

The Part of the Coalfield of the West in Canadian National Development

A Paper prepared for Presentation at the Second Annual Western Meeting of the Canadian Institute of Mining & Metallurgy, October 25th to 28th, 1920, Winnipeg.

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At the Toronto Meeting of the Institute in March last, the writer developed the argument that Canada could become self-supplying in bituminous coal.

The events of the Summer have gone far to establish the necessity, if not the soundness of this aim. We have read on the one hand the statement of the Minister of Railways that Nova Scotia coal should be brought to Ontario, and we have seen, on the other hand, the greatest extension eastward of the use of western coal yet recorded in Canada, accompanied—under emergent conditions it is true—by definite proposals for the forwarding of Alberta coal to Ontario.

Existing Fuel Situation is Unrepresentative.

The present bituminous situation is not representative. In Nova Scotia the existing output does not represent the capacity of the mines. Neither is the transportation deficiency to be considered representative that has brought about a coal supply emergency in those districts of North America that lie furthest removed from the great central coalfield of Pennsylvania and Virginia.

These are post-war conditions of limited duration.

The western coalfields have been so slightly and so recently developed that a statement of existing production is interesting only as a contemporary record, and has no bearing on the future.

What then is the outlook for making Canada self-supplying in bituminous coal, and what in particular the role of the western coalfield?

Bridging the Gap between our Bituminous Fields.

There is no doubt as to the presence within the borders of Canada of sufficient bituminous coal to supply not only our present population, but also that of the future, whatever it may be. Unfortunately a gap of 2,000 miles intervenes between the eastern coalfield and the beginning of the Saskatchewan lignites along the international border.

This gap can be bridged, if we adopt a national policy on coal supply, but not immediately. Two things are eminently required to achieve this end:

(a) An extension of the Great Lakes waterways that will enable Nova Scotia coal to enter Lake Ontario by water carriage without breaking bulk.

(b) Adoption by the railways of a comprehensive programme for the annually increasing transport of coal from the western coalfield, as a permanent feature of traffic.

The following tables are self-explanatory, and show the existing and possible production of bituminous coal in Canada, with existing mine openings and colliery equipment, and the very substantial improvement that even full utilization of existing development would bring about.

The total possible production estimated in Table 2 is, curiously enough, what the total production of Canada should have been in 1920, had the curve of rising coal production before the war continued uninterrupted.

Table 1
BITUMINOUS COAL

Present Output Position of Canadian Coal Mines, showing their ability to supply Home Markets, within proved economically transportation distances

Short Tons W - Western Mines E - Eastern "

Province	Consumption	Production	Surplus for extra-provincial use	Deficit necessary to be Imported	Present Source of Supply of the Deficit	
					Canadian Mines	United States Mines
Nova Scotia & P.E. Island	4,300,000	5,800,000	1,500,000	-	(E) 800,000	-
New Brunswick	1,000,000	200,000	-	800,000	-	-
Quebec	4,000,000	-	-	4,000,000	-	4,000,000
Ontario	11,000,000	-	-	11,000,000	-	11,000,000
Manitoba	3,000,000	-	-	3,000,000	} 2,200,000 (W)	1,900,000
Saskatchewan	1,500,000	400,000	-	1,100,000		
Alberta	3,300,000	5,500,000	2,200,000	-		
B. Columbia	1,800,000	2,500,000	700,000	-	-	-
Totals	29,900,000	14,400,000	4,500,000	19,900,000	3,000,000	16,900,000

Leaving for Export from Canada in 1920

Nova Scotia 700,000
British Columbia 700,000
Tons 1,400,000

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Table 2 *Possible Ability of Canadian Coal Mines at Maximum Capacity of existing Openings to Supply Home Markets within proved Economically Possible Transportation Distances. Short Tons.*

Province	Consumption	Maximum Possible Production existing mines	Surplus for extra-provincial use	Deficit necessary to be Imported	Source of Supply	
					Canadian Mines	United States Mines
Nova Scotia (incl. P.E. Is.)	4,300,000	8,000,000	3,700,000	-	-	-
New Brunswick	1,000,000	250,000	-	750,000	750,000 (E)	-
Quebec	4,000,000	-	-	4,000,000	2,900,000 (E)	1,100,000
Ontario	11,000,000	-	-	11,000,000	-	11,000,000
Manitoba	3,000,000	-	-	3,000,000	4,050,000 (W)	-
Saskatchewan	1,500,000	450,000	-	1,050,000		-
Alberta	3,300,000	9,000,000	5,700,000	-		-
B. Columbia	1,800,000	3,000,000	1,200,000	-		-
Totals	29,900,000	20,700,000	10,700,000	19,800,000	7,700,000	12,100,000

Leaving for Export from Canada:

Alberta	1,650,000
British Columbia	1,200,000
Totals	2,850,000

The objective of the Canadian coal miner is of course to limit the importation of United States coal to the smallest area possible. The extent of this area depends on the radius of distribution of Nova Scotia coal in the East, and on the radius of western coal east of Calgary and Edmonton.

The difference between the East and the West is that the coal resources of Nova Scotia are not large, while those of the western coalfield are as large as it is desired to make them.

In the case of Nova Scotia, there is distinctly a limit to the quantity of coal that can be mined annually, and this quantity cannot probably much exceed 10 million tons.

The limits to production from the western fields

are set by availability of labor, and money, by distance and markets, but not by the available quantity of coal.

Our Coal Salvation comes from the West.

Canada's salvation in coal supply must therefore come from the West, and the vision of western coal miners, when considering the future, should be as wide as the possible markets, and detached from present-day conditions, for these are very ephemeral, and very different from the conditions that are to come.

It is evident that at this time the domestic requirements of the four provinces west of Fort William do not require any enlargement of existing collieries, these being already more than sufficient to supply the home demand to the entire supplanting of United States coal by the native product.

An Export Market for Western Coal.

An export market is therefore desirable, and the statistics of the Ottawa Mine Branch disclose substantial beginnings of coal export, both in Alberta and in British Columbia.

Alberta.	1917	1918	1919
Exported to the U.S.	90,239	137,765	121,264
British Columbia.			
Exported to U. S. . .	845,128	842,986	852,704
Other countries . . .	42,796	65,427	
	978,163	1,041,178	973,968

The exports of 1920 will in all probability be larger than in any previous year. British Columbia, in particular, has found entirely new markets.

There is very little good coal on the Pacific Slope of this continent, except in Vancouver Island and British Columbia, and the whole Pacific Slope should provide a market for British Columbia coal, not excluding South America.

An inspection of the map will show that the better-

Table 3 *Change possible in Canadian Coal Trade Balance by full utilization of existing Collieries*

	Present	Possible
Canadian Consumption	29,900,000	29,900,000
Canadian Production	14,400,000	20,700,000
Necessary to Import	15,500,000	9,200,000
Available for Export	1,400,000	2,900,000
Net Deficit	15,500,000	9,200,000

Showing possible lowering of coal debit balance by 6,300,000 tons, or, say, a value of \$30,000,000 per annum on the basis of 1920.

grade bituminous coals which are found at high elevations in the Rocky Mountains are relatively near to the Pacific Slope, being only one-third the distance from, say the Crow's Nest Pass, to Winnipeg.

Coal is an article that in the future, because of its relative scarcity, will stand much longer rail-hauls to a shipping port than has hitherto been considered reasonably economically possible, and Alberta coal is not much further from tidewater than is West Virginia coal from Atlantic ports. The position of the port of Vancouver has been much improved by the regular use of the Panama Canal route, and the projected port improvements are fully justified at Vancouver, being indeed undertaken rather too far behind those of Seattle.

The coal deposits of the West are so large, and the world need for coal so pressing, that it may well turn out that an export trade in coal will precede the development of the western coalfield for the purpose of providing fuel for local manufacturing industries, and, because it has hitherto been unusual, the possibility of rail-hauling western coal for export shipment at Vancouver, and at Prince Rupert, is not thereby lessened.

The markets held by the British collieries hitherto, such as South America, the Levant and Scandinavia, are being rapidly lost to them by the unreasonable demands of the miners and the diminishing productivity of the remaining coal seams. United States coal is rapidly supplanting British coal in markets previously exclusively supplied from Britain.

It might be suggested that the position of the Alberta collieries with reference to Vancouver, and those of Northern British Columbia with reference to Prince Rupert, is not dissimilar to the relation of West Virginia collieries to Atlantic ports—as previously mentioned—and the opportunity to enter British markets is open to any coalfield in North America that can get its coal to tidewater within commercial limits of cost of rail-haul.

The Western Coalfield An Assurance of National Independence.

No country, however, achieves lasting prosperity or national permanence from mere export of raw material, and while the search for an export market is suggested as an immediate requirement for the healthy development of the western coalfield, the real role of—



"THE INTERESTING FUNCTION OF ALLOTMENT OF FUEL SUPPLIES"

"Canada being the most distant market, the most indirect to reach, the last applicant at the final source of coal fuel, will in all probability witness in future years many a recurrence of the situation of 1917-1918. When the united demand is moderate and production going well, Canada will be supplied, but when the demand is heavy and production low, Canada will again be a participant at the interesting function of allotment of fuel supplies; a fact which must inevitably be a detriment to her economic and social development." (From an article contributed to the "Journal", April 2nd 1920, by a writer in the United States)

this field will be played when, in the inevitable course of events, it has become the site of industries, metallurgical, chemical, ceramic and textile, based upon bituminous coal.

Then, and only then, will the West rise to its full dignity as a pillar of Canadian nationhood and the most stable guarantee of our political permanence as an independent people. But for the coalfield of the West, Canada would sooner or later be compelled to subscribe to that political ascendancy and tutelage which is the certain outcome of economic subserviency, and inseparable from dependence on another nation for so essential a commodity as coal.

The coalfield of the East has assisted and will continue to assist in relieving our national fuel inadequacy, but its extent is too small to build a nation on.

The coalfield of the West is fortunately not small, but worthy to be called large, even in comparison with the generous fuel resources possessed by the United States.

In advocating maximum independence of the United States in the coal supply of Canada, it is perhaps necessary in order to avoid misapprehension, to emphasize that this advocacy is based upon no unfriendly or envious feeling. As between individuals, so between nations, dependence involves Canada in other peoples' affairs, places us in the position of the poor relation who is blamed for the sins of the family, but dare not express his mind because his allowance may be cut off.

A restoration of our international coal balance-sheet to the fifty-fifty basis of previous years would go a long way to restore Canadian self-respect, to bring our dollar nearer parity, and to remove the inhibition on our freedom to talk and act nationally without the repressive dread of a coal shortage.

This is where the West will serve this nation most effectually, for it possesses in greatest abundance that article without which no modern nation can survive except on sufferance.

Anthracite Supply not Considered Vital.

No consideration is given in the foregoing remarks to anthracite supply. Where bituminous coal is available in Canada, from Canadian mines, anthracite can be dispensed with, at the sacrifice of convenience, and its use under these circumstances, however desirable, is nevertheless a luxury.

The Fuel Role of the West a Predominating One.

There is another consideration. The entire mineral production of Canada in 1919 was valued at 173 million dollars. The value of our imports of coal, iron and steel, and petroleum, totalled 273 million dollars.

The West, containing as it does 99.3 per cent of Canadian coal resources, and apparently containing some oil also, must assist in our national fuel problem correspondingly to its fuel resources, or default in its share of national development. This is the part that the West must take.

NEW MAP OF HERB LAKE DISTRICT, MANITOBA

A new map is issued by the Geological Survey, Publication No. 1801, on a scale of 2 miles to one inch, compiled by Dr. F. J. Alcock, to accompany a memoir prepared by him on the Herb Lake (Wekusko Lake) and Reed Lake Region. The map is a geological one, and shows the relation of the district to the north of Mile 82 on the Hudson Bay Railway.

Visit of the Members of Manitoba Legislature to the Flin Flon Mine

(see Dr. R. C. Wallace's description in the "Journal" of Nov. 5th 1920.)



The First Camp—Goose River



A Group taken at the Flin Flon. Thos. Creighton, discoverer of the property seated in centre.



Some members of the Party at the No. 1 Shaft.

NATURAL GAS ASSOCIATION OF CANADA HOLDS SECOND ANNUAL CONVENTION.

The second annual convention of the Natural Gas and Petroleum Association of Canada was held at Chatham, Ontario, on October 15, with a registered attendance at the afternoon session of 76 members and 36 guests. The convention was the most successful in the history of the association. Throughout the proceedings the chair was occupied by President C. E. Steele, of Port Colborne, Ontario.

Reports were presented covering the work of the past year. For the board of directors Secretary-Treasurer S. A. Morse reported a uniform decline in gas production but a growing inclination on the part of the public to pay more adequate prices. The membership of the association showed a substantial increase, the lists showing 107 active, 5 associate and 28 company members, a total of 140, being an increase of 22 active, 3 associate and 10 company members since the last meeting. The association had a cash balance of \$1,043.81.

Reports were presented, for the Laws and Legislation committee by Major E. F. Sweet, of Brantford; for the publicity committee by H. R. Davis, of Buffalo, N.Y., and for the committee on constitution and by-laws by Gordon Wickett of Windsor.

The following officers were chosen for 1920-21:

President, C. E. Steele, Port Colborne, (re-elected).

First Vice-President, A. M. McQueen, Imperial Oil, Ltd., Toronto, (re-elected).

Second Vice-President, T. P. Pinckard, Windsor, (re-elected).

Secretary-Treasurer, S. A. Morse, Chatham, (re-elected).

Directors: H. R. Davis, Buffalo, N.Y., (unexpired term); J. B. Williams, Sarnia, (unexpired term); P. S. Coate, Chatham, (re-elected); P. A. Little, Buffalo, N.Y.; R. L. Pattinson, Chatham; H. B. Pearson, Calgary, Alta.

F. W. James, manager of the Union Natural Gas Company of Chatham gave a comprehensive paper on "The Natural Gas Industry," dealing with the various essentials in the successful operation of a natural gas field from the first leasing to the delivery of the gas to the customer.

A feature elucidated in the discussion was the development by the Union Natural Gas Company of a double-engine automotive plant for deep drilling, using natural gas as fuel.

Samuel S. Wyer, of Columbia, Ohio, gave "A Talk on Natural Gas" pointing out that the age of large-volume, low-priced gas sales was past, and that the future of the industry depended on efficient and economical use of the product. The one way to secure this was by advancing the price to a figure that would make saving worth while; which would in turn facilitate the development of low volume, low pressure wells and make profitable the extraction of gas from old wells that could not be profitably operated under present conditions. He urged education of the consumer in the efficient use of natural gas. Following the talk, an extended discussion took place, Mr. Wyer answering questions by many members.

Harry J. Hoover, president of the Natural Gas Association of America, spoke on "Percentage of Consumers Not Bearing their Just Proportion of Costs" citing figures to show that in a composite compilation of re-

turns for 447,441 customers, 227,262 or 68 per cent were served at a loss. If the 19,823 largest consumers were cut off, the companies represented would break even but operate without a profit. Of his own company's consumers this summer, numbering 123,423 in all, 114,692 or 92 per cent represented a financial loss for each of the summer months of \$52,874.89. Such figures should be presented to regulatory and price-fixing boards, and to the public. He urged publicity as a step toward a better understanding with consumers.

At 6 p.m. a banquet was held, a musical program being also given, followed by an evening business session, at which Mr. D. A. Coste read a paper by his brother, Dr. Eugene Coste, on "Petroleum and Coals, Compared in their Nature, Mode of Occurrence and Origin." Informal talks were given by E. S. Estlin, natural gas commissioner for Ontario, Dr. M. Y. Williams, of the Geological Survey of Canada, and others. The next annual convention will be held at Niagara Falls, Ontario, in October, 1921.

THE NOVA SCOTIA COLLIERIES.

Labor & Wages.

Matters have made little progress since the notes in the issue of the 22nd October. The conference between the miners' officials and representatives of the larger operators arranged by the Department of Labor was postponed owing to the inability of international union officials to attend from Indianapolis, but during the week ending November 6th conferences of a protracted character were in progress in Montreal for four days. Two of the union officials from Nova Scotia accompanied by Mr. John P. White from U. M. W. of A., headquarters represented the union members. Representatives of the Dominion Coal Company and the Nova Scotia Steel & Coal Co., and officers of the Department of Labor took part in the meetings, regarding which no information has been given out.

It is understood that the proposals made will be submitted by the union officials to the Wage Scale Committee, after which the attitude of the union will doubtless be declared.

It is generally recognised that economic conditions have undergone a complete change since the date of the deliberations of the Royal Commission, and that, in view of the decline in steel prices and the slowing-down of demand, any attempt by the coal companies to pay the full increase recommended by the Commission will result in curtailment of work at the steel plants, as the increased cost of fuel would rule the Nova Scotian plants out of the market. At the same time there has occurred a substantial lowering of commodity prices, and the downward tendency is undisputed. A forecast of a settlement is not possible at the time of writing, but it has become evident that the demands of the miners exceed the ability of the coal companies to pay, and the necessities of the case will make a compromise a likely ending.

Production.

The Dominion Coal Company's production, notwithstanding a number of accidents and other interruptions in October, shows a rising tendency, and reflects the employment of a larger proportion of face workers which it has recently been found possible to obtain. Production of the Glace Bay collieries in October

1919, and 275,890 in October 1918.

A comparison of the production of the individual collieries during the past three months follows:

	August.	September.	October.
1	28,693	29,613	24,277
2	44,564	42,313	45,357
4	25,537	27,786	24,717
5	7,939	8,383	9,243
6	19,980	21,793	24,233
9	19,541	21,008	22,009
10	10,317	9,704	11,992
11	14,634	14,433	14,834
12	14,520	8,162	12,842
14	15,939	18,169	19,693
15	9,066	9,030	7,949
16	13,078	14,578	13,614
17	2,540	2,738	2,392
21	13,442	15,049	16,485
22	16,898	17,439	17,294
24	3,979	4,444	5,652
	260,667	264,712	272,283

Noticeable in these figures of production is the increasing production of the Emery collieries, Nos. 10, 11 and 24, now contributing twelve per cent of the output, and the large outputs coming from the Birch Grove collieries, Nos. 21 and 22. The contribution of the Phalen Seam at forty per cent is probably the lowest in the history of the Company, and from now on will be a steadily diminishing quantity, except as it is maintained by the contribution of the Lingan Seam collieries, Nos. 15 and 16 on the Waterford side, which is the continuation of the Phalen Seam from the Glace Bay area.

Indications are that the production of the Glace Bay collieries for 1920—if no serious interruption of work occurs between now and the year-end, will reach 3,220,000 tons, which will compare with 3,087,638 tons in 1919 and 3,271,755 tons in 1918.

The mines of the Nova Scotia Steel & Coal produced 50,800 tons in October. The output would have been larger but for an accident by which two of the best respected miners in the district lost their lives. The production for the year will probably reach 620,000 tons, which will be the best annual production for Scotia since 1914. This Company has not suffered anything like such a decline in production as the Dominion Coal Company. Comparing 1920 with 1913 the Dominion output shows a decline of approximately 32 per cent. Scotia output shows a decline of 24 per cent.

The Indian Cove Coal Co. at Sydney Mines has increased its output from 5,000 tons annually to 50,000 tons approximately in 1920. The Tom Pit is now producing 240 tons of coal daily, and has recently been equipped with an air-compressor and coal-cutter.

The discovery of a seam of coal at Inverness Colliery overlying the seam which has been extensively worked there is reported. Many attempts have been made to locate this upper seam but unsuccessfully, it being known locally as the "Thirteen Foot Seam". The seam is now being worked.

CANADIAN OIL SHALE INDUSTRY LOOMING. ALEXANDER GRAY.

After a quarter of a century religiously devoted to the demonstration of their extent and varied contents, the Oil Shales of New Brunswick are about to be practically and profitably employed.

It is understood a plant is being designed. The Anglo-Persian Oil Company, through the D'Arcy Exploration Company, are said to contemplate a forward movement; so Canada in due course may rival the Scotch oil-shale industry.

Something like \$600,000, it is stated, was expended in the preliminary investigation and demonstration of these shales, much of it by Canadians who were "prophets without honor in their own country." The further capital needed for the undertaking had to come from oversea. Oil operators accustomed to puncture strata and busy themselves drawing cheques against pipe line receipts, could not see where New Brunswick shales had a chance. Money there was and is for "gusher" country—before production is far advanced—but New Brunswick shales and their owners went a'begging. They were altogether commercial-lacked glamor—manufacturing oils, wax, ammonia, and other characteristic contents of such shales, was too methodical.

So situated they can be steam-shoveled, known to consist of hundreds of millions of tons, offering gasoline, illuminating fuel and lubricating oils, paraffin wax, sulphate of ammonia and coke, these New Brunswick shales had to await responsive outside capital. That an initial plant is likely to be installed in the no distant future presages the development of another very important resource. Mr. Mathew Lodge, of Moncton, and Sir William Mackenzie, therefore, who continued steadfast in their conviction that their shales ultimately would be the basis of an industry, are to be congratulated. Year-in-and-year-out, Mr. Lodge "ploughed the lonely furrow." When construction work is advanced and as results are obtained, interest in the shales will increase.

The contention of the larger oil interests all along has been that oil shales have not arrived. Labor, they claimed, and the cost of mining, retorting and distilling processes, precluded profits. It was easier to tap strata, let the oil flow into tanks or pipe lines and bank the proceeds, notwithstanding the example set by Scotland with its shales. Only at long-drawn-out intervals have the shales of Colorado, Utah, Wyoming, and elsewhere, been mentioned as auxiliary sources of certain supplies of oils. Just as soon as shales were suggested, the oil experts laid away the ghost by decreeing that shales were out of the question. Something "labor-cheap," as Director Smith of the United States Geological Survey expressed it—that would pump coin into the coffers of companies or individuals, was preferable. Mark Requa, an outstanding authority, even now asserts that oil shales are a "dernier resort." Professor Alderson, of Colorado, is more affirmative. Generally, the expert judgment is that oil shales are a rear or second line of economic defence. Consequently it devolves upon Canada to take the lead in making its shales an active force in the attack upon its poorly-protected oil position. So irksome has the oil situation become, great oil corporations and adventurous smaller companies, are exploring in Canada's Northwest—with more of disappointment, as yet, than of success. The Fort Norman Well brought in by the Imperial Oil field party, is auspicious, but it is 1,200 miles from the near-

est railway, in a latitude where there is a short season for what water transportation is available. It cannot be immediately helpful, however, "scientifically of much value" as president Stillman, of Imperial Oil Company puts it.

Apart from Ontario's production, Canada cannot upon a further domestic supply of oil until more is known of the Northwest development and the New Brunswick shales are being dealt with in quantity. The Fort Norman country may form a base of supply. Pipe lines costing fifty million dollars are not to be lightly undertaken. If the Anglo-Persian Oil Company, therefore, meet with success, and go ahead, as it is alleged they will, the twenty-five year effort of Messrs. Lodge and Mackenzie should be amply rewarded.

Fortunately, repeated drillings over large sections, and bulk tests, have satisfied international authorities as to the exceptional richness of the New Brunswick shales. There is no disputing this point, that Messrs. Lodge and Mackenzie established their excellence. They sought and obtained the judgment of Prof. N. S. Shaler, of Harvard University; they interested Dr. R. W. Ells, who made tests of these shales in Scotland; they consulted Dr. Charles Baskerville, of the College of the City of New York, and they induced the Imperial Government to send Dr. Boverton Redwood and assistants, who retorted and distilled some of the shales. Dr. Marshall Hall, Sperry Hunt, and a number of noted scientists in turn passed upon the shales. Dr. Hall roughly estimated the tonnage indicated over a large outcropping area, although a small portion of the one hundred and ninety-two square miles held by Messrs. Lodge and Mackenzie interests, at 150,000,000 tons. In recent years the holders of these areas have seen them drilled to a depth of 1,500 feet, indicating much more than Dr. Hall at the time cared to project. Taking the shales he had in hand as a basis, Dr. C. S. Lomax, of New York, gave estimates on a plant with a daily capacity of 1,500 long tons, equal to 547,500 tons per annum; and he presented a possible production of 32.7 imperial gallons per ton of shale, or 18,000,000 imperial gallons per annum of crude oil which, when refined, would provide 2,137,500 imperial gallons of gasoline, 7,961,500 imperial gallons of illuminating oil; 2,666,000 imperial gallons of lubricating oil; 6,120,000 lbs. of paraffin wax; 13,687 tons of sulphate of ammonia, and 1,530 tons of coke. The 32.7 gallons of crude oil and 65 lbs. of sulphate of ammonia were believed to be conservative.

Mined as these deposits can be mined, and treated by proven processes, it is likely that New Brunswick is on the eve of more than was foreseen by those who have scoffed at Messrs. Lodge and Mackenzie. English capital is undemonstrative, and its technical representatives are reticent, but the shale industry is gathering momentum.

A good grade of coal is being mined at the junction of the Healy and Nenana Rivers, Alaska. The mine, which is operated by the Healey River Coal Corporation, is close to the Alaskan Railway near Fairbanks and a tramway is used to deliver the coal at the railway tracks. Some large seams in the Healey River section are to be explored.

THE INDIAN HEAD IRON ORE DEPOSIT.—PORT AU PORT, NEWFOUNDLAND.

By a Correspondent.

Newspapers have recently published more or less sensational and absurd reports of the discovery of an iron ore deposit at Port au Port, Newfoundland. These reports are absurd insofar as the price at which the claim is said to have changed hands, is fabulous, while the truth is that the ownership has not really changed hands at all; and sensational insofar as the stressed immensity of the deposit has not yet been proven.

The existence of iron in this locality has been known ever since a road was built through there about 25 years ago, or at least the Dominion Iron & Steel Company were first made aware of it at that time. Nobody seems to have become interested in its possibilities until 1913 when an American lady tourist summering at a resort nearby, brought a drill crew there. But rumor says that these men never used the drill as they apparently failed to locate the ore and anyway their efforts came to nothing.

Within the past few months the Dominion Steel Corporation have been investigating the property. They have had some prospectors at work during the past summer and latterly have had a mining camp built and a regular gang employed. During the summer too, some well known geologists have visited Indian Head in the corporation's interests, and have made very satisfactory reports. Indications encourage the belief that a very large body of workable ore is there, and there are millions of tons in sight along the outcrop alone. The outcrop runs across the main road from Stephenville Crossing to Port au Port, extending half a mile north and three quarters of a mile south of this road.

The rocks of the vicinity are of pre-Cambrian age and are generally metamorphosed, as are most of the rocks in the island, although in this case there is some evidence of sedimentary deposition. These rocks are said to be, in many respects, like the pre-Cambrian rocks of the Adirondacks, N.Y. In the northern prolongation of Indian Head, they consist of: granites, syenites, diorites, pyroxenites, anorthites, basalt, pegmatites and metalliferous bodies. The more acid members of the series, the granites and pegmatites, frequently exhibit their intrusive nature; while the more basic one shew no evidence of that and occupy banded areas. The typical textures, structures, and mineral composition of all the rocks are those of the normal kind although many of them are changed by metamorphism. Certain parallel structures along which the mineral is aligned could be accounted for on the supposition that after cooling, tremendous vertical and lateral pressure re-melted the rock to a viscous state during which there was a re-arrangement of the minerals. Many of the rocks for this reason are gneiss. Parallel with the sheeting and flow-gneiss are granites and syenites, and with these are associated bands and lenses of magnetite and hematite which may be granular or massive in structure. The heavier particles of metallic iron disseminated through the adjacent rocks would tend to separate out while the matrix was still molten and the bands and lenses may have been formed by magmatic segregation. Both magnetite and hematite is found and the deposit is not unlike the great iron-ore deposits of Norway and Sweden.

Indian Head, the Laurentian mass in which this potentially immense metallic body is found, is shaped like a wedge running nearly North and South, thirty

miles in length and four miles in width, lying between two large areas of Carboniferous rock, with its southern extremity jutting out into the waters of St. Georges Bay.

The rocks shew evidence of movement after the close of the pre-Cambrian period, probably at the end of the Ordovician and again at the end of the Carboniferous. Since the mass was first formed and elevated, erosion has been going on, and the glaciers of Pleistocene times have helped to reduce what was once probably a conspicuous mountain peak, to more or less of a low tableland.

The out-crop opened up by the summer's work, shews for 2 miles an uninterrupted belt of magnetite and hematite varying in thickness from 3 to 9 feet. Occasional faults occur with a slight displacement of the ore-body to a higher or a lower level. This belt dips about N. 10 E., at an angle of about 33 degrees. How far the iron body extends beneath the overlying mountain is what the Dominion Steel Corporation is now endeavouring to ascertain, but it promises to compare with any great iron-ore body of like nature found in the world today. The quality of this ore is all that could be desired, giving a very high percentage of iron and being remarkably free from impurities. Its composition it said to be very like that of Swedish iron-ores.

The accessibility of this deposit adds much to its value. It is 5 miles from the main line of the Reid Newfoundland Company's railroad, and 12 miles in a direct line from Port au Port. A short railroad to this spacious harbour would present no difficulties in the building and would provide splendid shipping facilities, abundant cheap wharfage area with deep water close inshore, and the railroad would be down-grade for loaded trains, when there was a grade, as the mine is four or five hundred feet above sea-level.

TORONTO NOTES.

Mr. J. B. Tyrrell, Mining Engineer, who has just returned to Toronto from six weeks spent in the Western part of Newfoundland, where he examined various mining properties for interests he represents, states that the geological conditions are similar in Newfoundland to those of Northern Ontario. Along the shores there are numerous outcrops that have been worked in part, and although they have gold and copper, very few of them are being worked at the present time and in most cases if they have been worked in the past, little can be learned as to what has been done on them, as the maps and reports have been disregarded, and the whole investigation has to be started over again. If any one owns a mining property he wants to sell it, but he wants the buyer to take all the trouble and expense of finding out what it is worth, and there is practically no information available.

The Nova Scotia Steel Company is investigating the iron-ore deposit on the west coast, which contains some very excellent showings, but whether the deposits are large enough to be profitable has not yet been determined. Coal is now being developed along the line of the Reid-Newfoundland railway and it is not at all improbable, says Mr. Tyrrell, that the railways will be able to obtain a local supply of coal at half the cost that it is now obtained for from the Sydney mines

or such other sources from which the supply is being obtained. The cod-fishing in Newfoundland has not been good this year, and many men are looking for employment, so that labor for mining work or in the bush is fairly plentiful.

The withdrawal by the Ontario Government of mining claims in Northern Ontario from restaking has caused a stir among mining in Toronto and in the industry generally. One local promotor points to the fact that several years ago he sold certain parcels of mining lands in Northern Ontario to an English Financier for \$10,000 who naturally would not see the official notice in the Ontario Gazette advising the owners of the Government's intention to forfeit the unworked properties. In the opinion of a good many of the mining fraternity the situation is bound to prove a black eye for the industry as far as British investors in Canadian mining enterprises is concerned.

During the past few days Tom Magladery, member for Temiskaming has brought to Toronto the protests of the prospectors in his district against the Government's discrimination in favor of the wealthy mining companies. He reports that there is a furore in the north country on the part of the small claim owners who have worked several years on the properties, only to lose them now for the non-payment of a few dollars in taxes, while the wealthy companies are protected. Some of the protests are voiced by James Hyland, the well-known Cobalt engineer, who says:

"It is the rawest deal ever attempted and carried out in any civilized community. What would be the opinion of the farmers of this country if a similar law was enacted, and if the farmer one day found that his whole farm was confiscated because he had failed to pay a tax of possibly \$4 to \$10 of which he was unaware."

It is stated that the Teck-Hughes claims were restaked, despite the Government's order, by one prospector who hired all the automobiles and available conveyances in the north country so that nobody could beat him to the recording office. He now demands payment of his expenses from the Government.

The mining claims affected by the Government's order were advertised to be forfeited on October 15th unless the assessment were paid by that date. They were to be thrown open for re-staking on October 28th. It was on the latter date that the Cabinet passed the order-in-Council which saved eleven of them, including the Teck-Hughes and Kirkland Lake-Hudson Bay claims, from being restaked. But they had been forfeited on the previous date. The mining Act does not cover such a situation as that now extant, except to place certain arbitrary powers in the Minister. Hon. Harry Mills, Minister of Mines is consulting the mining commissioner now as to the process of restoring the property to original owners.

TORONTO COAL PRICES.

Toronto, November 11.—Coal trade conditions show little change but the closing of navigation is expected to produce a slight easing off in the hard coal situation. Bituminous coal, mine run, is quoted at \$10.50 to \$11.50, f.o.b. Toronto, with slack slightly easier. Smokeless is quoted at \$10.50 to \$11.50. Buyers continue to hold off and it appears as if the only factor that would stimulate the market would be cold weather. Hard coal is still quoted at from \$8 to \$16.00 at the mines.

The Kirkland Lake Proprietary, 1919, Ltd.

Ambitious Scheme to Merge Several Mines in the Kirkland Lake Field.

(By J. A. McRAE, Cobalt).

The photograph shown in this article as being the Tough-Oakes Mine, of Kirkland Lake, really constitutes a general view of the leading properties which are either already merged or being negotiated for by the Kirkland Lake Proprietary, 1919, Ltd.

The view is taken from the Wright-Hargreaves mine, looking east. On the immediate foreground, the little group of buildings are those of the Sylvanite property which lies directly between the Wright-Hargreaves and the Tough-Oakes. In the upper left corner is the 120-ton mill on the Tough-Oakes Mine itself. The upper central buildings are also on the Tough-Oakes, while the shaft house as shown to the right is located on the Burnside mine.

Objects of Incorporation.

The Kirkland Lake Proprietary, 1919, was incorporated last year for the purpose of acquiring the assets and undertakings of the English Tough-Oakes, Ontario Tough-Oakes, Burnside Gold Mines, Sylvanite Gold Mines, Aladdin-Cobalt and Sudbury Syndicate. With

In relation to the future plans of the Kirkland Lake Proprietary, 1919, very little if any, really definite information is available in Canada. In fact, practically nothing seems to be known on this side of the Atlantic with regard to what time a re-opening of the enterprise may be looked for and the extent of the work to be expected. Men closely and vitally identified with the enterprise and who reside in Northern Ontario share this dearth of authentic advice in common with the public in general.

A Commendable Scheme.

Regardless of this, however, careful observers are free to admit that this scheme of consolidation is one of the most ambitious ever undertaken in the Kirkland Lake field, and may be second in importance to the consolidation some years ago of the Hollinger properties, as well as the holdings which now constitute the McIntyre-Poreupine. It is pointed out especially for the readers of this journal, that provided the consolidation plan can be worked out in such a manner as to



THE TOUGH-OAKES MINE WITH ADJACENT PROPERTIES.

the exception of the Aladdin-Cobalt which owns the Chambers-Ferland silver mine at Cobalt, the various companies all have their property situated in the Kirkland Lake field, the greater part being shown in this photograph.

This large acreage not only lies along the strike of the main auriferous zone which has won for Kirkland Lake an important place in the gold mining industry of Canada, but on all three of the properties here shown, a good deal of commercial ore has already been opened up. Indeed, it was on the Tough-Oakes that the first successful mining operations were undertaken in the Kirkland Lake district, this property developing to a point where gold was being produced at the rate of over \$600,000 annually. It was only due to more or less bitter and sustained litigation that the mine became inactive while the contending factions battled for control.

Success is Indicated.

Official advice tends to show that the big merger is gradually working out to a successful conclusion, the possible exception apparently being the Sylvanite. As to the question of this property being brought into line, more or less controversy is heard. An interview with one faction encourages the belief that this property will eventually be included. Discussion of the matter with other parties discourages this thought. For these reasons, the question of the Sylvanite becoming a part of the new Proprietary is left for the future to determine.

create harmony between the various interests involved, the great mass of work and vast amount of worry and details to contend with will have been well worth while.

For instance, with such an acreage available on which to develop ore and to carry on extensive exploration work, and with a first class mining and milling plant already on the property the future possibilities of establishing a mining enterprise of leading importance is considered exceptionally good. Also, the operation of these properties under one management, with the elimination of the costly practise of maintaining managerial staffs for each of the several properties alone offers promise of the cost of operation being greatly reduced, as compared with what has been the case where each property was worked individually.

It is obvious, of course, that a great deal of work lies ahead. The present scattered nature of the work, as well as scattered buildings has suggested to the new control that effort must be directed toward centralizing buildings as well as operations. To centralize the buildings will be to minimize the heating cost during winter, while to centralize the mining operations will tend to reduce costs of work.

Some Future Indications.

The progress already made in the merging scheme would indicate the likelihood of everything being in shape for general resumption of work in the early spring at least, with the possible exception of the Sylvanite. Factors in support of this and which may explain lack of general and definite information during the past

year, include the fact that the ending of the current year is likely to be marked by certain changes in the directorate of some of the companies involved, with a quite general revision toward electing boards with such views as may assure harmony.

Therefore, apart from the comment heard in regard to lack of definite information as to future plans, the ambitious scheme briefly outlined is believed to be commendable and seems to be calculated to serve the best interests of all concerned.

THE INTERNATIONAL NICKEL CO.

One furnace at Sudbury is to be closed down, following a decision to reduce the monthly production of nickel matte from 4,000 tons to 3,000 tons. About 300 employees will be rendered unnecessary, but the reduction will not affect the Company's regular staff.

It is announced that the Company will build a mill to manufacture Monel Metal in various shapes. The mill will be situated in Huntington, West Virginia, and will cost \$3,000,000. The great variety of uses to which this non-corroding and physically strong natural alloy is now put is shown by the new monthly publication of the International Nickel Company, the "Inco" a copy of which can be obtained on request.

There is a great and growing demand for a metal that will retain its properties of non-corrosiveness and physical strength when placed under conditions of high temperature, exposure to acid fumes and physical stresses, such as are met with in new developments of the extraction and use of oil-fuel, particularly shale-oils, and Monel Metal, together with other varieties of the nickel-cobalt-chromium alloy group, is daily extending its uses.

Recent rapid lessening of the automobile demand has caused a slackness in nickel demand, which, added to the as yet uncompleted process of diverting nickel from the uses of war to those of peace, accounts for the lessened activity at Sudbury.

If the directors of the International Nickel Co. could have seen their way to add a rolling mill to the Port Colborne Refinery it would have been a judicious and not necessarily uneconomic decision. Presumably fuel costs have been a deciding consideration, but it is desirable, from the Canadian point of view, that more of the final processes of nickel utilisation should be carried on in Canada.

USES OF PEAT.

Devotees of the automobile and motor boat will be glad to know that successful experiments have been made in Sweden in extracting wood alcohol from peat. The process as reported by the commercial attache at Copenhagen, Denmark, is described in a report on peat in 1919 recently issued by the United States Geological Survey, Department of the Interior. Interesting instances of the uses of peat as a fuel are given in this report. A coastwise steamship company of Norway, for example, during the coal shortage, was enabled by the use of peat fuel to keep up its full sailing schedule.

Peat is used also in making up fertilizers and in preparing concentrated food for stock. Last year 69,197 tons of peat, valued at \$705,532, was produced in the United States. This was a decided decrease from the production of 1918, although the peat deposits in this country are extensive.

This report may be obtained upon application to the Director, United States Geological Survey, Washington, D. C.

Our Northern Ontario Letter

THE SILVER MINES.

The Cobalt Field.

Wet weather which set in at the beginning of November is steadily causing the water to rise in the rivers and lakes of this part of Northern Ontario. As a consequence some hope is promised at the time of writing in respect to an improved supply of hydro-electric energy.

The new wage scale at the Cobalt mines went into general effect November 1st, and is believed likely to have a stabilizing influence on the workers. The increase of the flat rate in pay to a point equal to the former rate plus the high price of silver bonus, has eliminated the uneasiness always present at times when quotations for silver showed a tendency to decline.

An outstanding factor in connection with the silver mining industry of this district is a very considerable improvement in the efficiency of the workers. This improvement has become pronounced during the past week or so, and the reason seems to be that the supply of labor has suddenly improved and is now adequate to meet the full demand. There are instances on record where one man is performing nearly as much work, and with apparently no undue effort, as was done not long ago by two men. This may assist operating costs, and to some extent make up for the lower price of silver. Provided the increased efficiency becomes general, it is obvious the effect would be equally as favorable as though silver itself advanced in price.

Cyril W. Knight, Ontario Government Geologist, will suspend his field work in Cobalt this month, and will resume in the spring at the point where he left off. In view of the importance of the work, and on account of it being extended over another year, thus causing delay in the final report, it is hoped to encourage the Department to issue a brief summary this fall, covering in a preliminary way the result of the work to date.

The McKinley-Darragh has closed down its oil flotation plant as is the usual custom during winter months. This equipment will again be employed following the Spring break-up. The reason for Winter curtailment is due to the difficulty attending the pumping of tailings from the bed of Cobalt Lake during cold weather.

Stopping operations on the Camburn Mines, formerly the Lumsden, are being carried on. The richer parts of the vein are being sorted out and bagged preparatory to subsequent shipment. Some of the ore runs about 2,000 ounces of silver to the ton.

Owing to delays caused by shortage of power, the cross-cut work on the Kerr Lake mine has not advanced as quickly as expected, and as a consequence it will perhaps be some little time before development work proves the importance of the high grade veins found at surface some weeks ago. Work is proceeding steadily, though slowly, and the composition of the veins together with the nature of their occurrence leaves little doubt but that they will be found to be important.

Official advice estimates the silver content at 400,000 ounces in the ore now in sight on the Keeley Silver Mines. This reserve has been built up as a result of development work of a considerable less than a year. In view of the property having formerly been considered of only prospective merit, the success achieved seems to offer reason for believing considerable work may be encouraged in all the more promising parts of the

South Lorrain silver area. As stated last week in the "Journal", the new 20-stamp mill has been completed and was then being tried out. Just as soon as the power situation adjusts itself, the entire plant will be utilized to full capacity.

On the Ruby Silver Mine in the south-eastern part of the township of Bucke, the operators are still meeting with encouragement and expect to be able to make comparatively regular shipments of ore. The work is being conducted only on a moderate scale, as yet.

The Lang-Caswell mine in Lorrain was restaked October 28th by J. C. O'Donald of Haileybury. The property was among those listed as forfeited on account of the non-payment of a provincial tax of five cents an acre, a procedure on the part of the Ontario Department of Mines that has aroused quite general resentment in all parts of the country.

Letters to the "Journal's" correspondent from the United States from interests whose property was involved in the general listing of forfeitures openly declare a loss of confidence in Ontario mining laws. It is believed in Northern Ontario that the affair has caused very great injury to the general effort to encourage foreign capital to enter this field.

Gowganda and Elk Lake.

A. G. Burrows, Ontario Government Geologist, has prepared a report on the Gowganda Silver Area, the entire summary being presented in the 29th annual report of the Ontario Department of Mines. The report deals with the leading properties, and estimates production to date at approximately 5,430,152 fine ounces of silver. Output reached its highest point in 1917 with 1,064,635 ounces. The second highest year was in 1919 when 722,564 ounces were produced.

The Burrows report goes into considerable detail when dealing with the leading property the Miller Lake-O'Brien. The details presented, also, seem to refute former reports that the O'Brien interests practised the policy of being uncommunicative in regard to the property and the occurrence of the ore. The opposite appears to now be the case in the light of the report just submitted by Mr. Burrows.

Work on the Cane Silver Mines is proceeding, and silver values are said to persist to the depth so far reached namely about 25 feet.

Elk Lake prospectors endeavored to re-stake the Cane township claims of the Ontario Solid Silver Mines, at noon on October 28th, but found the Department had withdrawn the group from forfeiture before the designated hour.

Ore and Bullion Shipments.

During the week ended November 5th, four Cobalt companies shipped an aggregate of seven cars containing 609,115 pounds of ore. The Nipissing headed the list with four cars, while the feature of the report is the appearance of the Bailey Mines for the first time.

Following is a summary :

Shipper	Cars	Pds.
Nipissing	4	325,786
La Rose	1	109,992
Bailey	1	87,116
McKinley-Darragh	1	86,221
Totals	7	609,115

THE GOLD MINES.

The Porcupine Field.

A brief financial statement issued by the Dome Mines for the five months beginning March 31st and

ending August 31st, shows a net profit of \$198,000, an amount equal to 49 cents a share, or at the rate of close to 12 p.c. a year on the company's 400,000 issued shares, of \$10 par value each. A feature of the statement is the large amount written off for depletion, depreciation and taxes. This amounted to \$307,849 and is at the rate of \$738,800 a year. Such liberal allowances are pointed to as a policy which tends to minimize the profit, and that with a less liberal writing-off, the percentage of net profit could easily have been shown to be a good deal higher than 12 p.c. Development work at the mine is proceeding satisfactorily, although low water on the Temagami River has conveyed a threat of a shortage of electric energy. The arrival of wet weather may now avoid this difficulty.

Ore reserves on the Porcupine V. N. T. Mines are officially estimated at 130,000 tons, and believed to contain about \$1,250,000. This has been placed in sight as a result of development work to a depth of 600 feet. The plan of future operations is to continue the main shaft to a depth of 900 or 1,000 feet, and to so enlarge the scope of work as to make it advisable to enlarge the present 100-ton mill to 150 tons daily, with the ultimate object of doubling the capacity. Work is to resume just as soon as the terms of the recent underwriting agreement are concluded whereby a block of treasury stock, amounting to 200,000 shares at 30 cents per share is taken up. This will provide the company with funds estimated to be adequate to place the enterprise on a self-supporting basis.

Negotiations for the Davidson Consolidated control are still pending. H. H. Sutherland, of the firm of F. C. Sutherland & Company, is now on his way to England in connection with the deal. The plan is to dispose of the entire undertaking to certain English interests who are already heavily interested.

Kirkland Lake Field.

It is officially announced that high grade ore has been found on the Ontario-Kirkland property, at a point west of a fault encountered in the earlier stages of work at the 450-ft level of this property. Assays taken on ore from the first round show a gold content of \$73 to the ton. The find is considered to be important, and the result of work at this point during the next few weeks may have considerable bearing on the general merit of not only the Ontario-Kirkland, but all other properties lying in its vicinity and along the southern belt of mineralization.

In this southern belt are the Ontario-Kirkland, Canadian-Kirkland and the Hunton-Kirkland, the latter of which is also developing rich ore in its underground workings.

Just as soon as the temporary shortage of electric power becomes adjusted, a general increase in work is expected at the leading mines of the Kirkland Lake field. The Teck-Hughes is planning to add another shift of workers, and increase its tonnage to over 3,000 tons monthly. The Kirkland Lake Gold Mines is also planning to increase the amount of ore going through its mill, while the Wright-Hargreaves will join the producing mines early in the new year.

Arrangements are being made to prepare for a campaign of exploration work on the Vindicator Gold Mines. This is made up of two promising mining claims lying adjacent to the Wright-Hargreaves and the Lake Shore Mines on the North. The Vindicator is controlled by interests already involved in the leading mining operations of the Kirkland Lake district.

On the Lake Shore, the main shaft has reached a depth of 500 feet. The objective is a depth of 800

feet. Heretofore, work on this property has been confined chiefly to the 200 and 400-ft levels, sufficient ore being developed at these levels to keep the present mill operating for a number of years. The most remarkable feature has been the high grade nature of the ore, and the maintaining of average mill heads of over \$25 per ton. Interest is unusually keen in connection with the prospects of duplicating these favorable results at great depth, and the work of extending the shaft to a lower horizon is regarded to be among the most important and interesting developments under way in this field.

At the end of the current calendar year, a change is indicated as likely to occur in the directorates of certain of the companies involved in the merger by which the English Tough-Oakes, Burnside, Sudbury Syndicate, Ontario Tough-Oakes, Aladdin-Cobalt and possibly the Sylvanite will be brought under the control of the Kirkland Lake Proprietary, 1919, Ltd.

A geological report has just been issued by the Ontario Bureau of Mines, dealing with the geology on the Argonaut Gold Mine, at Beaverhouse Lake. The report was prepared by Cyril W. Knight and contains much useful and interesting data. It seems to place the Argonaut in a favorable light. Since the notes were gathered on which the report was based, considerable underground work has been done and a quite large tonnage of ore blocked out. Work centered largely at the 200-ft. level, and has recently been extended by starting the shaft to deeper levels, the 500-ft being the objective.

British Columbia Letter

Victoria B. C.

A Provincial Election will take place on December first. Much interest is taken in questions relating to the mining industry. Under the administration of the past four years, during which time Mr. Sloan has been the Minister of Mines, improvement of the mining law has been given much attention, and among the more important matters dealt with are the division of the Province into Mineral Survey Districts, with a Mining Engineer in charge of each district; the expenditure of public money on aid to the construction of mining roads and trails, the financial assistance of experimental work in the treatment of the magnetite ores of British Columbia, and the passage of legislation making it possible to control the sale of mining stocks so as to safeguard the investor against fraud.

Other forms of aid that are being pressed upon the provincial government include several requests from the Cranbrook Prospectors Association, who ask for a customs ore-sampling plant in the Kootenays, for powder for prospectors at cost, plus transportation charges, and for still further aid to mining roads and trails. They also suggest an annual or semi-annual conference of representatives of the prospectors and mining men and the Minister of Mines with regard to matters affecting the industry. Some of these requests are reasonable and will doubtless be so regarded by the Government.

For some years the ownership of the most promising molybdenum properties of British Columbia, which are situated in the Alice Arm District, has been the subject of litigation. Because of the legal tangle these deposits, referred to as favorable by George Clothier, resident mining engineer, were permitted to remain

undeveloped and unproductive during the war, the period when the mineral was much in demand and the prices high.

The issue now appears to have been settled, at any rate it is closed as far as the Supreme Court of British Columbia is concerned. The action is known as Stewart vs. the Molybdenum Mining and Reduction Company Ltd., and Chief Justice Hunter, who finds for the Company, says in his judgment:

"I think that the plaintiff Hayes had no right of action against the Company. As to the other plaintiff, I am of the opinion that the Conundrum Claim (one of the claims of the group) lapsed on June 13th, 1915 and was not revived by the Exemption Act, 1915. The Conundrum ground was re-located and recorded by Riel and his associates, who conveyed it to the Company, but the Plaintiff rests his action mainly on the Agreement of August 19th, 1915, by which the co-owners of the Conundrum and Hayes, the owner of the Blackwell, agreed to sell these claims for \$35,000 to Riel."

Later on the Chief Justice says:

"Moreover it appears to me that the action of Riel in locating and dealing with the new claims was acquiesced in by the plaintiff and this view is strongly corroborated by the giving of the subsequent Agreement to Riel pending the litigation.

"At any rate the Plaintiff stood by while large sums of money were expended on the ground without notifying either the Stilwells or the Company that he had any claim against them or it and the principle applies that if a man is silent when in fairness he ought to speak he must remain silent when in fairness he ought not to speak."

Vancouver B. C.:

The suits predicted with reference to the Engineer Mine, of Atlin B.C., one of the best known lode-gold propositions of the Province, are before the courts. W. L. Goodwin, and eleven other prospectors, have taken out a *lis pendens* to prevent the sale of the property until their claims can be brought before a Grand Jury, is being suggested that a sale for \$3,000,000 to Cobalt interests is in negotiation. Mr. Goodwin and his associates assert in effect that they, and not the estate of the late Captain Alexander, are the lawful owners of the mine. Twenty years ago, it is declared they staked the claims now known as the Engineer Group and Capt. Alexander, it is alleged, staked over them, altering the lines and making the eleven claims which afterwards were known as the Engineer Claims. It is, therefore, set up that their property was fraudulently "jumped" and recorded and that Crown Grants were wrongfully issued to the Alexander party. The second action against the estate of Captain Alexander is brought by W. Pellard Grant, of Vancouver, who claims a one-fifth interest in the Mine and affirms that documents in his possession will prove that Capt. Alexander was his trustee for the one-fifth interest in the Mine referred to. Mr. Grant states that one of the business matters bringing Capt. Alexander South when he met death through the foundering of the S. S. Sophia was to arrange for the transfer to him of this interest.

The Canadian Advisory Council for Scientific and Industrial Research has made an appropriation to permit an investigation and the carrying out of experiments in the treatment of the silver-lead-zinc ores

of British Columbia. Mr. Horace Freeman, Chemical and metallurgical engineer, and secretary of the British Columbia Branch of the Council, states that the grant is sufficient to cover the first twelve months work. Mr. Freeman will begin his researches immediately and is hopeful of finding an economic method for the handling of the complex sulphide ores of the Province, particularly its eastern districts. Mr. Freeman is responsible for a formula, now in use at Niagara Falls, for the making of cyanide from atmospheric nitrogen and the product is in use in gold and silver extraction in the United States and Canada. The Plant at the Falls was erected under his supervision. He also initiated at Vancouver research work that led to the preparation and use of hydro-cyanic gas for fumigation, now utilized for the fumigation of citrus trees in California.

The Liberator Mining Co., owners of the Emancipation Mine, near Hope B. C., are proceeding with the development of this property with satisfactory results. Edwin T. Hodge, under whose supervision the work is being conducted, is very optimistic. Considerable has been spent in the installation of a Compressor Plant, and an Assay Office. A tunnel is being driven at the rate of about 10 feet a day with the object of cross-cutting five high grade ore shoots which are shown in the old workings situated at a higher level. There is said to be a large tonnage of low grade milling ore already in sight with prospects of enough of the high grade to pay for development until the Company is in a position to undertake the treatment of the first mentioned.

The Northwest Mining Convention is to be held from February 28th to March 5th, 1921, at Spokane Wn. Preparations already are being made by the mining men of the City of Spokane.

Grand Forks B. C. :

Diamond drilling on the Gloucester Group and the G. H. Claim of the Franklin Camp, near Grand Forks, which has been in progress for some months under the direction and the supervision of the Provincial Department of Mines has ceased. The contractors have decided that it will be impossible to continue during the Winter, but P. B. Freeland, government mining engineer, is looking forward to seeing the work taken up again in the Spring. A total of 2,888 feet of drilling was done in the Camp, most of it on the two properties mentioned, although some work was done on the Mountain Lion Claims. No statement has been made as yet as to the results of the work.

Princeton, B. C.

That a vein of platinum, four inches wide and thirty feet long and in a seven foot ledge of serpentine rock, exists at the headwaters of the Tulameen River is the assertion of Robert Stevenson, one of British Columbia's pioneer prospectors, who is one of the few remaining to take part in the gold stampede of the '60's into the Cariboo and who continues hale and hearty at the age of 82 years. This find was made, Mr. Stevenson states, in 1877 and ever since, year after year, he has kept the claim alive. With platinum at 50 cents an ounce he did not pay special attention to the development of the property but in recent years he has been active in the endeavor to reach the mineral which, it appears, has been covered first by a fall of timber and next by a landslide. Now, however, he asserts that the vein is almost in sight and he has taken a gang

of men with him to finish the work. He is confident that his goal will be reached this year or early in 1921 and, with a store of platinum at his command, worth approximately \$100 an ounce, anticipates that his old age will not be without those comforts with which an active life should be rewarded.

Trout Lake, B. C.

In the development of their property in the Lardeau District near Trout Lake the Mansfield Mining Company has uncovered a large vein of silver-lead ore. It was encountered at a depth of 350 feet, according to M. R. Leahy, the manager, and is low grade, assay returns being about \$12 a ton. The Company contemplates the installation of a Concentrator.

Nelson, B. C.

The Millie Mack, a property situated on the Arrow Lakes, is being worked up by H. E. Foster and some 50 tons of high grade ore is ready for shipment. This is one of the oldest shippers of the district and its ore is silver-gold, with the silver returns running high.

Hazelton, B. C.

J. D. Galloway, resident mining engineer for the northeast mineral survey district of the Province, recently inspected the Babine Bonansa property of J. Cronin. He states that Mr. Cronin has opened up a promising vein as a result of the tunnel work in progress for some time. It has been decided to continue drifting on the vein by hand until the arrival of machinery. Owing to the recent rains the roads into the section are in bad conditions and it is difficult to get supplies but the government has men out making repairs.

Stewart, B. C.

The Premier Mining Co. plans to ship a considerable tonnage of ore from the Salmon River District, Portland Canal, this winter over the snow. Other properties, under development in the same locality, also are preparing to make shipments in the same way. Prospects in the Tide Lake region have caused some excitement because of high returns in silver given by samples sent out for assay. These are narrow veins but the richness of the ore is unusual even for this district. Preparations have been made to work the Hercules Group all Winter. Considerable valuable ore was taken from the Silver Tip Group where a camp was established under the direction of P. W. Racoy during the summer. The Algonic Syndicate in its development of the Spider Group has installed an internal combustion engine for the operation of the air compressor and the tunnel now has been driven 600 feet. Both the United States Government and the Government of British Columbia have done much road work in the district this year and the district has been made more accessible for mining operations as well as for prospecting.

Dawson, Y. T.

With reference to the Maye Silver Camp, some 200 miles from Dawson City, Lt.-Col. Alfred Thompson, M. P. for the district, states that he will ask the Dominion Government to build a road into the discoveries, provide either wireless or ordinary telegraph communication, and instal an assay office. Col. Thompson anticipates that the development of the silver deposits will bring the Yukon into prominence again as a mining centre and will assure Dawson that permanence which the placer industry fails to do.

Juneau, Alaska.

A property which gives promise of developing into an important gold producer has been recorded and now is being opened up on Chicago Island. Work is being continued throughout the Winter by the Falcon Mining Company. A tunnel has been driven for 220 feet and it is said that the showings are so encouraging that the owners are looking forward to commencing shipment in a short time and are confident of the success of the enterprise.

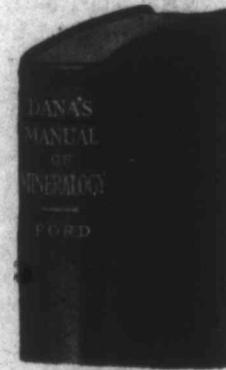
THE COAL MINES.

After the storm of October in the coal mining camps of Alberta and eastern British Columbia the collieries have settled back into normal conditions. Most of the mines are operating as near to capacity as the availability of labor permits. It is reported that in the Crow's Nest Field there has been some dissatisfaction among some of the men because of charges of discrimination in the re-engagement of those who went on strike but these are minor troubles not expected to develop into anything serious. All through Alberta and British Columbia coal is being brought to the surface and shipped probably in as large quantities as ever before in the history of the industry in western Canada. It would appear, therefore, that there is no cause for apprehension on the score of lack of fuel for domestic and industrial use in this section of the north-west during the winter.

The demand for British Columbia coal outside of the Province continues. One of the latest export orders to be accepted is for 7,500 tons to be delivered at Auckland, New Zealand, and it is stated that the Steamer Waihora has been chartered to carry it. The call for Vancouver Island coal for the mercantile traffic of the Pacific also is increasing; in short there is no lack of market for the product of these collieries, rather the difficulty of the operators is to get it out in sufficient quantities.

A short time ago a syndicate of businessmen undertook the re-opening of workings, known as the new East Wellington Slope, on property adjoining the Jingle Pot Mine, recently closed down because of exhaustion. There are several hundred acres of coal bearing land in the particular area in question and good prospects for the development of a first-class mine. The operators, however, met with a setback at the start, one of the coal miners being seriously burned. Open lights were in use. It is understood that the Inspection Branch of the Department of Mines has insisted on the use of Safety Lamps in future. This is being given as the reason for the cessation of operations. According to report, however, the work has been closed down only temporarily.

That the Canadian Collieries (D) Ltd., owners of large areas of coal bearing lands on Vancouver Island, are contemplating opening up new sections is indicated by drilling work that is in progress at Sable River, near Union Bay. A number of holes have been driven and the results are said to have been quite satisfactory in some cases. Similar explorations are being carried on in other districts and word of the Company's plans with regard to the opening of the new mines is being awaited with interest.



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C.M.J.—11-12-20.

PRECAUTIONS DESIGNED TO SECURE GREATER SAFETY IN BRITISH COLUMBIA COAL MINES.

Early in 1917 there occurred an explosion in No. 3 Mine, Coal Creek, Crow's Nest Pass Coal Company, which caused the death of thirty-four coal miners.

The newly appointed Minister of Mines, Mr. Sloan, immediately got to work and, with the assistance of Mr. George Wilkinson, shortly before appointed Chief Inspector of Mines, formulated a comprehensive and sweeping policy for the improvement of working conditions in the Crow's Nest Pass Coal Fields as well as in other active coal fields of the Province.

Some of the improvements introduced in connection with the mines of the Crow's Nest Pass District, and which reduced to a minimum the danger to the underground worker in this section, may be summarized as follows:

- (a) Cleaning out of the main haulage roads and treating them with second burned ashes.
- (b) Installation of rock dust barriers at the District Entrances in order to localize the effect of an explosion should one occur.
- (c) Installation of a water sprinkling system to permit the constant use of water at the working faces.
- (d) The improvement of the condition of the airways and the increasing of ventilation through the underground workings, thus reducing materially the percentage of gas in the return airways.

The Rice Report on "Bumps" at Crow's Nest Pass Collieries.

It was at the time that this work was under consideration and being initiated that the report of Prof. George S. Rice, of the American Bureau of Mines, who had been deputed to make an investigation of conditions in the Crow's Nest Pass Coal Field, with particular reference to the seismic disturbances common to the district known as "bumps," came to hand.

The findings of Prof. Rice are contained in detail in a special report issued by the Bureau of Mines in 1917, which is available to the public on application. He declared, it may be stated, that the Crow's Nest Coal Field proper was the most gaseous in the world, and made a number of recommendations on which the Department of Mines acted and others which were made the subject of research and consideration.

One was that, if less coal was taken out in initial operations, leaving a large proportion for removal when in retreat, there would be less likelihood of "bumps" taking place. Another was that rash and top coal should be taken down as mining proceeded.

Reduction of Gas Content in Mine Air Necessary.

Professor Rice laid stress on the large flow of gas in the Crow's Nest Mines and one of the first actions of George Wilkinson, Chief Inspector of Mines, who had the benefit of the cordial co-operation of the Crow's Nest Pass Coal Co., in this and other work undertaken in the same direction, was to institute experiments as to the bearing of the breaking of coal on the gas flow.

His tests of the mine air, taken over a long period, both while the mine was active and inactive, indicated that there was little relationship between the breaking of coal and the volume of gas given off, the coal of the region being saturated with gas as a sponge may be with water, which it is continually bleeding.

The reduction of the percentage of gas in the underground workings of the Crow's Nest Pass Mines was the chief problem with which the Minister of Mines

and officials of the Department of Mines had to grapple. To make conditions safe for the miners it was of first importance that this should be solved and the Chief Inspector, backed by his Minister and assisted by the management of the Company, set to work to accomplish it.

The enlargement of the system of ventilation, both in respect of the volume of fresh air forced into the mines and in the improvement of the facilities for its free distribution underground, was the best method, in the opinion of Mr. Wilkinson, to keep the percentage of gas down to well within the safety zone. This line of action was adopted, special attention being paid, in working out the details, to providing more "splits" than usually are considered necessary and reducing the number of working places in each "split."

As soon as this plan was given effect, underground conditions became much more satisfactory, particularly in regard to the percentage of gas in the return airways of the mines.

Confirmation of these gratifying results is contained in the report for 1918 of Andrew Strachan, Senior Mines Inspector, who says:

"The percentage of methane in the various air-currents is fairly low, as shown by the Burrell Gas Detector, only in four cases rising above 1 per cent namely, South level split, No. 3 mine; No. 1 South; North Split, No. 1 East; and the incline split, B. North, of Coal Creek Mines."

With further reference to the question of the gas content of mine air, a problem, as has been stated, to the solution of which intensive consideration was given because of its bearing on the safety of the lives of the miners, it was decided that a rule should be applied to all the collieries of the Province requiring that the men be withdrawn as soon as the mine air in any working place showed a percentage of 2.5 methane or greater. This regulation was a part of the Act amending the "Coal Mines Regulation Act" which was enacted by the Provincial Legislature early in 1919. It has been the law since then and undoubtedly the additional safeguard it furnishes the miners is understood and appreciated.

Researches in Relative Significance of "Gas-Caps."

For convenience in establishing when this percentage of gas is present it was found, as a result of months of research, involving of many analyses of mine air and their comparison with gas caps on safety lamps, that a 5/16 inch gas cap in the Coal Creek Mine equals the 2.5 percentage fixed as the point at which the men must be withdrawn. In the Coast and Nicola Districts these investigations proved that a 1/2 inch cap equalled 2.53 per cent of gas in the air. An illustrated report, giving this important information in brief form, was published and circulated among those known to be interested. There are still some copies available which will be gladly forwarded on application to any who may care to know more of this work.

Treating of Coal Dust.

The coal dust menace was another phase of coal mining in the Crow's Nest that had to be taken into account. Next to the reduction of gas percentages it was the most serious of the department's problems. It was to eliminate the danger that previously has always threatened from this source that it was decided that the main haulage roads would have to be cleaned out and treated with second burned ashes and that it would be necessary to instal a water sprinkling system that would permit of the use of water at the working faces. Both these innovations have had the effect of keeping

the underground workings comparatively free of coal dust. The inflammability of this material is a matter of such common knowledge, and it is so clear that its presence must constitute an added danger where there is possibility of an explosion, that the value of the improvements scarcely need further emphasis.

Rock Dust Barriers.

Having done everything that appeared practical to safeguard the workers in a general way, the Chief Inspector of Mines decided that if, in the face of all these precautionary measures, an outbreak were to occur, such steps would be taken as would be likely to confine its effect to the district of its origin. Hence the placing of Rock Dust Barriers at the District Entrances. These are so adjusted that, in the event any disturbance within the area of a Mine District, a curtain of rock dust is precipitated into the air and the advancing flames probably would be smothered before reaching other sections of the mine or at least so far checked as to give the miners an opportunity to escape.

Flame Lamps Displaced by Electric Lamps.

Another move along the lines of "safety first" was the displacement by the Edison Electric Lamp of all forms or types of flame lamps heretofore used in the Crow's Nest Pass Field. Before the Wolf Safety Lamp was used and, while in its time it was about the last word as an instrument for providing safe coal-mine illumination, the development of the electric lamp admittedly has given to the collieries something safer and as dependable.

This insistence on the use of nothing but the best type of safety Lamp wherever the slightest possibility of danger existed was applied, not only to Eastern British Columbia, but to all the Province. When the Coal Mines Regulation Act was amended in 1919 it provided for the introduction of an approved Safety Lamp "in any mine where the air current in the return airway from any ventilating District in the mine is found normally to contain more than one-half of one per cent of inflammable gas."

The acquirement of the Burrell Gas Detector was another step forward. This was first put into use in the Crow's Nest District but it since has been furnished all Provincial Inspectors of Mines for the facilitation of the discharge of their duties. A modern instrument approved by the United States Bureau of Mines for the quick and accurate analysis of mine air it has proved very useful in the experiments carried on by the department. It has proved, in fact, indispensable for the quick determination of the percentage of gas in mine air and has filled a much felt want as previously it has been necessary to send samples to Ottawa for analysis, which meant a wait of several weeks for the returns.

Regulations as to Winding Ropes.

In discussing generally additional safeguards drawn around the coal mining industry in this Province through the 1919 amendment to the Coal Mines Regulation Act reference should be made to the stringent regulations introduced relative to cables or ropes used in the mines for the conveying of miners and other employees. Attention was directed to this matter, as one requiring special action, through the accident which occurred in Protection Shaft, Canadian Western Fuel Co., on September 10th, 1918. Following a very searching inquest, which resulted in a verdict that the cause was a defective cable, Mr. Sloan ordered a special inquiry to be held at which expert testimony was given. The cable, the breaking of which was responsible

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for the accident, was taken by William Fleet Robertson, Provincial Mineralogist, to an eastern laboratory to be tested. Mr. Robertson's report is a matter of record and the outcome was the amendment of the Act to provide that "every winding rope shall be given a bath in hot oil before being installed. Every winding rope shall be recapped at intervals of not more than six months—and that no winding-rope which has been in use for more than TWO YEARS or which has been spliced shall be used for raising or lowering persons." The latter point is especially notable because in no other part of the world is the winding rope granted so short life in the interests of safety. The period granted in Great Britain is three and one half years. Another amendment bearing on the maintenance at a high state of safety and efficiency of mine conveyances is that providing that "all cage-chains in general use shall be annealed once at least in every six months, and detaching hooks shall be cleaned and refitted once in every three months."

Another change of importance, also in the interests of safety, is that which gives a clear statutory definition of the duties of a Fireboss in a coal mine. The stipulation is made that this official shall not be assigned a district of such size as to prevent him from carrying out his inspection duties in a thorough manner. Further it is set out that "every Fireman shall devote his whole time to his inspection duties except where the duties assigned to or undertaken by him in addition to his inspection duties are not such as to prevent him carrying out his inspection duties in a thorough manner." This amendment was designed to do away with the complaint that Firebosses frequently were required to attend to a multitude of duties in addition to their inspection responsibilities with the result that the latter were apt to be neglected. Often Inspectors of Mines, in censuring Firebosses, were given the reply that they had so much work to do that possibly matters at the working face were being neglected. The continuance of such a condition could not be tolerated, hence the amendment with its terms so lucid and detailed as to be beyond misunderstanding.

The establishment of a Minimum Wage Board is another of the provisions of the 1919 amendment to the Coal Mines Regulation Act. It became effective on the 1st of July last and since the organization of the Board has been in progress and is expected shortly to be completed so that it may make an early start on its duties. There will be three members, one appointed by the Coal Mine Operators, another selected by the Coal Miners, and the other being the Chief Inspector of Mines, who shall act as Chairman.

Under the Act this Board has power to define Coal Districts within which to carry on investigations as to wages paid on which to base judgment as to the equity of the schedules of pay found to be in force.

The statement is frankly made that it is hoped that the effect of the activities of this Board will be to remove from the coal mines of the Province those Orientals now employed. For years the presence of this form of labor in some of the coal mines of the Province has been the subject of critical comment and it has been his object to find a means of effectually ridding the collieries of these unfair competitors of the white wage earner. The Minimum Wage Board should be able to do this as well as, through its inquiries and work, so keeping in touch with operations in the different coal mining fields as to assure the constant maintenance of a satisfactory standard in respect of wages.

TORONTO MINING STOCK.

Following are average quotations for active gold, silver and oil stocks, on the Standard Mining Exchange for week ending 6th November 1920.

	High	Low	Last
SILVER			
Adanac Silver Mines, Ltd.	21/4	17/8	17/8
Beaver Consolidated	39 1/2	37 1/2	39 1/2
Crown Reserve	22	22	22
Foster	1/2	1/2	1/2
Great Northern	2	2	2
Hargraves	3	3	3
* La Rose	26	26	26
McKin.-Dar.-Savage	49 1/2	47	47
Mining Corp. of Can.	1.70	1.65	1.67
Nipissing	9.75	9.50	9.50
Ophir	17/8	13/4	17/8
Peterson Lake	11 1/2	11 1/2	11 1/2
Temiskaming	32 3/4	32	32 3/4
Trethewey	27 1/2	24	27 1/4
GOLD			
Apex	17/8	13/4	17/8
Atlas	10	10	10
Dome Extension	45	42 1/4	45
Dome Mines	14.10	12.75	14.00
Gold Reef	33/8	31/8	31/8
Hollinger Cons.	5.65	5.50	5.60
Hunton Kirkl'd G.M.	10	10	10
Keora	16 1/2	16	16
Kirkland Lake	44	39	43 1/2
Lake Shore M. Ltd.	1.08	1.04	1.08
McIntyre	1.96	1.92	1.94
Moneta	10	10	10
Newray Mines, Ltd.	5	5	5
Porcupine Crown	23	22	23
Porc. Gold...EX.R.	1	1	1
Porcupine V.N.T.	23	22 1/2	23
Preston East Dome	2 1/2	2 1/2	2 1/2
Thompson Krist	7	6 3/4	6 3/4
West Dome	5 7/8	5 1/2	5 7/8
West Tree Mines Ltd.	4 1/2	4	4
Wasapika Gold M. Ltd.	10 1/2	9 3/4	10 1/2
OILS.			
Rockwood Oil, Gas	3 1/2		
Vacuum G.	30	27 1/2	28

*Odd lot

METAL QUOTATIONS.

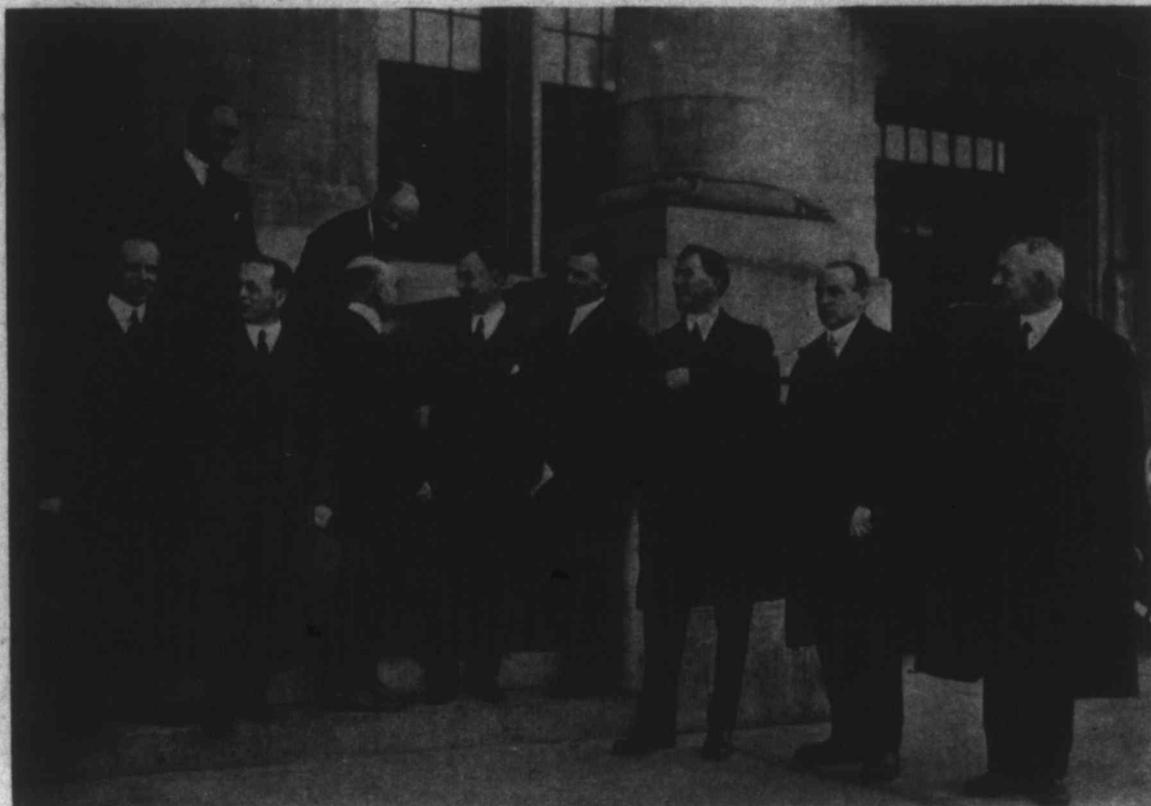
Fair prices for Ingot Metals in Montreal Nov. 10th, 1920. (In less than carload lots).

	Cents per lb.
Copper, electro	19 1/2
Copper casting	19
Tin	46 1/2
Lead	8
Zinc	9
Aluminum	34
Antimony	8 1/4

PERSONAL

Mr. G. R. Airth, Managing Director of the Anglo-French Exploration Company, of London, Eng., has arrived in Toronto and is the guest of Mr. John B. Tyrrell, Mining Engineer, Confederation Life Building.

24



EARLY BIRDS AT THE WINNIPEG MEETING OF THE C. I. M. & M.

(What the President said will never be known).

This group was taken by the camera man of the Winnipeg "Free Press". Names of those included are as follows: Back row, left to right—G. R. Bancroft, superintendent of transportation, Mandy Mine, Northern Manitoba; C. Emerson, late coal manager for the Cerro de Pessa Mine, Peru. Front row—Dr. J. A. Allan, professor of geology, Alberta University; Prof. J. S. De Lury, geological department, Manitoba University; President O. E. S. Whiteside, manager International Coal company, Coleman, Alta.; F. W. Gray, editor of the Canadian Mining Journal, Montreal; R. R. Rose, acting-secretary of the Canadian Mining Institute; R. C. W. Lett, industrial and colonization agent, C. N. R., Winnipeg; B. Westcott, immigration agent C. N. R., Edmonton; Dr. E. M. Burwash, geological department, Alberta University.

"THE TIN DEPOSITS OF VIRGINIA, U.S.A."

To the Editor of the
"Canadian Mining Journal".

Concerning Mr. Alex. Gray's difference of opinion on the merits of "The Tin Deposits of Virginia" published in the Journal of October 8th, page 816, I desire to state that I fear that Mr. Gray has drawn the conclusions on the merits of the tin deposits of Virginia from his unprofitable mining venture in this section some fifteen years ago. The publication of the state and U. S. Geological Surveys presents the matter in a more "roseate" manner than I did in my article yet Mr. Gray thinks his experience "will serve to negative the roseate presentation of Mr. Haney"? This section offers superior advantages for profitable tin mining and compares favorably to the deposits of Cornwall, Eng.

Yours truly,
MARSHALL HANEY.

Geer, Va.

The following item is taken from a well-known newspaper:

"Globular Salts Discovery.

Just as Regina Beach, 40 miles north of here and famed as a prairie summer resort, was retiring for its

winter nap, the citizens of that village have been brought to life with thrills of excitement.

Globular salts have been located, and a rush has developed. Every available inch of ground is being staked by prospectors, and every hour people are arriving to join the fortune that for years remained unstated the salts were worth \$60 a ton, later this figure was cut to \$5 per ton, but still the excitement grows despite the drastic reduction."

Page the pale shade of Johann Rudolf Glauber. They may be different at Regina Beach, but the usual reaction to decahydrated sodium sulphate is not characterised by thrills of excitement.

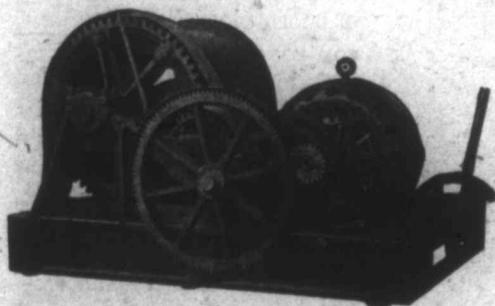
The development of the plans of the Coalmont Coal and Coke Company is proceeding satisfactorily. The aerial tramway and electric light and power plant should be completed this year, or at least early in the new year, at the present rate of progress. Four of the tramway cables are stretched and the buckets and other equipment is on the ground. Two large marine boilers will supply power for the electric plant, which will be housed in a new building of pressed brick and steel. Light and power is to be furnished both for the mine plant and for the town. A water system is to be installed.

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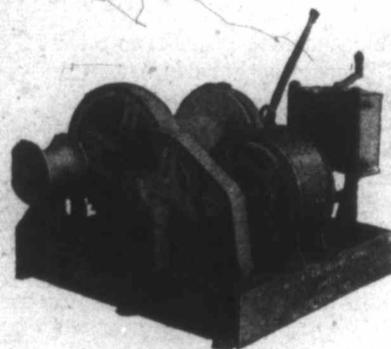


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ASBESTOS MINING NOTES.

(From our Thetford Correspondent.)

The production of asbestos at Thetford Mines, the most important asbestos producing district in the world, has received a serious set back owing to the strike in two mines operated by the Asbestos Corporation of Canada. Men doing ordinary labour demand an increase from a minimum of \$4.00 per day to \$4.50 per day. The Asbestos Corporation has not seen fit to grant this increase, with the result that their Thetford Mines plants have been idle for three weeks. The Company contends that they gave their employees a 25 per cent increase last March and that in accordance with other products there is a tendency to lower prices for asbestos in 1921. The Company therefore feels that they cannot grant this increase of 50c. per day for ordinary labour and a proportionate increase for skilled labour. The men who are organized under a local union refuse to return to work until such time as their increase is granted. The other mines are still operating. One company has met the men's demand and is paying \$4.50 per day. Another company is paying \$4.25 and still another company pays \$4.00. Owing to a shortage of labour throughout the year, it is generally believed that production for 1920 will be considerably lower than the previous year. The present strike will, of course, lower the tonnage of asbestos crude and fibre for 1920. It is generally known that the demand for raw asbestos is far greater than the present supply and with a drop in production, one may reasonably expect higher prices.

One of the large companies in Thetford Mines has recently given a large contract for stripping to the Fraser Brace Company. It is understood that there is a considerable deposit of asbestos-bearing rock in this district, hitherto undeveloped, which has been prospected. The results obtained have evidently been good enough to warrant a large contract for stripping.

Hon. Geo. R. Smith, General Manager and Vice-President of the Bell Asbestos Mines has been recently confined to his bed, but we are glad to report that he is again attending to his business.

Sir John Carson, General Manager of the Consolidated Asbestos Limited is at present in England.

Mr. E. E. Spafford, Manager of the Quebec Asbestos Corporation, East Broughton, has taken a motor trip to New York. We trust he has escaped the snow storm that is prevalent at the mines.

We are just in receipt of the monthly Market letter issued by the Asbestos & Mineral Corporation, 17 Battery Place, New York, who are large Asbestos dealers. They predict higher prices for 1921, and advise the trade to stock up in advance.

Mr. C. Bindman, Secretary-Treasurer of the Canadian Crude Asbestos & Fibre Corporation Limited, Thetford Mines, will be in Montreal shortly.

Mr. T. H. Crabtree, Asbestos Inspector has just returned from a visit to England.

FLOTATION SAVED THE SITUATION.

To the Editor, "Canadian Mining Journal."

With Copper at 15 cents and every mineral industry languishing—cash customers being scarce and metal markets doleful it may not be amiss to emphasize what "Flotation" made possible, even in these "nothing-doing" days.

The very great value of the flotation process evolved under the aegis of Mr. John Ballot, of Minerals Separation, should find a larger appreciation and a clearer

understanding during these times of falling prices, but high costs of production, than when metals were high and buyers plentiful. I believe I am safe in saying, without fear of intelligent fair-minded disproof, that if the use of flotation processes in general were to be discontinued to-day by "all users"—by licensees as well as by those who are said to be infringing or illegally using them—not one of the great sulphide-copper and zinc mines in Canada and the United States could afford to operate under prevailing conditions. Flotation—and flotation alone—is saving them, and making it possible for 90 per cent of that class of mine to live and keep men employed.

Regardless of controversy, and malversations, it is to the originators of flotation that other than precious metal mines survive and are earning profits. Defamation of flotation scientists and capitalists has obscured the facts. Quite recently recoveries by means of flotation have saved the situation at more than one Canadian metallurgical center—and it seems to be quite in order to enter of record these few words of commendation for the much-maligned who accomplished this.

Yours truly,

Montreal.

ALEXANDER GRAY.

O. B. BUSH, PARLIAMENTARY CANDIDATE, ATLIN, B. C.

Mr. O. B. Bush, the well known mining man is to enter the election contest for the British Columbia parliament at the election to be held December 1st. Mr. Bush will contest the Atlin District. The people interested in the mining industry in the Atlin district are anxious that a practical mining man represent them, and have asked Mr. Bush to enter the contest, and he has consented to do so. Mr. Bush is a staunch supporter of the present government.

Being an active mine operator in the North, and prominent as the discover of the Premier Mine, Mr. Bush without doubt will be a good man to represent the district.

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