promise of her future she must guard as a precious jewel that remote Island which saw the dawning of British power and British ideals on this Continent, and stands not only as a sentinel over the broad and ancient commercial highway of the St. Lawrence, but is Canada's chief treasure house and depository of coal, a substance greater in potentialities than all the silver of Cobalt, or all the gold of Porcupine and Yukon.

As the principal British naval base in North Atlantic waters, Halifax will always retain its pre-eminence, and it only needed the actual stress of warfare to restore to by a long period of peace. It is an ice-free port, lend this Canadian port the lustre that had become dimmed in itself admirably to fortification and submarine defences, and its railway connections would be difficult for a hostile landing force to interfere with so far as the immediate hinterland is concerned. But of the two lines of railway that connect Halifax with Quebec and Montreal, one parallels the St. Lawrence river so closely as to be quite open to attack from the river and the lower gulf. The capture of Halifax by hostile forces would not so seriously impair our national defences as would the hostile occupation of Cape Breton Island. Those who have followed the course of events at Zeebrugge, on the Belgian coast, will realize what the Bras d'Or Lakes could be made as a submarine base if they fell into the hands of an enemy, and the analogy between the Dardanelles and the Straits of Canso must have struck every military observer who has ever passed through the narrow channel dominated by the imposing bulk of Cape Porcupine.

Imagine a geographical position which combines the strategic value of the Dardanelles and Gibraltar with the industrial importance of Pittsburg or Sheffield, and one has a fair and not exaggerated conception of what Cape Breton Island means to Canada, and conversely, one may deduce what nature the menace would assume were this island in enemy hands.

The potentialities of Cape Breton Island for defence, or for offense in the hands of a resourceful foe, are less or greater according to the smaller or larger concentration of industrial activities in the island, and the time seems to have arrived when the Government of Canada must take this matter under consideration in all that bears on the future of industrial expansion in Cape Breton.

Take for example the suitability of Sydney Harbor for a shipbuilding plant. The advantages of this site are too obvious to necessitate their being set out in detail; the thing is self evident. But a large shipbuilding industry in Sydney, with the provision of the dry-dock that would be a natural and necessary accompaniment, connotes at once adequate military and naval protection. Otherwise it will be foolish to multiply and concentrate still additional facilities in Cape Breton Island that would advantage an enemy in control of the island.

MISREPRESENTING CANADIAN MINING SOCIETIES.

The Canadian Society of Civil Engineers has published a memorandum addressed to the Premier that should be read by every mining engineer. It completely misrepresents the case so far as mining men are concerned and is unworthy of the Civil Engineers who are responsible for it. Some of the statements are wholly inaccurate and indicate that the authors of the memorandum are very poorly informed. Decent civil engineers will be properly ashamed of the false statements made by their committee and will, we hope, take steps to see that the statements are retracted.

It is unfortunate that an Engineering Society should be guilty of presenting such misinformation to the Government. We have a right to expect from engineers, an honest and careful presentation of the facts. The memorandum prepared by the Society of Civil Engineers is a disgrace to the profession.

THE SOURCES OF NICKEL.

The Ontario Nickel Commissioners say:

The ores that are worked primarily as sources of nickel fall naturally into three classes—(a) Sulphides, represented especially by the pyrrhotite-chalcopyrite ores of Sudbury and Norway. Ores of this class have been mined to a much smaller extent in Pennsylvania, Tasmania, Sweden, Italy, South Africa and elsewhere. The sulphides of iron and copper that are associated with the lead ores of southeast Missouri should also be mentioned as they have been worked for cobalt and nickel. (b) Silicates or oxidized ores, of which the chief occurrences are those of New Caledonia. Similar ores occur in Greece, Madagascar, North Carolina, Oregon and in other countries. (c) Arsenical ores, usually containing both nickel and cobalt, the principal working mines being those of Cobalt, Ont. Ores of this nature have been worked in Saxony, Bohemia, France and elsewhere.

Other sources of nickel are (d) blister copper, which contains nickel and other metals, (e) manganese ores of the earthy class known as wad, sometimes rich in cobalt and to a lesser extent in nickel, (f) nickeliferous iron ores, such as those of Cuba, the nickel forming a valuable ingredient in the iron or steel produced from such ores, but not being separable, commercially, from the iron.

Mr. W. R. Burge, for many years connected with the Jenckes Machine Co., Ltd., of Sherbrooke, Que., and for the past several years in charge of their Toronto branch, has severed his connection with the company and gone over to the Toronto office of the Allis-Chalmers Co., Ltd. Mr. C. S. Horton, who for nine years has had charge of the Cobalt and Porcupine branch of the Jenckes Machine Co., will have charge of the Toronto district as well, with offices in the Traders' Bank Building.

DISASTER AT PUEBLO MINE, IN WHITEHORSE COPPER CAMP, YUKON TERRITORY.

On April 6th the Whitehorse Star published the following statement of Mr. W. D. Greenough, manager for the company operating the Pueblo copper mine, situated near Whitehorse, Southern Yukon, at which a disaster occurred on March 21, causing the death of six of the miners. The finding of the Government inspectors appointed to make an investigation is also reprinted herewith.

Manager Greenough's Statement.

"On the morning of March 21st, I went to the 500 level with Mr. Berg. I was in the habit of going to the 500 level every morning to keep in close touch with the development work being done on this level. This particular morning Mr. Berg accompanied me at my request with a view of determining and locating some diamond-drill work to be done on this level. After checking up the development work and determining the directions of the proposed drill holes, I came on top.

"Mr. Berg came up to report to me about 10 o'clock a.m., that the 400 stope was taking weight, and that he had taken his men out of the stopes. I was satisfied that he had done everything that was necessary in taking his men out and attached no particular importance to the timbers taking weight. Mr. Berg then went back underground and at about a quarter to twelve o'clock sent for me to come down to the 300 level, stating that he had a cave in the mine.

"In company with Fred Porter, the engineer, I went to the 300 level and found that the west stope had caved, also ascertained that nine men were either in or behind the cave. Mr. Berg, with the day-bosses Adams and Domitrovitch, had already started work. I sent for Norman McLeod, the night boss, and the rescue work was continued as fast as possible until the evening of the 29th, when it was found necessary to abandon the rescue work together with the underground equipment and machinery, owing to the unsafe condition of the shaft.

"When the rescue work was started I cautioned Adams, Domitrovich, McLeod and Supt. Berg to be particular and report any signs of the shaft taking weight. On the 29th at noon I thought it advisable to have a careful survey of the shaft made with a view to giving the rescue party every possible protection. At noon of this day I requested Mr. Berg to take Dennis P. Dwyer and make a careful inspection of the shaft. I chose Mr. Dwyer because he was acting in the capacity of utility man and had put in more than two months actual time in the shaft on repair work, therefore he would be familiar with the shaft from the collar to the 500 level. They made the inspection and reported to me about 4 o'clock. The report was not favorable; I then called in Norman McLeod and Angus McDougal and had them go over the shaft with Berg and Dwyer. They reported at 7 o'clock that the shaft was unsafe, and recommended that the men working on rescue work should be taken out immediately. This recommendation was immediately carried out, abandoning all the underground equipment and machinery.

"In my opinion the cave was due to the action of the water passing through some slips on the hanging wall side. This action continued until it made a weak point, which might have been either below or above the 300 stope, and was unavoidable owing to the fact that it could not and was not noticed by any of the mine staff or the miners.

"Mr. Berg was particularly attentive to his work and gave practically all of his time and attention in directing the underground work. His shift bosses, Norman McLeod, Robert Adams, and George Domitrovich, were competent and experienced miners.

"The mine was exceptionally well timbered and all apparent weak points were bulkheaded. The least distance of solid ground between the 300 level and top of the workings on the 400 level was 40 ft., and at this point the ground was only mined three sets wide by two sets long, a space of 15 by 10 ft., and one of these sets was on the solid or footwall, thereby leaving a space of only five square sets well timbered.

Therefore, I do not believe that the workings on the 400 level were directly the cause of the cave."

Finding of Inspectors.

The finding of the inspectors was as under:

"After hearing the foregoing evidence the inspectors appointed by George N. Williams, Esquire, administrator Yukon Territory, under section 8, chapter 45, Miners' Protection Ordinance of the Yukon Territory, find:

"1. We consider that the cave-in, or collapse, of the stopes from the 200-ft. to the 400-ft. levels was an unavoidable accident.

"2.—The direct cause of the cave-in, or collapse, of the stopes, we believe to have been from the many watercourses, which washed away the silt, sand, etc., which acted as binders. The Pueblo mine is what is known as a 'wet mine,' and there are many watercourses throughout the property, and it is probable that water had accumulated in some unknown chamber in such volume as to cause great pressure, and this pressure would find an exit at the point of least resistance, and if such point happened to be in the hanging wall of one of the stopes it would naturally cause the cave-in, or collapse; and if the hanging wall gave way it would be natural for the pillar above, or the back, to fall in.

"3.—The system of timbering in the Pueblo mine was what is known as 'square setting,' a system which we consider the strongest and safest known. We believe that the timbering of this mine was done in a scientific and workmanlike manner, and the evidence shows that at no time was there any shortage of timber, tools or machinery.

"4.—We believe that the management of the Yukon Copper, Ltd., working the Pueblo property, used every possible and known precaution they considered necessary to safeguard the lives of the employees; in fact they went farther than the usual timbering of the mine, by using solid bulkheads of timber.

"5.—We consider that every possible effort was made by the rescue parties to rescue or recover the six unfortunate miners who lost their lives in the cave-in, or collapse, and the rescue work was stopped only when the management of the mine found the shaft to be unsafe.

"Dated at Whitehorse, in the Yukon Territory, this third day of April, A.D. 1917.

(Sgd.) "Arthur Lionel Bell, Inspector.
"Dan J. McDonald, Inspector."

It should be added that of the nine men imprisoned in the mine when the cave-in took place, three were rescued, the rescue-party having reached them by driving through rock away from the loose slide. These men were little the worse for their long confinement.

There were twenty witnesses examined at the investigation, and the testimony of all was to the same effect as that of the manager, given above, though, of course, there was much more detail obtained from so many witnesses.

* **Note.—Both these costs are likely to be reduced. It is possible that a quantity of acid may be sold to local consumers, at highly remunerative prices, and the profits, so made, might materially reduce the cost of the acid used in the manufacture of the sulphate of ammonia.

*Note.—About 25 per cent. of the Canadian bogs examined, give a return of nitrogen of 2 per cent. and upwards.

UTILIZATION OF PEAT—III.

By Louis Simpson.

(Continued from April 1st issue.)

Cost of Gas Producer Plant; Including the Cost of By-Product Recovery and Sulphuric Acid Plants.

Gas producer plant of a capacity to consume 475 tons of 65 per cent. peat per day, and consisting of 20 gas producers, all consuming 174,000 tons of 65 per cent. peat, per day; together with the necessary by-product recovery, tar recovery, and distillation, sulphuric acid, and sulphate of ammonia plants—complete....	\$500,000
Railway siding to connect works with railroad.....	35,000
Boarding house and houses for employees..	50,000

Total cost of plant with sundries... \$585,000

Note.—The cost of connecting siding with existing railroads must of necessity vary according to the requirements of the location.

Cost of Operating Gas Producer Plant, Etc.

Salaries—Management, laboratories, and office.....	\$12,000
Repairs—Wages and material.....	12,500
Power—250 E.H.P., from own power house at \$10.....	2,500
Taxes.....	3,000
Sundries.....	12,000
*Raw material for sulphuric acid.....	65,772
**Wages.....	41,800
Depreciation—10 per cent. upon \$500,000...	50,000
1 per cent. upon \$35,000....	350
2½ per cent. upon \$50,000....	1,250
	\$201,172

The following data has been obtained through the courtesy of a producer gas engineer, and may be accepted as being the results obtainable from a modern gas producer plant operating upon 65 per cent. peat, of a quality conforming to the following analysis:

	Theoretically dry.	As fired, viz., 65% peat.
Moisture.....	0.0	35.0
Volatile matter.....	56.2	36.6
Fixed carbon.....	32.4	21.1
Ash.....	11.4	7.4
Sulphur.....	3.1	2.0
*Nitrogen.....	2.0	1.3
B.Th.U., per lb.....	9100	5900
Cub. ft. of gas, per lb.....	46	30
Value of gas in B.Th.U., per cub. ft.....	130	130
Lb. sulphate of ammonia recovered, per ton.....	210	137

It is claimed that 175,000 short tons of 65 per cent. peat, having a calorific value of 9100 B.Th.U. per pound of dry peat, will, when burned in a modern by-product gas producer—the resultant gas being burned under a steam boiler, specially constructed for gas firing, the steam so raised being used in a condensing steam turbine-generator—develop 10,000 E.H.P. years.

The calorific value of a pound of dry Canadian peat varies from 9800 B.Th.U. down to 7490 B.Th.U.; but 37 per cent. of the peat from examined bogs possesses a value of 9000 B.Th.U., or over 174,000 tons of 65 per

cent. peat having a calorific value, when dry, of 9100 B.Th.U., will produce 10,440,000 thousands cubic feet of producer gas having a calorific value per cubic foot of 130 B.Th.U., which, at 3 cents per 1,000 cubic feet, totals \$313,200.

From one ton of 65 per cent. peat, which, when dry, contains 2 per cent. of nitrogen, 105 pounds of sulphate of ammonia should be recovered. Therefore, the total return from 174,000 tons of 65 per cent. peat should be 9,135 short tons.

Revenue From Sale of By-Products.

Sulphate of ammonium, 9,135 tons at \$60...	\$548,100
*Tar, 7,000 tons at \$10	70,000
Ash, 12,180 tons at \$1.....	12,180
Gas—given power plant without charge or wasted.
Total annual revenue	\$630,280

Profit and Loss.

Revenue from sale of by-products	\$630,280
Less—	
Cost of peat, 174,000 tons at 37.07 cents	\$ 64,490
Cost of operating gas producer plant.	201,172
	<hr/>
	\$265,662

	<hr/>
	\$364,618
Add net rents received from workmen's houses	2,000
	<hr/>

Total net profit after providing for depreciation

Total Cost of Plant.

Peat bog and machinery.....	\$150,000
Gas producer plant and sundries.....	585,000
	<hr/>
	\$735,000
Add working capital	40,000
	<hr/>
Total capital employed.....	\$775,000
Say	\$800,000

The profit of \$366,618 provides 45 per cent. return upon the capital. Since it may not be desirable, even were it possible, to allow such a large quantity of producer gas to escape and dissipate into the atmosphere, it will probably be necessary to find some economic method whereby this waste gas may be utilized.

Three possible methods of effecting the economic utilization of the waste gases are as follows:

(a) Burn the gas under steam boilers, using the steam so raised in some manufacturing process; or through the use of a steam turbine-generator, develop electric power. Electric power so developed could be produced at a comparatively low cost; because gas-fired boilers can be operated very economically.

(b) Pipe the gas to nearby manufacturing plants, where it can be used as fuel for the raising of steam, or for the purposes of heating, drying, or baking. In fact, the gas might be used to displace coal whenever used, directly, or indirectly, in any process of manufacture.

(c) Pipe the gas to nearby towns or cities and supply it to the citizens thereof, for heating purposes, or even for cooking; or for the purpose of developing power in small units, by the use of gas engines.

While the disposition of the gases described under

(A) could be arranged for at the least trouble, it would not be as remunerative as either of the other two methods; which, while probably involving a smaller capital expenditure, would yield a larger annual income.

A power plant of the description already mentioned, and with a capacity of 10,000 E.H.P. years at the switchboard, would cost \$500,000.

The operating cost would be as follows:

Fuel.	Nothing	
Labor.	\$ 7,000	
Repairs and sundries	3,000	
Depreciation, 7½% on \$500,000...	52,500	
	<hr/>	
Total operating cost	\$62,500	
10,000 E.P.H. years, at \$10.....		\$100,000
Operating cost as above		62,500
	<hr/>	
Profit.		37,500
		or 7½% upon the expenditure.

While the return indicated is not very great, yet, as the required capital could probably be provided by an issue of bonds, the balance to the credit of profit being sufficient to take care of the interest and sinking fund charges, it would be better to make such use of the gases rather than wasting them by discharging them into the atmosphere and thus incurring certain serious risks.

The total expenditure required—were the schemes outlined under (B) and (C) carried out—is so regulated by local conditions, that no good purpose would be served by making an estimate. Suffice it to say that the gas could be distributed at a profit, within a radius of twenty miles. This has been proven in England, where the South Staffordshire Mond Gas Co., Ltd., have shown the economic possibility of distributing producer gas—obtained by the combustion of a low-grade of coal—and where it has been sold at prices ranging, according to quantity consumed, from 5½ cents per 1,000 cubic feet to 3 cents per 1,000 cubic feet. At the latter price it is estimated that it costs the consumer less, considering the results obtained, than coal at the prices current in England before the war, which prices were lower than are current in Canada.

The cost of carting, storing and firing coal in Canada is, because of the higher wages paid, and because of the exigencies of the climate, much greater than in England, where it is usual to have coal delivered and dumped into the boiler house, day by day, fresh from the colliery, and as required. Mr. H. A. Humphrey, C.E., in Vol. CXCI, page 42, of the Proceedings of the Institute of Civil Engineers, under the caption "The Generation and Distribution of Producer Gas in South Staffordshire," described the South Staffordshire installation.

It is not claimed that every deposit of peat in Canada can be exploited with the financial results herein indicated. The results are in all cases dependent upon the following three factors:

- (1) Character of the bog: Including commercial extent and depth of deposit; good quality of peat; comparative freedom from roots, and capability of being drained satisfactorily.
- (2) Advantageous location of bog.
- (3) Efficient management.

Unless all three of the foregoing conditions are complied with, the exploitation of peat bogs will only result in failure and disappointment, as in the past history of the peat industry in Canada.

*Note.—The tar obtained from the combustion of peat is of a very superior quality.

ANNUAL MEETING OF THE MINING SOCIETY OF NOVA SCOTIA.

The twenty-fifth annual meeting of the Mining Society of Nova Scotia was held at the Sydney headquarters on the 19th April, and was attended by about seventy-five members.

The morning was occupied by a visit to the works of the Dominion Iron & Steel Company, in which the whole process of steel manufacture was followed from the ore-bins to the finished product. In the afternoon the business of the society and the reading of papers was proceeded with. The report of the treasurer showed a satisfactory condition of the society's finances.

The officers of the society for 1917 were elected as follows, the election of the president, vice-president and secretary-treasurer being by acclamation:

President, Hon. Col. D. H. MacDougall; Vice-President, Hon. Col. Thomas Cantley; Secretary-Treasurer, E. C. Hanrahan; Associate-Secretary, E. A. Saunders.

Members of Council: F. J. Sexton, T. J. Brown, J. R. McIsaac, Hon. Robt. Drummond, F. E. Lucas, H. B. Gillis, Alex. McEachren, G. D. MacDougall, Malcolm Beaton, W. H. Graham, Malcolm Blue, F. W. Gray, C. M. Odell, John Casey, R. E. Chambers, Isaac Greenwell, John Johnson.

Colonel D. H. MacDougall, General Manager of the Dominion Steel Corporation, the president-elect for a second term of two years, gave a presidential address, which will be reproduced in full in the May issue of the Journal.

The list of papers presented is as follows:

John Casey—"Safety and Mine Discipline."

W. H. Graham—"Some Notes on the Advantages of Efficient Coal Washing as Reflected in the Manufacture of Iron and Steel."

F. W. Gray—"The Strategic Value of Cape Breton Island, With Especial Reference to the Coal Fields."

Vincent McFadden—"A Proposal for the Complete Electrification of the Industries and Transportation of Cape Breton Island."

Geo. D. MacDougall—"Modern Steel Plant Economics."

C. M. Odell—Title to be announced.

Robert Robertson—"Sinking of the Jubilee Shaft, Sydney Mines."

Prof. F. H. Sexton—"Vocational Training for the Crippled Soldier."

A. J. Tonge—"Mine Fires, Their Origin, Control and Extinction."

As the business of the meeting was confined to one afternoon session there was not time to read and discuss the whole of the papers. The papers will, however, appear in the society's transactions, and it was decided by the meeting that all the papers should be open for discussion at the next annual meeting, which, it is hoped if war conditions will permit, will resume the customary form of a two days' meeting with the annual dinner.

On the recommendation of the Executive the meeting appropriated the sum of \$100 to the "Belgian Kiddies Fund" of which Mr. E. P. Mathewson of Toronto is the chief sponsor for Canada.

The meeting was actuated in its selection of the "Belgian Kiddies Fund" by a desire to honor Mr. H. C. Hoover. As a leading member of the mining profession, Mr. Hoover's record during the war has been one which reflects lustre on the profession, and the fact that he is a citizen of our latest ally is fully appreciated.

A select committee composed of Messrs. T. J. Brown,

G. D. MacDougall, Prof. F. H. Sexton, and F. W. Gray was named to look into and report on the possibility of finding some satisfactory basis of federation or affiliation with the Canadian Mining Institute.

The meeting moved that there be recorded in the society's transactions a resolution setting forth the unanimous appreciation of all the members of the society of the patriotism and self-sacrifice of the miners of Nova Scotia during the war. The resolution covered all branches of mining in the province, as it was felt that the rank and file of the profession, whether coal-miners or metalliferous miners, evinced the same eagerness to serve their country on the firing line. The meeting adjourned in the late afternoon and there was no evening session. The concensus of those who attended was that the meeting had been extremely successful.

The number of papers presented and offered did not by any means exhaust the capacity of the members and the time at the disposal of the meeting was all too short for full discussion. The society will have sufficient material in its transactions for 1917 to provide the widest scope for mature discussion at the next annual meeting, without the necessity of additional papers.

The meeting was thoroughly representative of the mining profession of Nova Scotia and was entirely made up of practical men busily engaged in the daily practice of their profession.

DETERMINATION OF MOLYBDENUM.

Directions covering the method for quantitative determination adopted by the U. S. A. Bureau of Mines follow:

Digest the sample of ore—from 0.2 gram to 5 grams, depending upon its seeming richness—with 25 to 35 c. c. of fuming nitric acid in an Erlenmeyer flask for three hours and finally evaporate to dryness. Add 3 c. c. of concentrated sulphuric acid to the residue and heat until dense white fumes are given off in quantity. Cool, dilute to 100 c. c., and filter. Wash the residue with water, allowing the wash water to run into the filtrate. Wash the residue well with dilute ammonia (1 to 3), and then with water. Make the filtrate alkaline with ammonia to precipitate the aluminum and any iron present in the original mineral. Heat, filter, and wash well with hot water. Saturate this alkaline filtrate with hydrogen sulphide to a bright cherry red color. Filter and wash with hot water. Acidify the filtrate with hydrochloric acid until slightly acid and digest until the precipitated sulphide and sulphur are well coagulated and the excess hydrogen sulphide expelled. Filter on a weighed Gooch crucible. Evaporate the filtrate to dryness in a casserole and drive off the ammonium salts at the lowest possible temperature, being careful not to heat the casserole to redness at any time. Take up the final residue with about 100 c. c. of water to which 5 c. c. of ammonia has been added. Add 10 c. c. of ammonium sulphide, make faintly acid with hydrochloric acid, and digest until the sulphide is coagulated. Filter this on the Gooch crucible used for the previous sulphide filtration. Add an amount of sulphur to the combined sulphides equal to about one-half their weight and ignite over a Bunsen burner at a dull-red heat in a stream of arsenic-free hydrogen for ten minutes. The ignition may be accomplished by using a Rose crucible cover and tube over the Gooch crucible. Weigh and repeat the ignition as before, until check weights are obtained. The weight obtained is the weight of molybdenum disulphide.

WHEN THE COAL MAN VISITED THE STEEL MAN.

Apropos of the recent visit of the Mining Society of Nova Scotia to the Sydney Steel Works.

They led him to the Blast Furnace, he gaped upward at the "bosh,"

With its head pushed through the roof-tree like some huge Buddhistic joss.

Bubbling red, a fiery river came outpouring thick and quick,

When some dusky parboiled negroes jabbed its tum-tum with a stick.

But when someone cleaned a peephole and the hot-blast gave a yell—

His predominant impression was the place resembled—
Well!

He ambled to the Bessemer, pirouetted up the stair,
They locked him in an iron shack with electric switches bare,

Then bade him through the windows squint, talking much of sulphur flame.

The rheostat sprang another notch. If he jumped, was he to blame?

Said the steel man to the coal man: "I hope you're enjoying yourself."

Whispered the coal man deep and hoarse: "It's a conning tower in—Well!"

He tottered to the Open Hearth, where they hitched a door up higher.

They stuck blue glasses on his nose, saying, "Sonny! See that fire?"

He saw that incandescent lake and thought of Ferdinand,

Of Hohenzollern William and the whole Teutonic band:
But as the ladle swung o'erhead so very "promiscuous like,"

"Now, to this neighborhood," he said, "I much prefer the pike!"

So forthwith to the Blooming Mill the victim now was led,

Astonished much the steel man gasped, for the coal man wasn't dead!

Nay, from that hour the coal man felt as he were himself again,

He understood the raison d'être of his antecedent pain.
When he perceived the glowing bars from which H. E. shells are made—

To paralyze Herr Hindenburg—he praised well the steel man's trade!

The coal man pitward bent his steps, musing on the things he'd seen.

Said he: "I much prefer the pit-bottom and the screen."

The steel man said: "I never did feel like working down a pit,"

"If I heard the timbers creaking, I would surely have a fit."

But to the citizen who wields no tool mightier than the pen,

The coal man and the steel man are both brave and worthy men.

L'Envoi.

In the cool darkness of the mine, or where the pulsing gases dance,

Where fire creates the nascent shell: men of ours we see in France.

When in the mine the blast is fired, we hear the Flanders drum-fire,

Here, the Bessemer lights the sky. There, the star-shell lights the mire.

If we fail here, our men fail there, so stand we altogether,

That we may sing, "God Save the King," the Maple Leaf forever!

F. W. Gray.

GRANBY CONSOLIDATED M. S. AND P. CO.

On March 24 the Boston Commercial published the following information relative to the Granby Consolidated Mining, Smelting and Power Co.: "Granby directors have declared a regular quarterly dividend of \$2.50 a share, the same as was paid in February. This dividend will be payable on May 1; it calls for the disbursement of \$374,963, and will make \$53 a share paid by this company since organization, bringing its total disbursements up to \$7,523,018. Granby paid \$7 in 1916, \$3 in each of the two preceding years, and \$6 in 1913."

Taking the published accounts of the Granby Consolidated Company for five fiscal years to end of June, 1916, it is seen that the dividend payments have been as under:

For year ended	Per share.	Total.
June 30, 1912	nil	nil
June 30, 1913	\$3	\$449,955
June 30, 1914	\$6	899,000
June 30, 1915	nil	nil
June 30, 1916	\$6	899,911

Total for five years \$2,249,767

Payments during the fiscal year ending June 30, 1917, will total \$1,349,866.80 (less some small amounts that will be held in the company's Liquidator Dividend account, there being some fractional parts of shares that necessitate such adjustment in the accounts each year, and which are the cause of the difference between the two fiscal years of 1914 and 1916 (shown in the table above), in the following quarterly disbursements:

Payable	Per share.	Total.
August 1, 1916	\$2.00	\$ 299,970
November 1, 1916	2.00	299,970
February 1, 1917	2.50	374,963
May 1, 1917	2.50	374,963

Total for fiscal year ending June 30, 1917. \$1,349,866

It will be seen, therefore, that the company's dividend disbursements in the current fiscal year will be equivalent to 60 per cent. of the grand total for five fiscal years ended June 30, 1916. This simple statement, however, does not do justice to the financial position of the company, since its net profit for its last fiscal year, in which it sold 42,198,083 lbs. of copper at an average price of \$0.2204 a pound, was \$3,819,295, while this year the average price will doubtless prove to have been higher, with, of course, some increase in costs, wages and materials being higher also.

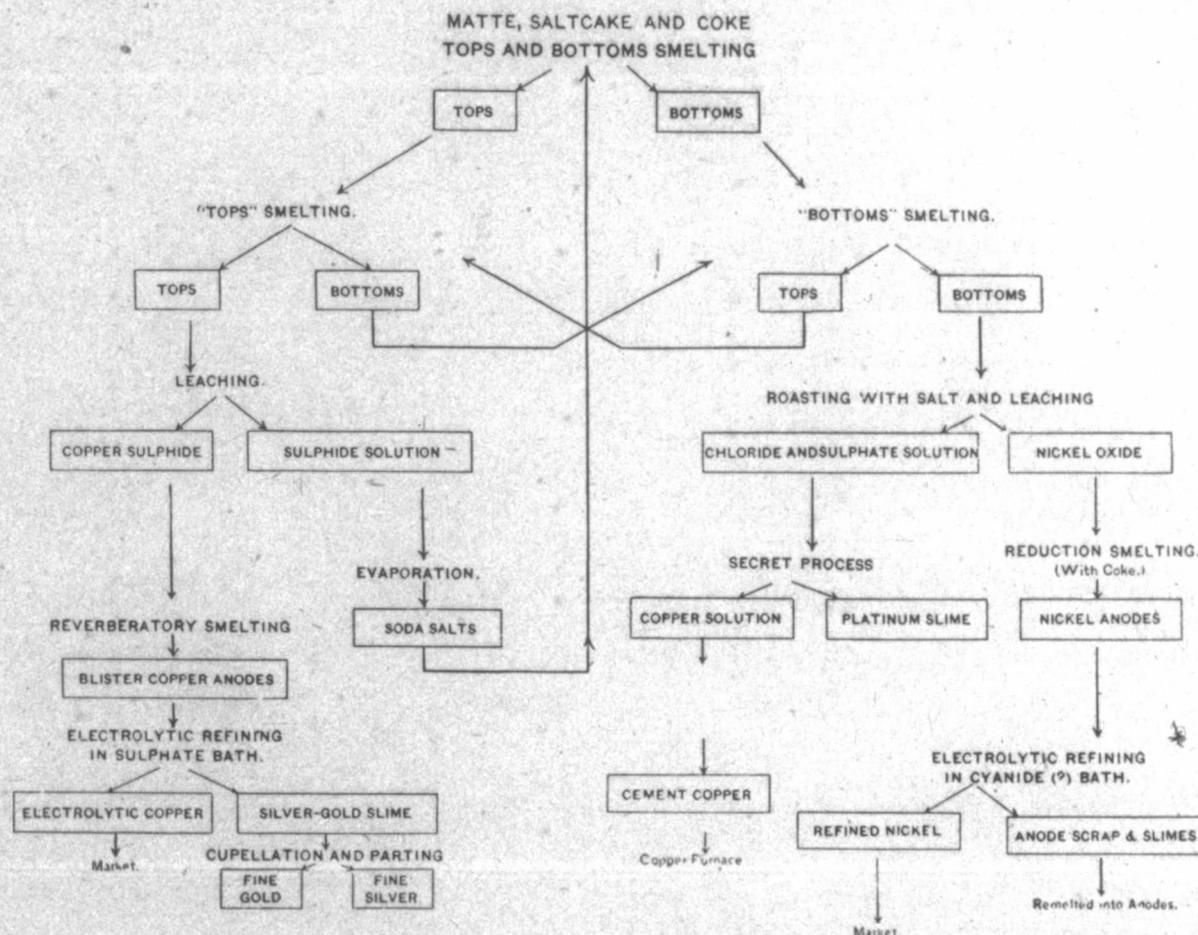
THE ORFORD PROCESS OF REFINING NICKEL.

There are three processes, which may be described as standard methods, in use for the refining of nickel from ores like those of Sudbury. These are (1) the Orford process, employed for the treatment of the matte produced by the Canadian Copper Company, (2) the Mond process, and (3) the Electrolytic process. For all these processes, the production of a matte is essential. Matte is made by substantially the same method for all three.

The Orford process is the oldest of the three. It is cheap to operate, and permits of a large output in a confined space, but it does not recover more than a small proportion of the precious metals present in the ores, and there is reason to think that losses of nickel

it contains, it can be smelted in a reverberatory furnace, for the production of metallic nickel. The leaching processes result in the production of a considerable amount of copper sulphate and nickel sulphate. The former is treated for the production of metallic copper, but the latter is, to a considerable extent, crystallized out, and either treated electrolytically for the production of high grade electrolytic nickel, or sold as nickel sulphate or as the double sulphate of nickel and ammonium for electro-plating and other purposes.

The Orford process, being partly chemical, produces large quantities of noxious effluents. At the Bayonne works over 150 million gallons are annually run into the sea. The plans for the new works at Port Colborne, Ontario, provide for the elimination of this discharge. —Report of Ontario Nickel Commission.



and copper are heavier than in either of the other two processes.

In the Orford process, the matte is smelted with sodium sulphate and carbonaceous matter, such as coal or coke, so that a large proportion of the copper is separated as a double sulphide of copper and sodium, when tapped from the furnace; this separates as an upper layer above a matte which is much richer in nickel and poorer in copper than the original matte. A repetition of the smelting of this highly nickeliferous matte results in a further separation of copper in the same way, so that finally, the bulk of the copper is obtained as a slag (which is smelted to produce blister copper) together with a matte so rich in nickel and so poor in copper that, after being roasted and leached with acid, to remove the remainder of the copper which

INTERNATIONAL COAL AND COKE CO.

The annual meeting of shareholders in the International Coal and Coke Co., operating coal mines near Coleman, Southwest Alberta, was held in Spokane, Washington, on March 22. Mr. A. C. Flumerfelt, of Victoria, B.C., was re-elected president of the company; Mr. H. Davidson, of Vancouver, B.C., vice-president; Mr. A. L. White, of Spokane, second vice-president; and Mr. W. G. Graves, also of Spokane, secretary. These officers, with Mr. C. S. Houghton, of Boston, Massachusetts, and Mr. R. W. Riddell, of Coleman, managing director, constitute the board of directors. Mr. O. E. S. Whiteside, of Coleman, continues as manager of the company, and Mr. John McKeagan, also of Coleman, is treasurer.

**BRITISH AMERICA NICKEL CORPORATION,
LIMITED.**

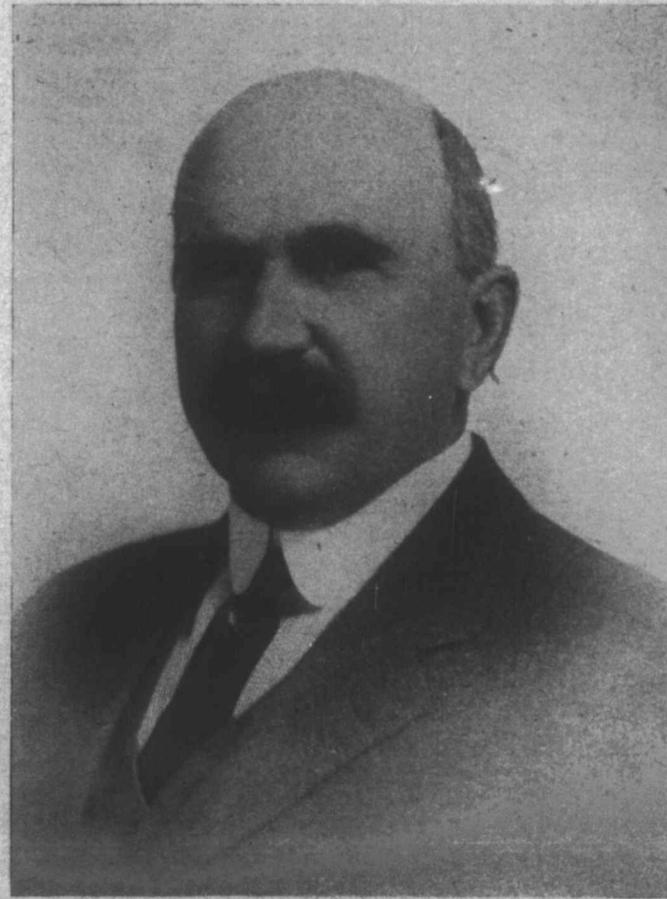
The British America Nickel Corporation, Limited, a strong British-Canadian company, which is controlled by the Imperial Government, has broken ground for the construction of large smelting and refining works near Sudbury for the production of refined nickel. The operations of the company, as contemplated at present, will be unique in the history of the industry in the important particular that the mining, smelting, and refining of its ore will all be conducted not only within the province, but within the Sudbury district; and for this and other special reasons the progress of its undertaking has been followed with unusual interest. The following information is given in the Report of the Ontario Nickel Commission:

The company owns approximately 17,600 acres of mineral land which include the following copper-nickel properties, namely: The Murray, Elsie and Lady, Violet mines; the Gertrude mine; the Whistle and Wildecat mine; the Victor and Blue Lake group; Nickel lake; and what are known as the Falconbridge properties. All its nickel holdings were bought from the Booth-O'Brien company called The Dominion Nickel-Copper Company. It has acquired the exclusive rights for North America in the electrolytic process for producing metallic nickel, known as the Hybinette process, which the company will use for refining the Sudbury ores. This process has been in practical operation for some years at the works of the Kristianssands Nikkelraffineringsverke at Kristianssands in Norway. It was first employed in America at the plant of the North American Lead Company at Fredericktown, Missouri, in connection with a lead-copper-nickel property there, and it was indirectly through this connection that the promoters of the present company first got in touch with its owners for the subsequent purchase.

The late Dr. F. S. Pearson, the well known financier of New York and London, took an active part in the protracted negotiations and series of transactions which finally resulted in the purchase of all the Ontario assets in the Dominion Nickel Copper Company, and of the rights in the Hybinette process. In September, 1912, an option was obtained on all the properties and assets in Ontario of the latter company, which included a short line of railway called the Nickel Range Railway, for a large purchase price, of which \$1,000,000 was payable in cash. After considerable exploration work which established new orebodies, especially on the Murray-Elsie properties, the option was taken up, and an agreement for purchase concluded between the owners and Pacific Securities, Limited, an office company incorporated under the Dominion Companies Act for the purposes of the transactions in hand. It is said that \$800,000 was spent in diamond drilling on the various properties.

In the meantime the Hybinette electrolytic process had been carefully investigated under option by a number of experts who studied its working in the refinery in Norway, and reported favorably upon it as an efficient process for Sudbury ores adapted to operation in Canada. By agreement, dated December 12th, 1912, with the Norwegian owners, the exclusive rights for North America in the patents and processes were granted to Pacific Securities, Limited, and on February 27th, 1914, all the rights so obtained were transferred to this company.

The company is incorporated by letters patent under the Dominion Companies Act, dated July 2nd, 1913, with full powers for all primary and incidental purposes connected with the mining, treatment, marketing and sale of ores, minerals, metals and their products, and an authorized capital of \$20,000,000. The whole of the capital has been issued, and \$6,000,000 of 6 per cent. first mortgage bonds, secured by a mortgage to National Trust Company, Limited, has also been issued. Of an authorized issue of \$10,000,000 of 6 per cent. debenture stock, \$3,500,000 has in addition been issued to date, making a total bond and stock liability at present of \$29,500,000. A special Act of the Dominion Parliament (4-5 Geo. V., cap. 132) empowers the company to issue share warrants and redeemable preference shares. A second Act of 1916 (6-7 Geo. V., cap. 57) authorizes a board of twenty directors, if desired,



E. P. MATHEWSON.
General Manager British America Nickel Corporation.

and provides that the majority of directors shall be British subjects. No share warrants or preference shares have as yet been issued.

The promoters were engaged in financing the enterprise in London when Dr. Pearson was drowned on the Lusitania in May, 1915. Dr. Pearson's death and the financial stringency following the outbreak of war arrested progress for a time, but the negotiations in London were subsequently resumed by his associates and brought to a successful conclusion. The company was so fortunate as to secure the material co-operation of the Imperial Government, in the form of substantial advances in money and a long term contract for a large annual supply of nickel from its Canadian works. It is understood that \$3,000,000 of bonds, or one-half the total issue, and \$14,500,000 of the \$20,000,000 of

the issued capital stock are held in trust by the Public Trustee for the Imperial Government. The shareholders of the Kristianssands company, which has been operating the Hybinette process in Norway, have considerable holdings of the stock, and, with this exception, the whole of the capital stock and of the securities is held by British subjects.

The first intention of the company was to follow the plan of its vendors, and build its smelter at the Whistle mine as the main source of its ore supply. The prospecting of the Murray properties disclosed such large reserves, reported at 8,500,000 tons of ore, which is said to be increasing in quantity and improving in nickel contents with depth, that it was decided to locate the smelter plant at this point, which has other advantages for the purpose. There is railroad connection with the main line of the Canadian Pacific Railway



E. HIBBERT.

Mine Superintendent British America Nickel Corporation.

and with the Algoma Eastern Railway, the benefits which will be derived from the proximity of the town of Sudbury. Until quite recently, the company contemplated locating its refinery at some other point in the province convenient to electric power, probably in the Welland or Niagara district, but it has now been decided to build both the smelter and refinery side by side on a site about a mile south of the Murray mine. There is a force of men at work preparing the site for this plant. The specifications and estimates for buildings and machinery are being prepared, and tenders will be called for shortly.

The critical question of power supply has not been definitely settled at this date, but the officials of the company have had conferences with the municipal council and board of trade of Sudbury, from which

they report that encouraging advance has been made towards procuring the necessary power from the French river through the Ontario Hydro-Electric Commission. The negotiations contemplate the supply to the company of 8,200 horsepower for the first unit, with further supply to be provided within a year from the commencement of operations for the additional units that will be required. If the necessary arrangements to that end are concluded, the company will rely on the town of Sudbury to supply the housing for its employees, and provision has already been made for transporting the operatives from the town to the mine and plant when operations are commenced. There are 50 men working at the Murray mine, in which the shaft is down 700 ft., and when the limit of the present equipment is reached, a hoisting engine driven by electricity, together with the rock house and sorting plant, for which plans have been prepared, will be installed. It is said that diamond drilling has proved approximately 12,000,000 tons of nickel-copper ore on the several properties, and that when the plant is completed the works and properties of the company will represent an investment of \$10,500,000. The amount to be expended in plant and machinery is given as between \$4,000,000 and \$5,000,000 and the company expects to produce 6,000 tons of refined nickel a year.

The officers of the company are as follows: President, James H. Dunn; vice-presidents, J. Frater Taylor, W. A. Carlyle; secretary-treasurer, W. H. Coade; general manager, E. P. Mathewson; directors, Alan Garret Anderson, H. Malcolm Hubbard, London, England; Admiral Borresen, Sam Eyde, V. N. Hybinette, Norway; E. R. Wood, J. S. Lovell, Robert Gowans, R. Home Smith, Toronto. The president is a Canadian capitalist residing in London, England. Mr. Carlyle, late professor of metallurgy in the Royal School of Mines in London, was for some time manager of the Rio Tinto copper mines in Spain. Mr. Mathewson was manager of the reduction works of the Anaconda Copper Mining Company until his connection with this company. Both are Canadians by birth, and Canadian metallurgy is fortunate in receiving this accession of administrative and technical skill.

Supplementing the information contained in the report of the Nickel Commission is the following from the "Sudbury Mining News" account of a meeting held in Sudbury on April 16th, 1917:

The question of the extension of time to the Sudbury Flour Mills Company in regard to the maintenance of their temporary power line running through the town from the substation of the Wahnapiatae Power Company to the flour mills, or the removal of the said line to a location outside of the town, discussed at the last regular meeting, came again prominently before the board of Monday night, when President Carlyle and General Manager Mathewson, of The British America Corporation, and President Mather, of The Sudbury Flour Mills Company, were present and delivered short addresses on the subject.

Mr. Mathewson said in part:

You may be surprised that the British America Corporation has not done more to have the Hydro-Electric Power in Sudbury. But we found that guarantees would have to be given to The Hydro-Electric Commission against losses to the commission. The Federal Government had refused to furnish the guarantees asked for. The British Government, with whom the British America people are under contract for the supply of

nickel products, was then consulted with, and they agreed to furnish the required guarantees during the period of the contract; but these guarantees had not yet arrived. The British America Corporation had strong hopes of the guarantees arriving at any time now, when the full energies of the corporation would be set in motion for a move forward.

"At any rate, the British America people were going right ahead with their work of development," Mr. Mathewson continued. At first it had been intended to start with one unit on a basis of 5,000 tons per annum, but now it had been decided to go in on a larger scale. Two units instead of one would be employed, with double the tonnage per annum. Diamond drilling would be in operation this week, and other mine development work was proceeding satisfactorily. They were employing 130 men at the mine at the present time, but eventually The British America would have a force of fifteen or sixteen hundred men engaged at the works. They intended that these men should live in Sudbury, and they would be looking to the town for assistance in providing the men and their families with houses and homes.

PACIFIC COAST COAL MINES, LTD.

At the annual meeting of the Pacific Coast Coal Mines, Ltd., held in Victoria, British Columbia, last month, directors were elected for the ensuing year, as follows: Mr. James Carruthers, Montreal; Mr. J. H. Paine, Montreal (presently of Victoria); Sir Thos Tait, Montreal; Mr. C. A. Barnard, K.C., Montreal; Mr. A. E. Plummer, Vancouver, B.C.; Mr. Paul Galibert, Montreal; and Mr. Talbot Schmuck, Victoria. At a subsequent meeting the new board appointed the following officials: President, Mr. James Carruthers; vice-president and managing directors, Mr. J. H. Paine; secretary-treasurer, Mr. Talbot Schmuck.

The company, which owns and operates the South Wellington and Morden collieries, both situated a few miles south of Nanaimo, Vancouver island, B.C., reports a healthy demand for coal with a decided tendency for the market to broaden, the feeling being that conditions should in the current year show a very satisfactory improvement over those of the past few years.

HILLCREST COLLIERIES.

At the annual meeting of the Hillcrest Collieries, held in Montreal, Quebec, the annual statement was presented. This showed that net profits, after deducting all charges, were 2.5 per cent. on the common stock, as compared with 3 per cent. the previous year. The total operating profit, including miscellaneous income, amounted to \$91,257, as compared with \$95,706 in 1915, there having been a decrease of \$4,449. Bond interest at \$16,250 and preferred dividends at \$49,399, were unchanged. Net profits were \$4,449 less than in 1915, the amounts for the two years having been \$25,608 in 1916 and \$30,057 the year before. The amount written off the rest and contingency account was \$15,000, whereas no corresponding deduction was made in 1915, and notwithstanding this there was added to Profit and Loss the sum of \$10,608 as compared with \$30,057, the decrease having been \$19,499. The amount at credit of Profit and Loss at the end of the year was \$170,617, against \$160,009 brought forward at the end of the last year, and \$129,952 at the end of 1914. The company's colliery is situated a short distance east of Frank, in Southwestern Alberta.

PASSING OF THE B. C. COPPER CO.

On April 5th, the Greenwood Ledge published the following news paragraph: "The Canada Copper Corporation, Limited, N.P.L., on April 1st purchased the properties and other assets, and has assumed all liabilities and other obligations, of the British Columbia Copper Co., Ltd. The Canada Copper Corporation, Ltd., will continue the mining and smelting operations of the British Columbia Copper Co. in British Columbia under their existing organization."

This final outcome of the relations between the two companies will not surprise those at all familiar with the financial position of the British Columbia Copper Co., for in the balance sheet of the Canada Copper Corporation, as of December 31st, 1915 (the corresponding statement for last year has not yet been received), that company's assets were shown to include "Investment, B. C. C. Co. stock, \$3,000,000," and "Notes receivable, secured by mortgage, \$460,000," the latter being a liability of the British Columbia Copper Co. to the Canada Copper Corporation.

In the summer of 1896 the late Col. John Weir, of New York, and Mr. Frederic Keffer, who had been connected with the Ohio State University up to a year or two before that time, arrived in the Boundary district, the Colonel representing himself and friends prepared to put money into mining ventures in that part of British Columbia. Three properties were bonded for as many syndicates, and Mr. Keffer was left in charge of preliminary exploration work. The bond on the Big Copper, in Copper camp, six miles west of Greenwood, was not taken up, but work on the Mother Lode, in Deadwood camp, three miles from Greenwood, disclosed the occurrence of a big body of copper ore, so that the Boundary Mines Syndicate acquired this property. The third venture was the No. Seven, in Central camp, two or three miles southeast of Boundary Falls; eventually the No. Seven Mining Co. was organized and it developed a vein of gold-quartz ore, but by reason of lack of capital operations were not continued and finally the Consolidated Mining and Smelting Co. bought this property and for several years worked it for the ore suitable for metallurgical purposes at the Trail smeltery obtainable from it.

The Mother Lode, however, was the 'big bonanza' of the three, and it was in the spring of 1897 that the writer of these notes paid his first visit to it, in company with Mr. Keffer, who had by that time driven an adit 185 ft., through an orebody for about 140 ft. of that length. The course of the adit, however, having been diagonally across the orebody, it was estimated that the right-angle width of the ore was something more than 100 ft.

Adjacent claims having been secured, Mr. Keffer's New York principals in March, 1898, organized the British Columbia Copper Co., Ltd., under the laws of West Virginia, with an authorized capital of \$3,000,000 in shares each of \$5 par value. It is remembered that this company was the first to put in a power plant of considerable size and capacity in Boundary district, and the freight charges on that plant and machinery from Marcus, Washington, on the Spokane Falls and Northern railway, to the mine in Deadwood camp were heavy indeed. Later, a much larger plant was installed and the writer was present at the starting of the

big compressor (supplied by the Jas. Cooper Mfg. Co.) that, with the large steam hoist, was then the pride of that part of the Boundary district.

An enormous quantity of ore having been first exposed, and a big "glory hole" opened for the expeditious and economical mining of the ore, smelting on a comparatively large scale quickly became the largest industry in that neighborhood. The company's smelting works at Greenwood were designed and constructed in 1899-1900 by Mr. Paul Johnson. They were planned with a view to eventual enlargement to a maximum treatment capacity of about 1,800 tons of copper ore a day. Their capacity, with the two first-constructed blast furnaces operating, was between 700 and 800 tons a day. The first furnace was blown in on February 17th, 1901, and construction of the second was completed in the earlier half of 1902. A Bessemerizing plant was added in 1904, this having been designed and installed by Mr. J. E. McAllister, who in 1903 succeeded Mr. Paul Johnson as superintendent of the smelting works. In 1907 the plant was remodelled, with an increase to a smelting capacity of 1,700 tons a day, and in 1910 there was a further enlargement to the present treatment capacity of 2,200 tons a day. After Mr. Keffer had been acting manager for a while, on Mr. McAllister's retirement, Mr. Oscar Lachmund, the present general manager for both the B. C. Copper Co. and the Canada Copper Corporation, was appointed, Mr. Keffer resuming his duties of geologist and engineer to the company.

Canada Copper Corporation.

The Canada Copper Corporation was organized in March, 1914, with an authorized capital of \$5,000,000, divided into 1,000,000 shares of \$5 par value. At the time of the organization of the company the issue of \$1,000,000 six per cent. convertible debentures was authorized, and under the plan of organization, shareholders in the British Columbia Copper Co. were invited to subscribe for the debentures and at the same time to exchange their shares for shares in the Canada Copper Corporation. The last published balance sheet of the latter company showed that debentures of a total value of \$600,000 had been issued.

For years Mr. Keffer had been giving attention to the prospective ore resources of Copper mountain, within a dozen miles of Princeton, Similkameen. The British Columbia Copper Co. about a dozen years ago acquired an interest in the Sunset mine, in that neighborhood, and did some development work in it, but at that time the district was without railway connection, and operations were discontinued. Several years ago, however, Mr. Keffer succeeded in inducing his company to take an option of the Voigt copper property, in the neighborhood of Copper mountain, and later to bond a number of claims on the mountain. The eventual exhaustion of the ore deposits on the company's Mother Lode group and other properties near Greenwood it had been operating, having been foreseen, efforts have been largely concentrated on the development of the Copper Mountain claims, of which a large group, not including the Voigt property the purchase of which was not gone on with, has been secured and diamond drilling and underground mining have developed ore to an estimated total quantity of 10,000,000 tons or more, this including "probable" and "possible" ore.

Doubtless the Canada Copper Corporation will marshal all its resources with the object of turning to profitable account the big reserves of copper ore extensive exploration has indicated occur there. Much more money will be required to be expended before it will be practicable to obtain a large return from this source, there being needed further development work, provision of power and ore reduction, transportation, and other requisite facilities, but it may be expected that having gone thus far, the Canadian Copper Corporation will carry its enterprise to a successful issue. Meanwhile it is "valed British Columbia Copper Company" with much regret, which many old Boundary district residents will sincerely share.

OBITUARY.

Among the Canadians who fell in the battle for Vimy Ridge was Gunner Fred Hore, brother of the editor of the "Canadian Mining Journal." Gunner Hore enlisted in August, 1914, and during the past two years had been through many battles, from St. Julien



to the Somme, without injury. He died of wounds at a casualty clearing station on April 10th, 1917, the day after the launching of the attack on Vimy Ridge.

Mr. Hore was born in Hamilton, the youngest son of the late Frank Hore, of F. W. Hore & Sons, Hamilton. He is survived by a sister and two brothers.

A new permanent camp is to be established at Ikeda bay, Moresby island, of the Queen Charlotte Group, for the men to be employed at the Ikeda copper mine. It is reported that it is planned to erect a two-storey bunkhouse to provide accommodation for about 100 men, a cookhouse, three cottages, blacksmith shop, powder-house and other buildings, the estimated cost to be about \$10,000. A short time ago the mine was visited by Mr. W. G. Norrie, superintendent of the Silver Standard mine, near Hazelton, Omineca mining division, who is to direct mining work at the Ikeda.

SPECIAL CORRESPONDENCE

NORTHERN ONTARIO.

Hollinger.

If present plans of the Hollinger Consolidated Mining Company at Porcupine are brought to a successful conclusion, the big mine's capacity will be increased by 1,000 tons per day by the latter part of June. The capacity of the mill at the present time is a little less than 1,800 tons per day of twenty-four hours. The net profits from the treatment of Hollinger ore run close to \$4.50 per ton. With the mill treating 2,800 tons per day, or 80,000 tons every four weeks, the net profits should be \$360,000. When the installation of the present addition of 1,000 tons per day to the plant is completed, it is the intention of the company to add still another 1,000 ton unit to the big mill, which, when completed would raise the capacity to 3,800 tons per day and allow of the treatment of 100,000 tons per month, which would provide a net profit of \$450,000 every four weeks. This would show a surplus of over \$200,000 above dividend requirements on the old basis of 1 per cent. every four weeks. This tremendous profit would aggregate \$5,850,000 per annum, and would provide a surplus over dividend requirements at the rate of 1 per cent. every four-weekly period, or \$2,652,000 per annum.

At present, shortage of labor makes the early realization of Hollinger plans unlikely. Gross profits for the four weeks ended March 25th were \$210,749.

Davidson.

It is considered by the Davidson Porcupine Mines Company, that the developments at the 300-ft. level warrant the installation of a mill and plans for same are being considered. Vigorous drilling operations will be carried on from the 300-ft. level. The first hole was started last week and should encounter the ore-body located on the 300-ft. level at about the 500-ft. depth. A crosscut has been driven to the north and a station cut at the extreme end of same to allow of drilling operations being carried on under present workings. It is said that 5,000 ft. of diamond drilling will be done, and the holes will be sunk at various angles and to different depths. By this method the company will prove their property at depth with the least possible delay.

Boston Creek.

Interests closely associated with the Boston Creek Mines at Boston Creek, have acquired an option on the Giovinazzi claims, which tie on to the Boston Creek mining claims at the north of their property. A number of good veins have been uncovered on the Giovinazzi claims from time to time and it is understood a number of these veins carry free gold.

Porcupine V. N. T.

Developments at the Porcupine V. N. T. are being prosecuted with all possible speed. The main shaft, which is on the North Thompson side of the property, is down six hundred feet and has been timbered all the way. At this point a large station has been cut and a crosscut has cut the main vein about 50 ft. from the shaft. The vein will be drifted on to a point under the winze on the Vipond property, where a raise will be made to connect with the winze. This will add more than one advantage to the mine, providing better ventilation and at the same time developing a large amount of ore. The length of this drift will be approximately 900 feet. The ore from this working will be

hoisted on the North Thompson side of the property and trammed over to the mill on the Vipond side, a distance of about 800 ft. It is reported that the mill, which now has a capacity of 140 tons per day, will perhaps be increased in the near future. All ore going to the mill at the present time comes from the dump on the North Thompson property, and it is estimated that there is enough ore in this dump to keep the mill running for a period of three months without raising any more from underground. There is a large amount of ore blocked out underground on the property. A temporary suspension of underground work was necessitated by lack of power recently, but this difficulty has now been overcome.

Gowganda.

The work of construction on the dam at Hangingstone Falls is being rushed with all possible speed, in an effort to get the work sufficiently far ahead to meet the spring break-up. The South Bay Power Company has twelve teams hauling material and supplies in over the Elk Lake-Gowganda road. The recent cold weather has greatly increased the chances of the company to be in a position to contend with the spring flood. The work of driving the 6,500-ft. tunnel, it is understood, will be left until early in the summer.

Wisconsin.

The plant for the Wisconsin Mining Company in Skead township, has arrived at the property, being taken in over the twenty-six mile road from Englehart. It is the intention of the management to wait until the frost is out of the ground before commencing the erection of the plant.

Power Trouble Over.

The March output of the Porcupine mines will show some falling off, owing to trouble at the power house on the Matagami river, caused by the break-up of the ice. The trouble has been overcome, however, and the supply of power is again ample. Some idea of the importance of this power supply to the Porcupine mines may be realized when it is known that the Hollinger alone requires about 5,000 horsepower to run the mine.

Sesekinika.

The Sesekinika Gold Mining Company, in Maisonville township, is meeting with good results in the development of the property. A number of narrow veins have been encountered and test pits sunk, with the result that some spectacular showings of gold are to be seen. The coming summer will see considerable activity in this section of the gold area, stimulated by the results obtained on this property.

Night Hawk.

The Porcupine Night Hawk Mining Company, in the township of Cody, has installed a small plant, consisting of two boilers and a compressor, which is now in operation. Sinking from the 50-ft. level of the old shaft is being continued. This property is located about two miles from Gold Island, which was discovered the year before the rush to Porcupine, and was the lode-stone which drew prospectors in the direction of Porcupine lake at that time.

Slade-Forbes Asbestos.

Plans are under consideration for the installation of a small mill at the Slade and Forbes Asbestos Mining Company's property in Deloro township. While results at the mine have been very satisfactory lately,

it has been found to be unprofitable to ship the ore out of the country for treatment. In the meantime work at the property has been discontinued.

Boston Creek.

About forty men are at present employed on the Boston Creek property at Boston Creek, and it is understood that this staff will be materially increased in the near future. The building operations to accommodate a larger number of men are almost completed. The winze which was reported recently to have reached the 300-ft. level will be continued to the 400-ft. at once. Results are said to be very encouraging.

Miller Independence.

Underground work at the Miller Independence at Boston Creek is to be speeded up to meet the requirements of the new ball mill which is being installed at the present time. It is anticipated the company will be treating about thirty tons per day by the first of July. This is the first mill to be installed in the Boston Creek district, and results will be watched with more than usual interest.

A Record Shipment.

A record for a single car of ore sent out from the Cobalt camp was recently made by the Mining Corporation of Canada. The car contained 67,462 pounds of ore from which 241,431 ounces of silver were recovered. With the price of silver above 73 cents per ounce, the shipment had an approximate value of \$177,000. This works out at the rate of 7,157 ounces to the ton of ore.

McIntyre.

Owing to power troubles the McIntyre production for month of March although the highest in the mine's history did not come up to expectations. The mill treated 14,377 tons of ore from which \$147,795 in gold was recovered. The mill heads were slightly above the average at \$10.82 per ton. The mill ran slightly more than three quarters of capacity averaging 464 tons of ore per day. Not more than 54 cents per ton was lost in the tailings. Power difficulties have been overcome and it is anticipated that the April production from the mine will constitute a record. The plant is now running at capacity and treating well over 500 tons per day. Development work at the 1,000-ft. level of the property proves the orebody at this depth to be one of the largest and highest grade bodies in the Porcupine Camp. The drift is already nearly 1,000 feet long, with an average width, so far determined, of twenty-six feet which has a gold content of over \$16 per ton. The vein is located in the basaltic schist in the north contact of the Keewatin and porphyry formations. This contact extends for a distance of one mile over McIntyre property and southwest into Hollinger. It is along this contact that much Hollinger ore is being mined.

Schumacher.

Material for the new mill addition to the Schumacher at Porcupine, which is to be a duplicate of the unit of 140 tons capacity already in operation, is now on the ground. Orders for the machinery have been let, but construction will not begin until all details are complete. Twelve machines are working on underground development at the present time, eight are breaking down ore and four are working on exploration and development. Costs during the year have averaged \$4.30 per ton with an additional 40 cents per ton for mint charges. When it is known that Schumacher ore has been of an average grade of \$6 per ton it will be plainly seen that the company has only a small mar-

gin of profit. During March 3,400 tons of ore was treated and a net profit of \$3,500 shown. With pre-war conditions prevailing the Schumacher could make handsome profits on its \$6 ore; but under present conditions, there is very little encouragement to operate this property. The vein a few feet north of the No. 4 shaft was recently cut at the 300-ft. level and the diamond drill core proved the existence of a vein eleven feet in width, with higher values than the average of the mine. The diamond drilling has been discontinued for the time being.

Kenogami.

The machinery for the small steam plant at the Lucky Baldwin property, near Kenogami station, is now on the ground and will be installed at an early date. The shaft is now down seventeen feet and considerable free gold has been encountered in the main vein which is three feet in width and well defined. Gold values are also found in a number of stringers running off from the main vein and it is thought likely the orebody will widen out with depth. It is the intention of the company to sink to the 300-ft. level as soon as possible. Fifteen men are employed at the mine.

Peterson Lake.

The first quarterly statement of the Peterson Lake Mines at Cobalt since the new management took hold of the property was not a very satisfactory one from the viewpoint of the shareholder as it was found advisable to pass the regular dividend. The year's report by Mr. Frank Loring, held many optimistic views regarding the possibilities of the mine. Owing to certain portions of the workings being filled with water it was impossible for him to make a complete statement of the conditions. Mr. Loring advises putting a number of raises to the surface on the veins close to the Nova Scotia line where he thinks silver in commercial quantities will be found, as has been the case in similar formations on the Nova Scotia. Mr. Loring holds the opinion that the ground formerly held by lease by the Little Nipissing Mining Company and that south and between the Little Nipissing and Seneca Superior lease gives the best chances for encountering new orebodies and remarks that they have been explored very little. He also advocates ascertaining the depth of the upper diabase. Owing to the results obtained on the lower diabase sill at the Beaver property it is thought probable that the veins on the Peterson Lake will show silver values sufficient to warrant the expenditure. Mr. Loring advises diamond drilling to discover the depth of the lower contact, and, if not too deep, sinking a shaft and exploring beneath the sill. The company has paid \$462,191 in dividends. Mr. S. G. Forst is managing director and Mr. W. A. Lamport secretary-treasurer.

Beaver.

The annual report of the Beaver bears out the opinions previously expressed of the importance of the finds made at the 1,600-ft. level of that property, although Mr. Culver says: "While we are not yet in a position to say it will make a new mine out of Beaver, it is most encouraging. The report on developments at the Kirkland Lake Mine was very satisfactory. Enough ore has been stoped out at the different levels to keep a mill of 100 tons daily capacity going without any trouble, and it is likely the mill will be installed in the near future at this property. The financial statement showed assets consisting of cash and accounts receivable of \$57,924, against which are liabilities of \$6,500, leaving a surplus of \$51,424.

Wright-Hargraves.

It is understood that in cutting a station at the 100-ft. level of the Wright-Hargraves at No. 2 shaft, the vein was found to be 20 ft. in width, and carried values around \$50 to the ton. No. 2 and No. 3 shafts will be continued to the 300-ft. level without delay and a drift will be run to make a connection which will serve the double purpose of proving a very large ore body and at the same time provide excellent ventilation. An extensive plan of development is being outlined for this property.

Adanac.

Silver values are increasing slightly on the vein at the 400 foot level of the Adanac and the vein appears to be coming together more definitely, with every indication that it is nearing the contact where a change for the better is confidently anticipated.

Kerr Lake.

During March the Kerr Lake Mining Company silver production amounted to 219,335 ounces, as compared with 206,474 ounces during the preceeding month. This is the highest production since August last. The production for the first quarter of 1917 is 641,000 ounces as compared with 563,594 for the first quarter of 1916, an increase of 77,421 ounces. The Kerr Lake total production for 1917, at the present rate, will compare favorably with 1916.

Teck-Hughes.

Precipitates from the new mill at the Teck-Hughes are being shipped to the Buffalo mine refinery for treatment until such time as arrangements can be made to care for them at the property.

Dominion Reduction.

The Peterson Lake Company has secured an injunction restraining the Dominion Reduction Company from taking tailings from Peterson Lake. Meanwhile, the second oil flotation unit at the Dominion Reduction, which, it is understood, was being installed for the purpose of treating these tailings, is being gone on with.

Canadian Kirkland.

Free gold has been discovered in a three foot vein on the property of the Canadian Kirkland Company, at Kirkland Lake. A small force are employed and the initial program will consist of more or less surface exploration.

BRITISH COLUMBIA.

One of the most important questions at present affecting the mining industry of the Kootenay and Boundary districts of British Columbia is that of the lack of agreement up to the time of writing between the Western Coal Operators' Association and District 18, United Mine Workers of America, which union controls the greater number of the miners working under ordinary conditions in the Crows Nest district of British Columbia and in the Province of Alberta. There is, though, hope of an early settlement of the differences between operators and employees, for on April 14, the following press despatch was sent out from Calgary, in which city representatives of the two parties have been conferring off and on for several weeks:

"The dispute between the miners and the managers of the coal properties in District No. 18 has been settled, at least so far as the sub-committees are concerned. Early next week the agreement reached between the sub-committees will be presented to the

union miners of the district for an expression of approval by ballot, and if this be favorable to the settlement reached by the committee-men, the mines will enter into another period of peaceful operation which should last for two years.

"The wage increase agreed upon approximates 15 per cent. The eight-hour day for outside men, demanded by the men in the original presentation of claims, has been compromised, the terms providing for a nine-hour day for most of the outside men. The present outside day is of ten hours' duration. There was also a compromise on the holiday demand, both operators and men conceding some points.

"The provisions of the agreement include the possibility of further demands being made before the expiration of the working agreement, but only in case of extraordinary conditions with relation to the war or the cost of living."

Quarter's Ore Receipts at Trail.

The total quantity of ore received at the Consolidated Mining and Smelting Co.'s smelting works at Trail, West Kootenay, during the first quarter of 1917 was 121,516 tons. This quantity compares with 118,415 tons for the corresponding period of the year 1916. The districts or divisions from which the ore came, and their respective proportions, are as follows, the figures in parentheses being the quantities for the similar period of last year:

From East Kootenay, 35,226 tons (16,856 tons). From West Kootenay: Ainsworth division, 2,121 tons (5,212 tons); Slocan division, 5,240 tons (3,195 tons); Nelson division, 2,906 tons (708 tons); Trail Creek (Rossland) division, 41,762 tons (84,994 tons); Arrow Lake division, 155 tons; Lardeau and Trout Lake divisions, 95 tons; Revelstoke division, 40 tons (60 tons); total for West Kootenay district, 52,319 tons (94,169 tons). From Boundary district, 12,816 tons (75 tons). From Yale district: Nicola division, 343 tons; Kamloops division, 1,339 tons (738 tons). From Coast district: New Westminster division, 38 tons; Vancouver Island, 62 tons. From Omineca division, in the Skeena River region, 266 tons (189 tons). From Alberta, 40 tons (52 tons). From Manitoba, 30 tons. From Ontario, 974 tons. From the United States: Idaho, 2,153 tons (126 tons); Washington, 15,845 tons (6,210 tons). From China, 65 tons.

British Columbia mines sent to Trail during the quarter under review 102,409 tons (112,027 tons); those from other parts of Canada, 1,044 tons (52 tons); those in neighboring States, south of the International Boundary Line, 17,998 tons (6,336 tons), and one mine in China sent 65 tons. The proportion of the quarter's total from mines operated by the Consolidated Mining and Smelting Co. was 85,564 tons (100,422 tons), and of custom ores, 35,952 tons (17,933 tons). The main cause of the decrease in quantity of ore from the company's own mines was the carrying out of its policy of mining and smelting less ore from its Rossland mines, the chief valuable content of that ore being gold, the production of which has been costing more without any compensating increase in value. The decrease in production from Rossland mines, however, was to a considerable extent compensated for as regards quantity of ore received at Trail, by a comparatively large increase in output of lead and zinc ores from the company's Sullivan mine, in East Kootenay. The decrease in quantity of ore received from Ainsworth was due chiefly to the fact that the company's No. 1 mine, in that camp, which in the first quarter

of 1916 shipped 2,381 tons, has been inoperative this year. On the other hand, the increase from Boundary district is the outcome of production from the Emma mine which, prior to its acquirement by the Consolidated Co., was idle for several years.

The Position at Rossland.

On Monday, April 2, the Rossland Miner published the following reference to miners and others affected by the recent suspension of work at the Consolidated Co.'s Centre Star and Le Roi groups of mines in Rossland camp:

"Those miners and other employees in the mines here who have been laid off on account of the restricted operations at the smeltery at Trail, caused by the shortage of the supply of coke, as announced by the Consolidated Mining and Smelting Company recently, were paid off today.

"Just what the men will do pending an adjustment of the troubles prevailing at present is not known, some having gone to Kimberley, East Kootenay, or other places, until a full resumption of work shall take place in the local mines. Few, if any, of the families of the workmen have left Rossland, and it is sincerely hoped by all that everything will be normal again very soon and that the workmen will be employed as usual.

"No adjustment of the differences between the miners and coal-mining companies in the Crowsnest coal section, from which the supply of coke is received for the Trail smeltery, has as yet been announced, but when this shall come no doubt something definite as to a complete resumption of work here will be known.

"The Le Roi No. 2 (Josie) mine still continues to be operated, but unless relief shall come, through a better supply of coke for the smelting works, it is feared that the Josie, too, may be adversely affected."

While the Rossland Miner does not mention the wages question, it is known that the prospect of the miners throughout the district demanding an increase of 50 cents a day in wages, it having been currently reported that such was their intention, was one of the causes that led to the suspension of operations at the Consolidated Co.'s Rossland mines.

Omineca.

From New Hazelton has come the news that owing to an increase in ore-treatment charges at the Trail smelting works and a refusal to accept for smelting there silver-lead ore containing more than 15 per cent. zinc, shipment of that class of ore from the Silver Standard mine, on Glen mountain, a few miles from Hazelton, has been suspended. An official statement published a few weeks ago was that in 1916 about 651 tons of silver-lead ore was shipped to Trail from this mine, the total metal contents having been about 120 oz. of gold, 74,593 oz. of silver, and 162,051 lb. of lead; also, that 209 tons of zinc-silver ore was shipped to the United States, this having contained 168,816 lb. of zinc and 12,647 oz. of silver.

An adit on the Silver Standard property crosscuts four or five veins, which are roughly parallel. All these veins are more or less mineralized and will, in time, be prospected by drifting on them. The main vein contains a considerable amount of ore which cannot be shipped profitably as mined, nor would it pay to hand-sort it, but it would be amenable to some kind of concentration. It is probable that after much more ore shall have been developed, sufficient to assure a large enough quantity to warrant the provision of concentrating facilities, a suitable mill will be put in.

General Notes.

Correcting a misstatement made in a New York technical journal, Mr. Joseph Keele, chief engineer in the Ceramic Division, Mines Branch, Canada Department of Mines, has stated in print that "some of our best fireclays occur in the Tertiary rocks of British Columbia, where they are mined for the manufacture of firebrick."

Last year placer-gold mining was done on a number of streams in Atlin district, including Pine, Spruce, Boulder, and Otter creeks, and O'Donel river, and the amount of gold recovered was estimated to have been of a total value of \$320,000. Preparations are now being made for the season of 1917, and, the winter's snowfall having been heavy, it is hoped there will be a good supply of water for gravel-washing through a long season, with a correspondingly large yield of gold.

Messrs. Sperry and White, of Vancouver, who are connected with the Pacific Great Eastern railway, in course of construction from tidewater on Howe Sound through Lillooet and Cariboo districts to a connection with the Grand Trunk Pacific transcontinental railway at Prince George, are interesting themselves in some very promising mineral claims situated in the mountains at a distance of about 20 miles from Hope, a station on the C. P. R. main line east of Vancouver. Arrangements have been made to do some diamond-drilling to prospect ground that at the surface seems to give indications of the occurrence there of ore in considerable quantity.

It is stated that negotiations have been carried on between the management of the smelting works at Northport, Washington, about twenty miles from Rossland, and the general manager of the West Kootenay Power and Light Company in connection with a proposal that electric current for power purposes shall be supplied by the latter company to the smelting works. A report from Spokane, Washington, is to the effect that if the proposed agreement be entered into, the power company will be required to deliver 2,000 horse-power a year to the smelting company. As yet, though, these statements lack official confirmation.

SILVER PRICES.

		New York.	London.
		cents.	pence.
April	6.....	73½	holiday
"	7.....	73½	holiday
"	9.....	73½	36½
"	10.....	73¼	36½
"	11.....	73¼	36½
"	12.....	73¼	36½
"	13.....	73½	36½
"	14.....	73½	36½
"	16.....	73½	36½
"	17.....	73½	36½
"	18.....	74	36½
"	20.....	74½	37½

TORONTO MARKETS.

Cobalt oxide, black, \$1.05 per lb.
 Cobalt oxide, grey, \$1.15 per lb.
 Cobalt metal, \$1.25 to \$1.50 per lb.
 Cobalt anodes, \$1.50 to \$1.75 per lb.
 Nickel metal, 45 to 50 cents per lb.
 White arsenic, 5½ to 6 cents per lb.
 April 24, 1917—(Quotations from Canada Metal Co., Toronto)
 Spelter, 13 cents per lb.

MARKETS

Lead, 12 cents per lb.
 Tin, 58 cents per lb.
 Antimony, 36 cents per lb.
 Copper, casting, 35 cents per lb.
 Electrolytic, 37½ cents per lb.
 Ingot brass, yellow, 23 cents; red, 25½ cents per lb.
 April 24, 1917—(Quotations from Elias Rogers Co., Toronto)
 Coal, anthracite, \$9.00 per ton.
 Coal, bituminous, nominal, \$8.50.

NEW YORK MARKETS.

Connellsville Coke—
 Furnace, spot, \$8.00.
 Furnace, contract, \$7.00 to \$8.00.
 Foundry, spot, \$10.00 to \$10.50.
 Foundry, contract, \$8.50 to \$9.25.
 Straits Tin, spot, f.o.b. nominal, 55.75 cents.
 Copper—
 Prime Lake, nominal, 31.00 to 32.00 cents.
 Electrolytic, nominal, 30.50 to 31.50 cents.
 Casting, nominal, 28.00 cents to 28.50 cents.
 Lead, Trust price, 9.00 cents.
 Lead, outside, nominal, 9.50 to 9.75 cents.
 Spelter, prompt western shipment, 9.05 to 9.30 cents.
 Antimony—
 Chinese and Japanese, nominal, 34.00 cents.
 Aluminum—nominal.
 No. 1 Virgin, 98-99 per cent., 59.00 to 61.00 cents.
 Pure, 98-99 per cent. remelt, 56.00 to 58.00 cents.
 No. 12 alloy remelt, 40.00 to 42.00 cents.
 Powdered aluminium, 85.00 to 90.00 cents.
 Metallic Magnesium—99 per cent. plus, \$2.50 to \$3.00.
 Nickel—Shot and ingot, 50.00 cents.
 Electrolytic, 55.00 cents.
 Cadmium, nominal, \$1.45 to \$1.50.
 Quicksilver, \$113.00.
 Platinum (pure), \$105.00.
 10 per cent. Iridium, \$110.00.
 Cobalt (metallic), \$1.70.
 Tungsten, per unit—
 Sheelite, \$17.50.
 Wolframite, \$17.00.
 Silver (official), 74½ cents.
 Metal Products.—Following quotations represent mill prices and are strictly nominal except in the case of lead sheets and sheet zinc:
 Sheet Copper—
 Hot rolled, 42.00 cents.
 Cold rolled, 43.00 cents.
 (Shipments from stock 2c per pound extra.)
 Copper bottoms, 50.00 cents.
 Copper in rods (round), 40.00 cents.
 Square and rectangular, 41.00 cents.
 Copper wire, nominal, 37.50 cents to 38.00 cents.

STOCK QUOTATIONS.

As of close April 21st, 1917.

(By courtesy of J. P. Bickell & Co., Toronto.)

New York Curb.

	Bid.	Asked.
Boston and Montana	.62	.64
Butte-Detroit Copper	.37½	.50
Canada Copper	2.06	2.12
Dome Extension	.18	.20
Hargraves	.15	.17
Inter. Petroleum	13.75	14.00
Kerr Lake	4.37	4.50

La Rose Con.	.50	.56
McIntyre	1.56¼	1.68¼
North Amer. Pulp & Paper	5.12	5.50
Nipissing	7.25	7.50
Superstition	.36	.40
Temiskaming	.43	.45
Vipond	.38	.42

Ontario Gold Stocks.

	Bid.	Asked.
Apex	.07	.07¼
Boston Creek	.90	.92
Dome Extension	.19	.20
Dome Lake	.19	.19½
Dome Mines	14.90	...
Hollinger Cons.	5.10	5.15
McIntyre	1.68	1.69
Moneta	..	.12
Newray	1.47	1.48
Porcupine Crown	.56	.60
Porcupine Imperial	.03¼	.03¾
Porcupine Tisdale	.01¾	.02
Vipond	.40¼	.42
Preston East Dome	.04½	.05
Schumacher	.49	.50
Teck Hughes	.13¼	.14
West Dome	.23	.24

Cobalt.

	Bid.	Asked.
Adanac20
Bailey	.03½	.04
Beaver Con.	.37	.38
Buffalo	1.10	...
Chambers-Ferland	.10½	.11
Coniagas	3.25	...
Crown Reserve	.31	.35
Great Northern	.11½	.12½
Hargraves	.16¼	.17
Hudson Bay	40.00	...
Kerr Lake	4.30	...
La Rose	.50	...
McKinley-Darragh-Savage	.48	.50
Nipissing	...	7.50
Peterson Lake	.08½	.09
Shamrock Cons.	.21	.22½
Temiskaming	.43	.43½
Trethewey	.11	.16
Wettlaufer	.06½	.08

MINERS' OPPORTUNITY

to Buy USED EQUIPMENT in first-class running order

No. 1A D.C. Generator, 360 Amp. 975 R.P.M., 115-125 volts, belt driven, General Electric; new price \$1,400.00 will take \$350.00.

No. 1B High-speed Steam Engine for above, 11 inch by 10 inch, Goldie, McCulloch, 340 R.P.M.; will take \$225.00.

No. 2A D.C. Generator, 600 Amp., 270 R.P.M., 115-125 volts, belt driven, General Electric; new price \$2,700.00; will take \$775.00.

No. 2B Corliss Steam Engine for above, 13 inch by 30 inch; will take \$760.00.

The Following Would Require Some Overhauling:
 No. 3 Corliss Steam Engine, in fair condition, 12 inch by 24 inch, with flywheel and 80 inch driving pulley; will take \$510.00.

No. 4 10 H.P. Vert. Steam Engine, with cylinder head broken; could be repaired; will take \$35.00.
 Purchasers would have to be at expense of removing any of the above, Except No. 4, from their present positions.

Gurney Foundry Co., Ltd., Toronto