Canadian mining journal 1908

INDEX

Canadian Mining Journal

Vol. 29

Including the Period

JANUARY 1st, 1908

—TO—

DECEMBER 31st, 1908

The Mines Publishing Co., Limited,

Toronto, Ontario.

Canadian mining journal 1908

BRITISH COLUMBIA.

VANCOUVER.—Johann Wulffsohn, German Consul accompanied by O. Gerle, M.E., is examing the Swede group of copper claims on Moresby Island. Near the Portland Canal district, a molybdenum prospect will be looked into.

VICTORIA.—Mr. E. Lindeman, appointed by the Dominion Government to look into the iron deposits of Vancouver Island, has made a tentative press report to the local papers. Mr. Lindeman is a Swedish expert and is well-versed in the study of iron ore deposits generally.

Mr. Lindeman started on his mission in June 1st of this year. His instructions were to cover the field generally. The task is a large one and it kept Mr. Lindeman moving to accomplish as much as he has. He began by examining the Sooke river deposits. Then he made his way north by the west coast and returned by way of Texada Island. He found very little development work done. On Texada Island, however, he found what he considered the best deposits. These were situated on the Quinsan River, on the Kla-anch River and at Head Bay on Nootka Sound.

Mr. Lindeman especially emphasizes the fact that all of these properties are yet in the category of prospects. Very little has been done, although more has been accomplished on Texada Island than elsewhere.

Speaking of this last named property Mr. Lindeman mentioned that considerable shipments had been made to Irondale, Wash., by the Puget Sound Iron Company.

A magnetic survey of the Kla-anch River deposits indicated the existence of large bodies of iron ore, 50 to 60 feet wide, and extending over 500 feet in length.

The diamond drill is recommended by Mr. Lindeman as the most satisfactory means of exploring. In summing up the possibilities of the country, he is confident that iron ore of good quality exists here in commercial quantities.

Except at Quatsino Sound the ore is magnetite. At that place a low-grade limonite is encountered. Much of the ore will probably average more than 60 per cent metallic iron.

Limestone there is in abundance and coke is readily available at a moderate price. The local market for pig iron should be good. There is, further, the chance of developing a trade with China and Japan.

Finally, Mr. Lindeman recommends the erection of a small blast furnace and a rolling mill. Charcoal could here be used instead of coke. This might be the nucleus of a large and thriving industry.

Bituminous coal has been discovered in the northern Cariboo district. Twenty square miles have been located on the main line of the Grand Trunk Pacific, about ten miles from the Grand Canyon of the Fraser River. Many thin seams have been discovered along with one or two of workable size.

ATLIN.—The steam shovel of the Atlin Consolidated Gold Mining Company, which started work on June 7th, stopped for the season on October 18th. The output of the season amounted to $80,000. A new sluicing station will be made next season farther up Pine Creek.

ROSSLAND.—A. K. Idler has secured a lease of the Evening Star mine. Twenty tons of ore are ready for shipment to Trail.

NELSON.—Excepting the Boundary region, the mining districts are in good shape. Zinc is attracting attention. If the lead bounty is removed there will be large developments in Slocan and East Kootenay. The Vancouver mine, Slocan district, has shipped 900 tons of zinc ore to Antwerp and is selling its lead concentrates to Trail smelter.

The Nelson Board of Trade has put itself on record as being entirely in favor of a renewal of the lead bounty for a further period of five years. The mine owner's memorial is in part as follows:—

"That said lead bounty has, by insuring a stable minimum price, been most effective and beneficial to the lead mining industry, with it to the smelting and manufacturing industries, and consequently to the general commerce of the Dominion.

"That such results have been produced by a relatively small expenditure, as was anticipated, and as was represented when the original request for consideration was made to the Government. Out of $2,500,000 originally voted to be expended in the period of bounty termininating 30th June next, but $616,976.02 have been expended up to 1st December, 1907."

YUKON.

DAWSON.—The Guggenheims will employ many men and teams this winter in hauling 3,000 tons of pipe-line material from Twelve-Mile Landing, on the Yukon below Dawson, to points on the line of the big Twelve-Mile ditch. 4,000,000 feet of lumber will be hauled from the Twelve Mile mill in the spring. The work on the large dam on Bonanza Creek has been finished. From here electrical power will be distributed to the new electric lifts, new devices for working creek bottoms.

MINING NEWS OF THE WORLD.

GREAT BRITAIN.

The use of coal-cutting machines is steadily increasing in the United Kingdom. Thus the statistics show that in 1906 there were 333 collieries employing coal-cutting machines as against 295 in 1905. The total number of machines in use was 1,136 (as against 946 in 1905), of which 451 were worked by electricity and 665 by compressed air; the total quantity of coal obtained in 1906 by the aid of these machines was 10,202,506 tons, an increase of over two million tons as compared with the returns for the preceding year.

For the ten months of the present year, ending October 31st, exports of coal from Great Britain amounting to 54,816,190 tons were made, the value of which is placed at £34,516,460, an increase in value of over eight million pounds sterling above that of the total exports during 1906. This increase is attributed to heavier shipments to France, Germany and Italy.

The thirteenth annual statement of the coal production and consumption in the principal countries of the world has been issued by the Board of Trade. Production was made as follows: United Kingdom, 251,068,000 tons; Germany, 151,914,000 tons; France, 33,762,000 tons; Belgium, 23,232,000 tons; United States 369,672,000 tons. Consumption is shown in the following statement: United States, 361, 492,000 tons; United Kingdom, 174, 329,000 tons; German, 119,282,000 tons; France, 50,298,000 tons; Russia, 25,786,000 tons; Belgium, 22,509,000 tons; Austria Hungary, 21,181,000 tons.

FRANCE.

The Government has increased the annual grant for the pensioning of aged miners, from a million to a million and a half francs.

Canadian mining journal 1908

a corps of trained men whose field observations have developed a keen appreciation of the geologic and economic importance of each mineral product. This has been particularly illustrated in the reports made by Mr. Lindgren and other mining geologists on gold and silver in the volume for 1905 and the reports on the same subjects and also on copper, lead, zinc and quicksilver in the present volume. On the other hand, the mining geologists have obtained and will continue to derive from their statistical work an insight into the industrial and commercial conditions which so largely affect the demand for the different minerals and lead to the search for and the development of the mineral deposits with the geological relations of which their field work makes them acquainted.

The bringing together of these two classes of study of our mineral resources, that of their geology and manner of occurrence, and that of their statistics and economic conditions, is to be one of the special features of the future work of this division.

MINERAL PRODUCTION OF BRITISH COLUMBIA.

By E. Jacobs.

(Continued from last issue.)

The returns are not yet in from all the lead-producing mines, consequently there may be the necessity later of reducing the quantity now shown as the approximate production. On the other hand, the former appears to have been based upon information obtained from the lead smelters of the province, the output of which and the estimated quantity shipped abroad are indicated in the following preliminary figures:—

From.	Lb. of lead.
Hall M. & S. Co's smelter, Nelson	6,329,243
Con. M. & S. Co's smelter, Trail	21,686,079
Sullivan Co's smelter, Marysville, and others	10,631,036
Exported to United States and Europe	7,900,995
Estimated production in 1907	46,547,352

Even should the revised figures, when obtained, confirm the Provincial Mineralogists's estimate, there will still be a decrease in value of this metal of $348,714, of which, however, $140,000 is attributable to the lower average price in 1907 as compared with that of 1906.

East Kootenay's production of lead was about 38,000,000 pounds, the larger proportion from the St. Eugene mine; the Sullivan was the only other important producer in this district. In the Slocan section of West Kootenay, the Whitewater was the largest producer with something like 2,700,000 pounds. The Standard, Vancouver group, Hewitt, and Rambler-Cariboo, were other Slocan producers, while the La Plata, in Nelson mining division, and the Silver Cup, in the Lardeau, also shipped a considerable tonnage of silver-lead ore.

The closing of the Hall Mining & Smelting Company's smelter at Nelson, and a temporary suspension of smelting operations at the Trail smelter while there were labor difficulties at Crow's Nest Pass coal mines, whose coke the supply of coke, in a measure interfered with the production of silver and lead ores.

Copper.

The closing of the Boundary district copper mines, and others in the Nelson and Coast districts, respectively, during several weeks of November and December, effectually prevented an increase in the year's production of copper over that of 1906. There was also a restricted output during the spring, owing to a shortage of coke for the smelters and an occasional insufficiency of railway cars for ore and coke-hauling purposes. These adverse conditions resulted in a decrease of rather more than 10 per cent. in quantity of copper produced. If calculated at the average price for 1906 the loss in value would be nearly $900,000, but as that for 1907 was about three-quarters of a cent a pound higher, the production for this year shows a net loss of only $610,000. When it is remembered that nearly 75 per cent. of the year's production came from the Boundary district, the effect of the closing of its mines during two to three months becomes evident. The Boundary's proportion of the total production of 38,392,000 pounds was nearly 28,000,000 pounds; Rossland and the coast each produced rather under 5,000,000 pounds; Nelson division's share was somewhere about 400,000 pounds. Of the 1,140,000 tons of copper ore shipped by Boundary mines, those of the Granby Company contributed 625,000 tons, of the British Columbia Copper Company 235,000 tons, of the Dominion Copper Company 155,000 tons, and of the Consolidated Mining & Smelting Company 125,000 tons. Rossland camp's ore tonnage was about 280,000 tons, in the following approximate proportions: Consolidated Mining & Smelting Company's Centre Star-War Eagle group 132,000 tons, Le Roi 113,000 tons, Le Roi No. 2 23,000 tons, and sundry smaller shippers 12,000 tons. On the coast the tonnage was approximately 100,000 tons, as follows: Britannia 57,000 tons, Tyee 12,000, Outsiders 9,000 tons, Marble Bay 7,000 tons, Richard III. 4,000 tons, Lenora, 2,000 tons, and sundries 9,000 tons. The Queen Victoria, near Nelson; the Outsiders, Portland Canal, and the Ikeda, Queen Charlotte Islands, were new producers, and the Richard III. and Lenora, Mt. Sicker, Vancouver Island, resumed ore shipping after having been non-producers for several years.

Iron and Zinc.

There was no considerable quantity of either iron or [illegible] shipped during 1907. At Vancouver and Texada Islands a few thousand tons of iron ore were mined and shipped to Irondale, Puget Sound, Washington, U.S.A. The most important event of the year in connection with the iron ores of the province was the examination by Einar Lindeman, a Swedish iron expert, of a number of claims taken up for iron ore on Vancouver Island and vicinity, for the purpose of reporting on them to the Dominion Department of Mines, Ottawa, subsequently [illegible] with the object of ascertaining whether ore and iron ores occur in suitable quantity, variety, and quality, on the coast to warrant the expectation that an iron-manufacturing industry will eventually be established there. Mr. Lindeman's report [illegible] before returning to Ottawa in December he stated that of the many properties he had examined during his five months' work on the coast [illegible]

Canadian mining journal 1908

promising enough to warrant considerable development work to determine the extent of available ore; the quality he was satisfied with, but the quantity remained to be determined.

Shipments of zinc ore and concentrate were not large, and those made were from Slocan mines, several of which are, however, continuing to store the zinc concentrate made in milling ores for silver and lead. The uncertainty as to the final decision regarding the imposition of a duty on zinc ore sent to the United States remains an obstacle to much of this product being shipped to United States smelters. A comparatively small quantity was exported to Europe from a Slocan mine. No progress appears to have been made in the direction of operating on a commercial scale the Canadian Metal Company's zinc smelter at Frank, Southwest Alberta.

Coal and Coke.

The production of coal in 1907 was the largest in the history of coal mining in the province. The net increase over 1906 was 339,000 tons (2,240 pounds), this bringing the year's production of coal disposed of as such up to 1,856,600 tons. All three of the larger companies shared in this increase. There were about 357,000 tons made into coke. The respective approximate proportions of production were:—

Company.	Tons of 2,240 lb. Gross. Tons of 2,240 lb.	Tons of 2,240 lb. Net. Tons of 2,240 lb.
Company.		
Wellington Colliery Co.—		
Extension mines.. 434,000		
Comox mines ... 391,000		
	825,000	795,000
Western Fuel Co.—		
Nanaimo and Northfield mines	500,000	500,000
Totals for Vancouver Island	1,325,000	1,295,000
Crow's Nest Pass Coal Co..	877,442	550,600
Nicola Coal & Coke Co.....	11,000	11,000
Total production in 1907..	2,213,442	1,856,600

The Nicola Coal & Coke Company has been operating only about a year and most of its comparatively small production was of coal taken out in opening its mine. Several other companies will shortly be in a position to mine coal in quantities up to a few hundred tons a day each.

The coke output of the year was 227,000 tons—210,000 tons from the Crow's Nest Pass Coal Company's ovens at Fernie and Michel, and 17,000 tons from the Wellingtons Colliery Company's ovens at Union, Vancouver Island. In this year's estimate coal has been valued at $3.50 a long ton and coke at $6. In former years the respective prices were taken as $3 and $5, but the former are considered by the Provincial Mineralogist as average local market values for 1907.

The foregoing estimate differs from one made by the present writer early in December and sent to another mining journal. During the three weeks that have since elapsed, however, much more information has been obtained, hence the differences in the figures.

THE DEVELOPMENT OF THE LASH PROCESS FOR MAKING SOFT STEEL IN THE ELECTRIC FURNACE.

The Canadian Lash Steel Process Company, Limited, an Ontario organization, capitalized at one hundred thousand dollars ($100,000), and having among its stockholders a number of prominent men in Canada, has just about completed, and will have in operation inside of six weeks, the largest installation of an electric furnace for the making of soft steel ever attempted.

This company has purchased a building at Niagara Falls, N.Y., and is installing therein a fully equipped steel plant, to be operated in connection with a 1,000 horse-power Heroult furnace, for the purpose of making steel by the Lash Process.

The Lash Process consists of making a mixture of concentrated magnetic ores, or iron ore sands, granulated pig iron and carbon, and charging the same into either an electric or O. H. furnace and producing steel. It is not a direct process in the strict sense of the word, but is an ore and pig process, the ore, however, being greatly in excess of the amount of pig iron used, and practically eliminating the scrap, using only such scrap as is made in the regular operation of a steel works.

The amount of pig iron required to make a ton of steel is less than one-half of what is required in regular open hearth practice, when the mixer is used in an electric furnace, on account of its non-oxidizing atmosphere; this feature, coupled with the fact that the rest of the mixture is iron ore, which is, of course, the cheapest source of metallic iron, will produce a ton of steel ingots at a price much lower than they are produced in regular practice, either in the United States or Canada, figuring the electric power required at its regular market price as sold in large quantities.

Canada, beyond a doubt, with its vast deposits of magnetic ores and iron sands, and its water powers, should be able through the development of some such process to become one of the largest steel producing countries, and command an immense export trade. This company having previously made a number of experiments on a moderate scale, in which the results were encouraging, have installed this large plant for the purpose of making a practical demonstration on a commercial basis. The plant was located at Niagara Falls, N.Y., solely for the purpose of gaining time, this location making it possible to procure immediately a building, transformers, and the power required for their installation.

The supervision of the plant is under the immediate direction of Messrs. Fitzgerald & Bennie, of Niagara Falls, N.Y., and Robert Turnbull, of St. Catharines, Ont., the Canadian representative of Dr. Heroult, whose furnace they will installed.

Arrangements are being made with two of the best metallurgical and electrical experts in the world, one from England, and one from the States, to examine the process and make a full report. These experts will have every facility afforded them to watch the operations as the plant as before stated is being completed, with its laboratories, cranes, casting pits, etc., so as to operate night and day at a capacity of from 25 to 30 tons of steel per day. The steel after being cast into ingots will be sent into Canada to be rolled, and not only its chemical composition ascertained but also its physical qualities. The steel will then be shipped into the regular channel of trade.

Mr. Horace W. Lash, the president of this company, and the inventor of this process, has been connected for

Canadian mining journal 1908

Associated Boards of Trade also recommended that the Government establish an assay office at Trail, and purchase the gold and silver for coinage purposes from the Trail Refinery." There is not much doubt but what the latter recommendation will be complied with, while the others deserve serious attention.

At the second annual meeting of the Crown C. & C. Company, held at Spokane, January 23rd, it was given out that 14 veins of coal had been uncovered on the property and that the company would be in condition to ship by September next. The Galbraith at Lundbreck is shipping from 150 to 200 tons daily. This company has some good coal, but not a very extensive working area.

Business is slack along the Crow's Nest just at present, but it is expected that shipments will be increased and other properties put back to work in the next few months. The winter being a mild one and the shut down of some of the metal mines have partly caused this condition to exist.

COAST.

A strike is reported from the Marble Bay Mine, Texada Island at a depth of 860 feet. It is said to be a rich bornite and the body seems to be extensive. Some ore carrying rich grey copper has also been uncovered.

Hon. R. G. Tatlow has introduced a bill to the House at Victoria for a uniform tax on coal products throughout the province, that seems a praiseworthy move. This would do away with anomalies existing under present conditions; for instance, the C. U. P. Coal Company is taxed 5 cents per ton on coal and 5 per cent. royalty, while there are other coal mines in the Province, the usufruct of which is enjoyed free of royalties. It seems only just and fair that all of the coal lands and their products should be taxed in a uniform manner.

[EDITOR'S NOTE.—On the last point we do not agree with our correspondent. It is an open question whether the Crow's Nest Pass land are or are not exempt from royalty. As a matter of fact the company has paid royalty for some years under protest. The matter is discussed on our editorial pages.]

ALBERTA.

COLEMAN.

At two mass meetings of the Coleman Miners' Union 2633 United Mine Workers of America, the following resolution was carried unanimously:—

Whereas, the vocation of coal mining is known to be an hazardous calling as witness the four terrible disasters which recently occurred in the United States, not to recall the immense loss of life in Fernie a few years ago and in Coleman last April when our beloved brothers were snuffed out like a candle, and

Whereas, accidents are continually occurring which maim the workers who follow coal mining, and serve to incapacitate them for thereafter earning a living, and

Whereas, many of those workers have wives and families dependent on them, who are thus left helpless and without an additional charge on their hand, and

Whereas, the unhealthiness of the occupation is beyond question, the low lights with which we are compelled to work, involving a strain that is injurious to the eyes, the confinement which impairs vitality and the unseen dangers that menace, therefore

Be it resolved, that we the members of Coleman Local 2633 U. M. W. of America in mass meeting assembled, demand of the Provincial Parliament that they take cognizance of these conditions and their attendant hardships, and mete out a small measure of justice to the workers in this most important industry of the Province, by passing at the next session of Parliament an eight-hour bank to bank law identical with the law now in force in British Columbia and a Compensation Act along the lines adopted by the Imperial Parliament, and

Be it resolved further, that copies of this resolution be forwarded to Hon. Premier Rutherford, Hon. John P. Marcellus, the Alberta Executive Trades and Labor Council, the District Board, the Fernie "Ledger" and the "Great West."

Whereas, under the present Mines Inspectors' Act, the inspector after examining the mines records his findings in a book provided for the purpose in the company's office. This arrangement prevents to a very great extent, the mine workers from being conversant with same, and

Whereas, under the existing law the visit of the Mines Inspector are times optional with him, therefore

Be it resolved, that we the members of Coleman Local 2633 U. M. W. of America in mass meeting assembled, urge upon the Provincial Parliament the necessity of amending the Mines Inspectors' Act, so that the Mine Inspector shall be compelled to visit each mine in his district, at least, once every six weeks, and post his report at the mine mouth, in the interests of the workers employed therein, and

Be it further resolved, that copies of this resolution be forwarded to Hon. Premier Rutherford, Hon. John P. Marcellus, the Alberta Executive Trades and Labor Council, the District Board, the Fernie "Ledger" and the "Great West."

Whereas, at present there is no law providing that miners shall receive dynamite or patent powders in a condition fit to use in their working places, and

Whereas, there have been many accidents owing to their being compelled, under present conditions, to thaw their own powder,

Be it resolved, that we the members of Colman Local 2633, U. M. W. of America, in mass meeting assembled, draw this to the attention of the Provincial Government, that they may see the necessity of enacting a law compelling mine operators to provide a place suitable for the storing and preparing of powder to be used where the miners may receive it for use when necessary, and

Be it further resolved, that copies of this resolution be forwarded to Hon. Premier Rutherford, Hon. John P. Marcellus, the Alberta Executive Trades and Labor Council, the District Board, the Fernie "Ledger" and the "Great West."

SASKATCHEWAN.

COURTENAY.

John Galvin, vice-president of the United Mine Workers of America is at present in the district organizing the various coal mining camps. For some time past trouble has been brewing between the Manitoba & Saskatchewan Coal Mining Company, of Bemfort, and the organizers of the union movement. This trouble reached a climax when Senator Watson, managing director of the company ordered Vice-President Galvin, off the company's property and informed him that, he would allow no union paid organizer on the premises. Mr. Galvin informed Senator Watson that his men were already members of the union and that if their grievances were not listened to and redress obtained, a Board of Investigation would be applied for, under the Lemieux Act.

The Manitoba & Saskatchewan Coal Company employ about 100 men, and are working a thick seam of lignite coal lying about 80 feet below the surface. The company has installed an up to date plant, which is designed to produce the coal as economically as possible and load it on the cars, as free from all impurities as possible.

Canadian mining journal 1908

A Partial Bibliography of Publications Referring to the Geology and and Mineral Resources of Alberta, British Columbia and the Yukon.*

By J. C. Gwillim, Kingston, Ont.

(*Continued from Last Issue.*)

Boundary and Similkameen.

Bauerman, H.—Report upon the Geology of the Boundary line west of the Rocky Mountains, also geological cross-section. G. S. D. 1882-3-4.

Brock, R. W.—Reports G. S. D. Summaries 1901-02, also geological map No. 828.
Ore deposits of the Boundary Creek district. Vol. V., C. M. I.
Geology of the Franklin district, Vol. X., C. M. I.

Camsell, Charles.—Similkameen district. G. S. G. Summary, 1906.

Carlyle, W. A.—Report on Yale district. M. M. 1897.

Daly, R. A.—Geology of Boundary Line. G. S. D. Summary, 1903.

Dawson, G. M.—Preliminary report upon the physical and geological features of the southern interior of B. C. G. S. D. 1877-78, also maps No. 127 and No. 363.

Keffer, Frederic.—A method of mining low grade ores in the Boundary district. Vol. V., C. M. I.
Mining and smelting in the Boundary. Vol. VII., C. M. I.
Notes on diamond drilling in the Boundary. Vol. IX., C. M. I.
The Emma Mine. Vol. X., C. M. I.

Ledoux, A. R.—Production of copper in the Boundary district. Vol. V., C. M. I.

De Pencier, H. P.—Mine timbering in Knob Hill and Old Ironsides. Vol. V., C. M. I.

Robertson, W. F.—Boundary Creek, etc., etc. M. M. 1900.

Scott, O. N.—Ore deposits of Copper Mountain, Similkameen district. Vol. V., C. M. I.

Wickware, F. G.—The B. C. copper mine and smelter. Vol. IX., C. M. I.

Vancouver Island and Coast.

Best, W. F.—Notes on the economic minerals of Vancouver Island. Vol. V., C. M. I.

Brewer, W. M.—West Coast, Vancouver Island. M. M. 1899.
Mineral resources of Vancouver Island. Vol. VI., C. M. I.
Bornite ores of B. C. and Yukon. Vol. VIII., C. M. I.
Copper ore on Vancouver Island. Vol. IX., C. M. I.
Further observations on, etc., Vol. X., C. M. I.

Carlyle, W. A.—Nanaimo district, B.C. M. M. 1900.

Carmichael, Herbert.—Report, map, and reference list of claims, Southern Vancouver Island. M. M. 1899.
Nanaimo division, Queen Charlotte Islands and Skeena River division. M. M. 1901.
Quatsino Sound. M. M. 1903.
Mount Baker mines. M. M. 1904.
West Coast of Vancouver Island, Great Central Min, etc. (bulletin). M. M. 1906.

Daly, R. A.—International Boundary, Mount Baker, etc. G. S. D. Summaries 1901-1902.

*Dawson, G. M.—North Vancouver Island and adjacent coast, with map. G. S. D. No. 235.

Ells, R. W.—Preliminary report on Graham Island. G. S. D. Summary 1905, and No. 743.

Haycock, Ernest, and Webster, Arthur.—West coast of Vancouver Island. G. S. D. Summary, 1902.

*Kirsopp, John Jr.—The coal fields of Cook Inlet, Alaska and the Pacific coast. Vol. XX., Trans. Mining Engineers.

Le Roy, O. E.—B. C. Coast, Texada Island, etc. G. S. D. Summary 1906.
Preliminary report of a portion of main coast of B. C. and adjacent islands. No. 996. G. S. D. 1907.
Marble Bay mine. Vol. X., C. M. I.

Marshall, Dr. T. R.—Coal and iron deposits of Graham Island, with sketch map. M. M. 1902.

Moncton, G. F.—Notes on mining on the coast of B. C. and the adjacent islands. Vol. III., Fed. C. M. I.

Poole, H. S.—The Nanaimo Comox coal field. G. S. D. Summary, 1905, also M. M. 1906.

*Richardson, James.—Coal measures, east coast, Vancouver Island. G. S. D. Vols. 1871-72, 72-73, 76-77.

Robertson, W. F.—Victoria and Nanaimo districts. M. M. 1899.
Mount Sicker camp. M. M. 1902.
Iron ores of coast and Vancouver Island (bulletin). M. M. 1902.
Britannia mine; Sooke copper mines, and Vancouver Portland Cement Company. M. M. 1904.

Wright, Fred Eugene.—Unuck River mining region of B. C. M. M. 1906.

Kamloops, Nicola, Lillooet.

Colquhoun, A. J.—Notes on the occurrence of quicksilver in Canada. Vol. II., C. M. I.

Cirkel, Fritz.—Bridge River Gold Mining Camp. Vol. VII., C. M. I.

Dawson, G. M.—On Kamloops district. G. S. D. Summary. 1894.
*Kamloops map sheet. Separate Report.
G. S. D. No. 573, with economic and geological maps.

Ells, Dr. R. W.—On the Nicola coal fields. G. S. D Summary 1904. (Also Johnson R. A. A. on Aspen Grove and Aberdeen).

Moncton, G. F.—Gold bearing lodes of Cayoosh Creek. Jour. Fed. M. I., Vol. II.

Satchell-Clarke, F.—A few notes on gold dredging on Thompson and Fraser Rivers, etc. Vol. V., C. M. I.

Selwyn, A. R. C., Dr.—On the route from Kamloops to Yellowhead Pass. G. S. D. 1871-72.

Cariboo-Stuart Lake and Skeena River.

Bowman, Amos.—Report upon Cariboo with maps of the creeks. G. S. D. 1887-88, or No. 263.

*Dawson, G. M.—Exploration of Blackwater, Nechaco, Stuart Lake, Quesnelle and Cariboo, also map. G. S. D. 1876-77.

---

* Read before the Canadian Mining Institute, Ottawa Meeting, 1908.

Canadian mining journal 1908

cording to its derivation from placers, dry or siliceous ores, copper ores, lead ores, zinc ores, and mixed ores. Ores containing 2½ per cent. or more of copper are designated as copper ores. Those containing over 4½ per cent. are called lead ores. The dry or siliceous ores contain either very small amounts of copper, lead, or zinc, or none at all.

Silver produced in the United States in 1906 was divided thus:

Sources of silver produced in the United States, 1906.

	Fine Ounces
Placers	171,058
Dry or siliceous ores	16,792,799
Copper ores	15,880,870
Lead ores	15,328,653
Zinc ores	98,423
Mixed sulphide ores	9,090,650
Total	57,362,453

About 30 per cent. of the total silver production is derived from dry or siliceous ore and these ores constitute about 39 per cent. of the total tonnage of deep mines.

Siliceous Silver Ores.

Dry or siliceous silver ores may be defined as those in which the value of the silver is equal to or greater than that of gold, and in which copper and lead are below 2½ per cent. and 4½ per cent. respectively. In other words, on the basis of 62 cents per ounce the ore contains at least 100 ounces of silver to 3 ounces of gold. In 1906 the United States produced only about 700,000 tons of dry or siliceous silver ore, containing approximately 12,000,000 ounces of silver, $2,000,000 of gold, about 7,000,000 pounds of lead, and 80,000 pounds of copper. The silver ores clearly contain very little copper and three-fourths of this comes from Colorado. The silver ore is derived from 12 states, being produced at 219 mines in 103 mining districts. The average content is about 19 ounces of silver and $1.85 in gold per ton.

The silver-lead-copper ores yield silver to the amount of 3,078,592 ounces. The ores average 8 ounces of silver, $1.30 in gold, and 22 pounds of lead per ton. Their sources may be classified roughly thus:

	Ounces
1. Replacement deposits in limestone.	1,305,000
2. Fissure veins, connected with intrusive rocks (not always to be separated strictly from No. 1.)	712,000
3. Fissure veins in Tertiary volcanic flows	900,000
Total	2,917,000

The silver-gold ores from which 7,584,630 ounces of silver and $1,629,975 worth of gold are derived, average 28 ounces of silver and $6 in gold. Their total tonnage is 270,000 short tons. They are mined in 8 states and constitute the output of 50 mines in 22 mining districts. The whole production of Arizona in this class is derived from fissure veins in volcanic flows, principally rhyolite or dacite. Briefly, the ores of this class appear to be eminently characteristic of veins in Tertiary volcanic flows.

The third class of the dry or siliceous silver ores may be called the pure silver ores. They consist of those which contain no reported lead or copper, and in which the proportion of gold to silver is very small—less than 0.5 ounce of gold to 100 ounces of silver. Only about 1,500,000 ounces, or one-fortieth of the total production, are derived from these ores. They average only 15 ounces in silver and 25 cents in gold. Their principal sources are:

	Ounces
Replacement ores in limestone	574,000
Fissure veins in other rocks connected with intrusions	314,000
Fissure veins in volcanic Tertiary flows	466,000
Doubtful	149,000
Total	1,503,000

A large part of these ores consists of oxidized surface ores. Some of them are oxidized iron ores from the upper part of the deposits and really mined as flux.

The total production of silver in 1906 was 57,362,455 fine ounces. Of this, 40,398,596 fine ounces were recovered from lead, copper, or zinc ores, and 16,792,799 fine ounces from dry or siliceous ores.

Analysis of the distribution of production between the various classes of ores, brings out the well known affinity of silver for lead and emphasizes the slight degree in which copper and zinc are associated with silver ores properly so called. The selective action of limestone in the precipitation of silver, lead compounds is also emphasized.

SUMMER'S WORK OF THE GEOLOGICAL SURVEY IN THE WEST.

So far as can be learned at date of writing the following parties will be sent out by the Geological Survey to work in the districts mentioned:

Mr. D. D. Cairns will delimit the coal bearing rocks of White Horse coal area.

Mr. R. Graham will make a geological study of the Pacific coast and inlets from Kingscome Inlet northward. This will be a continuation of the work of last year.

Mr. R. G. McConnell will examine the geological features of Texada Island with special reference to ore deposits.

Mr. J. Keele, who was engaged last season in exploring the Continental Divide, near the head of Peily river, and wintered there, will this season explore the Mackenzie slope of this district.

Mr. W. W. Leach will continue his exploratory work in the Bulkley valley.

Mr. John Macoun will investigate the fungi that cause the rapid decay of mine timbers in British Columbia. Assisted by Mr. Spreadborough, Mr. Macoun is also making a collection for the new museum to illustrate the flora and fauna of Vancouver Island.

Mr. V. Stefansson has been sent out on a joint expedition under the auspices of the Museum of Natural History, New York, and the Geological Survey, to the region about Coronation Gulf in the Arctic. The geography and mineral resources of the region will be examined. The condition of life among the Esquimo, who have not come into contact with whites, will be reported upon.

Mr. Owen O'Sullivan has left for Hudson's Bay to complete the instrumental survey of the coast.

Mr. A. W. G. Wilson has gone into the Nipigon region to complete the work for a report to accompany a map now being prepared.

Canadian mining journal 1908

THE IRON ORES OF CANADA.

By C. K. Leith, University of Wisconsin, Madison, Wis.

(Ottawa Meeting of the Canadian Mining Institute, March, 1908.)

I hasten to disclaim intention of attempting a comprehensive discussion of all known Canadian iron ore deposits. While I have seen most of the principal deposits in Canada and Newfoundland, and others have been examined by associates and assistants, I cannot claim to have sufficiently detailed knowledge of a considerable part of them to warrant detailed discussion. tention will be called rather to certain general features of comparison of Canadian ores with the several types of deposits of the United States which have been more fully exploited and studied, and thus view the Canadian iron ore situation with a perspective not otherwise easily gotten. For the purposes of this discussion, the Newfoundland ores are included with the Canadian ores, because they are controlled, mined and largely used by Canadian interests. So far as is necessary, information will be drawn from the various careful descriptions of Canadian ores published by the Dominion and Provincial Geological Surveys or Mining Bureaus.

The classification of iron ore deposits we shall use is partly a new one based upon recent detailed studies of the Lake Superior ores and ores of the Western United States.

All metallic ores are derived ultimately from the interior of the earth, whence they are delivered by igneous eruptions near or to the surface, there to undergo various distributions and concentrations under the influence of meteoric waters and gases. The variations in composition, shape, and commercial availability of an ore are controlled by variations of conditions under which the ores have reached the surface and have been distributed. The variations have developed the following types of North American iron ore deposits:

(1) Magmatic Segregation Type.—Ores brought to the outer part of the earth in molten magmas but retained in them during crystallization, with the result that the ores form part of the rock itself, just as do the feldspar and other minerals. Such are the titaniferous magnetites, containing refractory silicates, and frequently sulphur and phosphorus, in deleterious quantities. While known in enormous quantities over North America—in Canada principally along the Lower St. Lawrence river, and in the Chaffey and Matthews mines of Lower Ontario—smelting is not beyond the experimental stage and they are nowhere used at a profit.

(2) Pegmatite Type.—Ores which are carried to or near the surface in magmas and are extruded from them, in the manner of pegmatite dikes, after the remainder of the magma has been partially cooled and crystallized. They are deposited from essentially aqueous solutions mixed in varying proportions with solutions of quartz and the silicates. To this class belong some, and perhaps all, of the magnetite deposits along the contacts of limestone and igneous rocks constitutting the greater part of the iron ores of the Western United States, and most of the magnetite ores of Vancouver and Texada Islands, and elsewhere in British Columbia. The assignment of the British Columbia magnetites to this type is based on a personal comparison of them with ores in Southern Utah believed to be of this type, the origin of which is discussed in some detail by Mr. Harder and myself in Bulletin No. 338 of the United States Geological Survey. The essential features of these deposits are their highly crystalline, magnetic character, their content of garnet, amphibole and other silicates, local abundance of sulphides and of apatite. The area of these deposits at the surface varies up to about 0.2 of a square mile. They are easily located by their outcrops or by the fragments strewn down the slopes, but it is not so easy to determine the shape and extent of the deposits when found, because of their extremely irregular association with wall rock. It is not safe to assume that they extend a foot beyond the zone of direct observation. Their vertical dimensions and shape and their mineralogical composition at depth are relatively unknown. Mining operations in the west on this class of deposits have not been extensive enough to determine these facts, such deposits having been mined principally in but few localities, at Texada Island, at Fierro, New Mexico, and in the Monterey and Durango deposits of Mexico. In the United States and Mexico certain similar deposits, but not all, have been found to take on pyrites and garnet with depth.

A small amount of ore has been mined from Texada Island. The better ore averages about 55 per cent. iron content, and from this down; much of it is below Bessemer limit in phosphorus, and sulphur is in amounts requiring roasting. Garnet and amphibole are both abundant, locally requiring hand sorting. Silica varies, inversely as the iron, up to about 11 per cent. All of the ore contains a small amount of copper, locally as much as 4 per cent. The shapes of the deposits are extremely irregular. Seldom do the widths exceed 100 feet. In depth they are best shown by a tunnel 300 feet below the surface which discloses ore with essentially the same width and composition as at the surface.

The ores on the west coast of Vancouver Island have had only a little development work done on them. They likewise vary widely in iron content; phosphorus is low, sulphur is usually high, silica varies up to about 26 per cent.

Making due allowances for lack of development and possible shallowness and change of character with depth, it is still certain that there is a large known tonnage available in British Columbia, which will be used when West Coast demands warrant the establishment of a local steel industry, instead of the importation of finished products from the east. There are indications that this time may not be far distant. While suffering somewhat from their composition, they are easily and cheaply mined, and being located directly upon the coast, will have the cheapest transportation. So far as the ores have been used only in the State of Washington, and the recent rapid development of the Northwestern United States suggests that their further immediate use will be in Washington, notwithstanding duty, at least until such time as sufficiently large ore reserves in this part of the United States become developed or until the population of British Columbia requires a steel industry of its own.

To the pegmatite type are provisionally assigned the ores of the Atikokan and Hutton districts, of Ontario,

Canadian mining journal 1908

though, finely disseminated, it exists in considerable amount. At the surface films of leaf gold were not uncommon in the joint planes. The quartz associated with this oxidized material shows fine crystalline, saccharoidal and platey structures. An assay made of a sample of rich oxidized ore from the Martha lode gave an analysis by Mr. P. G. Morgan, of the N. Z. Geological Survey, the following result*:—

Moisture at 100° C.	.26%
Loss on ignition	1.60
Silica	89.98
Ferric oxide	5.62
Alumina	1.82
Manganese and nickel oxides	.39
	99.67

Gold, 2 ozs. 5 dwts. 17 grs. per long ton.
Silver, 10 ozs. 2 dwts. 12 grs. per long ton.

The oxidized surface material on the Martha cannot be considered in the light of what is ordinarily called a gossan or cap of concentrated metallic minerals. The quartz was merely stained with iron and manganese oxides. There were no deposits of these minerals, and the values in gold and silver, even in the richest oxidized foot-wall ore, were little, if at all, higher than obtained in depth in the sulphide ore. Merely an oxidized surface capping of limited extent occurred, indicating that there has been time for little oxidation since the outcrop of the lode was laid bare.

*Transactions Australasian Institute of Mining Engineers. Volume VIII., page 182.

(4) The surface sinters, which frequently exhibit a banded structure, consist of a very finely crystalline or crypto-crystalline quartz, either whitish and opaque with rusty stains along the joint planes, or of a general pale rusty or pinkish colour.

The walls of the Waihi veins are in general fairly well defined. Owing to the fact, however, that much of the vein material of the Waihi Mine is merely metasomatically replaced country rock, there is in places no decided demarcation between wall-rock and vein material, but rather a gradual transition from payable vein material to propylite containing little or no values. Indeed, in such cases, what is to be classed as ore is often determined only by assay.

In many parts of the mine all of the several vein fillings show brecciation, and even fissuring, but faults of any magnitude giving serious displacements do not occur.

It is noteworthy that the vein material in general of the Waihi Mine bears a striking resemblance to that of the Redjang Lebong Mine in Sumatra, where the geological conditions are, it is understood, closely similar. A resemblance to the vein filling of the de Lamar Mine, Idaho, has also been cited by Waldemar Lindgren, while J. E. Spurr refers to P. G. Morgan's mention of the resemblance between geological conditions at Waihi and Tonopah, Nevada.*

*Geology of the Tonopah Mining District, Nevada. Professional paper, U. S. Geological Survey, No. 42, 1905, page 285.

*See also Engineering and Mining ournal, May 4, 1905, page 862.

(To be continued.)

Summary Report of the Mines Branch of the Department of Mines for the Year Ending March 31st, 1908.

The Summary Report outlines the work performed by the Mines Branch of the Department of Mines for the fiscal year ended March 31, 1908.

Dr. Haanel received his appointment as Director of the Mines Branch in May, 1907. By an Order in Council, dated June 19, 1907, Mr. John McLeish was transferred from the statistical office of the Geological Survey Branch to the Mines Branch. Later, a part of the chemistry section was similarly transferred. Messrs. T. Denis, F. G. Wait, M. F. Connor and W. W. Leach, officers of the Geological Survey, were also moved to the Mines Branch .

Iron Ore Deposits.

The most important field work performed during the year was the investigation of iron ore deposits in various parts of the Dominion.

Mr. Einar Lindeman was instructed to examine such of the iron ore deposits of Vancouver and Texada Islands as are favorably situated in regard to transportation, and to devote especial attention to the more promising of these.

With the exception of the bog ore deposits at Quatsino Sound, and a small deposit of hematite on Salt Spring Island all the properties visited showed magnetite all in the immediate vicinity of or in contact with crystalline limestone where the latter is in close proximity to igneous rocks. These magnetites are high in iron, do not exceed 0.05 per cent. phosphorus, but are also, as a rule, high in sulphur.

Vancouver Island.—In the Gordon River District, sixty miles from Victoria on the west coast of Vancouver Island, some promising prospects were noticed. The country rocks are chiefly crystalline limestone and igneous rocks, granite and diorites. About seven miles from salt water an outcrop of magnetite has been traced for 350 feet. In several places the ore is in sharply defined contact with granite. Ninety feet below this contact a tunnel, 114 feet long, has been run directly into the hill. It is in ore throughout its length, excepting where a diorite dike, eight feet wide, intrudes. The character of the ore is shown by the following analysis of an average sample taken along the tunnel:

	Per Cent
Silica	8.88
Iron	58.30
Sulphur	[illegible]
Phosphorus	0.013

A sample from another claim, farther up the valley gave this result:

Canadian mining journal 1908

	Per Cent.
Silica	4.51
Iron	67.09
Sulphur	1.60
Phosphorus	0.009

At Head Bay, on Nootka Sound, four outcrops of magnetite occur along a contact of crystalline limestone and diorite about a mile from the bay. At one place the ore body is fifty-five feet wide. The following analysis shows it to be of excellent character:

	Per Cent.
Silica	6.10
Iron	66.17
Sulphur	0.017
Phosphorus	0.016

Mr. Lindeman has serious doubts as to the extent of the Quatsino Sound bog ores. However, he recommends systematic drilling.

Seven miles up the Klaanch River an exposure of magnetite extends along the river bank for 180 feet and is from 25 to 30 feet high. No work has been done. This and other outcrops gave good analyses. Magneto-metric survey indicated other large bodies. Other considerable bodies were found on the Quinsam River.

Texada Island.—The principal ore deposits of this island are in the Prescott, Paxton and Lake properties. The Prescott has been worked more extensively than any other. During several years magnetic ore has been shipped from this property to Irondale, Washington. The ore outcrops about 850 feet from the shore, in a bluff on the brow of a steep hill, at the contact between granite and crystalline limestone. The deposit has been opened at three levels. An open cut shows a face of magnetite forty feet wide and one hundred feet high. Here the ore shows patches of calcite and fragments of brecciated volcanic rocks. Small amounts of iron and copper sulphides are also present. The ore dump gave the following analysis:

	Per Cent.
Insoluble	6.46
Iron	62.57
Sulphur	0.403
Phosphorus	0.024

The ore bodies of the Prescott are of great magnitude.

At the Paxton mine, 3,500 feet east of the Prescott, an outcrop of magnetite occurs directly in contact with granite. The ore is rich, but, like the Prescott ore, shows traces of copper, and is somewhat high in sulphur, though by no means prohibitively high.

The Lake mine, east of the Paxton, shipped 1,000 tons of ore last summer. The ore bluff is 80 feet high and 100 feet wide on the surface. Crystalline limestone forms the footwall, and diorite overlies the ore in places. An open cut shows good clear magnetite.

Coke carrying 15 to 20 per cent. ash is obtainable on Vancouver Island. This ash could be very much reduced by washing the coal. The ash is low in phosphorus.

Exceptionally pure limestone is obtainable at many localities.

Cheap transportation of raw materials is assured by the proximity to tide-water of all the more important deposits of iron ore, fluxes and fuels.

In addition to Mr. Lindeman's report, the following monographs are in preparation: "On Chrome Iron Ore Deposits of Eastern Townships," by Fritz Cirkel, M.E., and "Report on the Iron Ore Deposits of Western Ontario," by F. Hille, M.E.

Part I. of Dr. J. E. Woodman's report on the iron ore deposits of Nova Scotia is in the press, and reports on the iron ore deposits along the Ottawa and Gatineau rivers.

Electric Smelting.

Progress in electric smelting is confined at present to the production of high class steels. Both the Heroult and the Kjellen furnaces are being enlarged. The electric process is gradually displacing the crucible process in the manufacture of high grade and alloy steels.

The Lash Steel Process.—The Lash Steel Process, in which finely divided ore is intimately mixed with carbon, a certain quantity of finely divided carboniferous iron, sawdust and suitable fluxes, and the whole treated in an open-hearth furnace in a bath of molten metal, is one of the most recent inventions. It is claimed that in using the Lash mixture in an electric furnace no bath of pig iron is necessary, and a yield of 98 per cent. of the metallic contact of the mixture is recorded.

A typical mixture, all of which is finely divided, is as follows:

Iron ore	54
Cast iron borings	27
Sawdust	4
Limestone	4
Coal tar	3
Coke	8
	100

If the average cost of producing one ton of ingots in the regular open hearth be taken as $20.79, the corresponding cost for the electric furnace, using the wash mixture is $16.22.

Other Work.

The results of Mr. Erik Nystrom's investigation of the utilization of peat have already appeared in a recent special pamphlet.

The hand-book dealing with the mining and metallurgical industry of Canada is soon to be issued. It will appear annually with necessary revisions. Only producing mines and metallurgical plants in actual operation have been reported upon.

For more than a year Dr. J. B. Porter, Mr. H. F. Strangways and Mr. C. Landry, all of McGill University, have been conducting for the Mines Branch a systematic investigation of the coals of the Dominion. A complete report is expected before the end of next year.

Mr. John McLeish's report on the work of the statistical division makes interesting reading. Mr. McLeish urges the standardization of statistical methods throughout the Dominion.

Other features of the Summary Report we are not now able to take up. The report indicates a decided activity and progress on the part of the Mines Branch. But as an official document it does not show evidence of sufficiently careful editing. In arrangement it is loose. Certain sections are carelessly worded. For these faults there is the excuse of haste. But it would, we think, be in keeping with the dignity of the Mines Branch to see that these failings are remedied.

Canadian mining journal 1908

large enough to float the sulphide. No envelope is formed around silicates. The water appears to penetrate them and causes them to sink."

The process is conducted in a concentrator composed of a simple cast iron tube, six feet in length and one foot in diameter. Near each end are two tires resting on supporting rollers to enable the tubes to be revolved with little friction. Inside the tubes is a helical groove with an inch and a half pitch running from end to end, as in a bultnut.

"The tube is revolved at the rate of about 30 revolutions per minute. The pulp is screwed through the tube and is so guided by the helical screw groove as to gain the mineral particles repeated opportunities to glide upon the surface of the water. Good concentration can be made in one tube. The inventor's experiments showed, however, that when four tubes were joined in series so that one fed into the next one following, some of the finest particles did not get properly started on the water's surface until they had nearly reached the discharging end of the fourth tube.

"This process has been tried on a larger scale at the Adelaide Mill, Nevada. It was run with an ore composed of chalcopyrite, pyrrhotite, and pyrite with a little blende and galena which previous plants had failed to handle profitably. Each tube successfully treated from 5 to 6 tons of ore per twenty-four hours, concentrating in the ratio of 11 to 1."

Engineering and Mining Journal, October 3, 1908.—The cyanidation of silver ores at Pachuca, Mexico, is written of by Claude T. Rice, The Pachuca ore carries only five grams of gold per kilogram of silver. The ore milled averages about 700 grams silver and 3.5 grams gold per metric ton. The gangue is silicious. The silver occurs as chloride or bromide in the oxidized ore, and mainly as argentite in the unoxidized ore, Some of the ore shows a considerable amount of manganese and a little copper. The ore is completely slimed and air agitation of the cyanide solutions is being introduced.

PERSONAL AND GENERAL.

Mr. H. E. T. Haultain, whose appointment to the chair of mining, Toronto University, is noted on another page, has taken up his new duties.

Mr. Reginald E. Hore has resigned his position as lecturer in the University of Michigan to become lecturer on geology at the School of Mining, Kingston, Ont.

Mr. Aldridge, general manager of the Consolidated Mining and Smelting Co., was in Cobalt recently adranging for the shipment of low-grade ore to the smelter at Trail, B.C.

Mr. Douglas B. Langford, M.I.M.E., who was one of the guests of the Canadian Mining Institute's summer excursion, is at present in Toronto. Mr. Langford will probably spend the winter in Canada.

Prof. A. P. Coleman, of Toronto University, was returned from a two-months' exploration of portions of the Rocky Mountains west of Edmonton hitherto unexplored. An ascent of Mount Robson was undertaken by his party, but after reaching the 11,000-foot level they were forced to abandon the attempt to reach the summit on account of heavy snowfalls.

Mr. E. E. Stockton, of the Auditor-General's Dept., Ottawa, has returned from a visit to the Yukon, where he was engaged for four months on official business. He reports that the gold production of the territory this season will be larger than for many years past, owing to the operations of the Guggenheims, and for the first time the dredges will be busy until the ice forms late in October.

The following is a list of gentlemen elected to membership at a meeting of council held at Victoria, B.C., on September 21st: Members—Alexander Grant, Van Anda, Texada Island, B.C.; J. Edgar McAllister, M.E., Greenwood, B.C.; W. F. McNeill, Canmore, Alta; J. A. Miller, Rossland, B.C.; Geo. Wilkinson, manager South Wellington Coal Mines, Box 286, Nanaimo, B.C.; Mrs. Rosalind Young, 617 Michigan St., Victoria, B.C. Associates—W. Anderson, C.E., Box 666, Rossland, B.C.; H. P. Dickinson, general agent The Giant Powder Co., Box 95, Rossland, B.C.; Chas. F. Law, Vancouver, B.C.; A. B. Mackenzie, Box 222, Rossland, B.C.; Geo. Sheldon-Williams, Box 806, Vancouver, B.C.

Elected to membership at council meeting held at Temagami, Ont., Sept. 6: Members, A. C. Bailey, M.E., box 405, Cobalt, Ont.; Benjamin Browitt, Merritt, B.C.; Freeman I. Daniels, Cobalt, Ont.; Alexander Faulds, Middlesboro', Nicola Valley, B.C.; Ralph W. Foster, M.E., Cobalt, Ont.; Thos. Graham, M.E., Supt. of Mines, Western Fuel Co., Nanaimo, B.C.; H. W. Hardinge, M.E., 43 Exchange Place, New York, N.Y.; J. D. Hurd, M.E., Fernie, B.C.; Jas. Hylands, M.E., Box 18, Cobalt, Ont.; Herbert E. Jackman, M.E., care of Mr. L. A. Hoyt, East Jordan, Mich., U.S.A.; George Johnson, Cobalt, Ont.; M. C. H. Little, M.E., Cobalt, Ont.; J. L. Parker, M.E., care of Tyee Copper Co., Victoria, B.C.; John W. Russell, manager eKrry Mining Co., Cobalt, Ont.; Francis H. Shepherd, M.E., Box 353, Nanaimo, B.C.; R. J. Smith, 403, 1st Street, Manistee, Mich., U.S.A. Associates—Milton Carr, director City of Cobalt Mining Co., Cobalt, Ont.; Shirley R. Gragg, M.E., Haileybury, Ont.; Arthur W. McCurdy, president Nootka Marble Quarries, Limited, Victoria, B.C.; Frank B. Mosure, Cobalt, Ont.; T. J. Smith, president Diamond Vale Colleries, Limited, Box 439, Vancouver, B.C.

YUKON COAL.

Coal is coming to the front rapidly in Yukon Territory. Last year royalty was paid on 15,433 tons, three times the amount received during the previous year. The price of domestic coal in Dawson is $16 per ton. Tantalus and Coal Creek are the two sources of supply. Coal from the former place is used on the White Pass boats. The coal Creek fuel is used by the electric light plant in Dawson, which is under the same ownership. The Tantalus coal is the better of the two products.

The actual output of the Rand mines last month, as officially announced by the Transvaal Chamber of Mines in London was 587,634 ounces fine. This was 12,366 ounces below the estimates of a week ago as cabled to the Post, and just falls short of the August production, which established high record, having been 587,813 fine ounces.

Canadian mining journal 1908

since July, and has treated 15,000 tons of Blue bell ore. The company has shipped over 2,000 tons of concentrates to Trail smelter.

The Iron Mask mine at Kamloops has been sold to West Duluth mining men, and a force of twenty men put to work. It is the intention to work about 100 men at this mine in the spring. Lack of smelter facilities has handicapped the Kamloops mines considerably in the past, and it is now thought that a small smelter will be erected near the Iron Mask. This would prove a great stimulus to the Kamloops copper properties.

GENERAL MINING NEWS.

NOVA SCOTIA.

Sydney Mines.—Owing to scarcity of shipping the Nova Scotia Steel and Coal Company has closed all but its No. 3 Colliery.

Halifax.—It is expected that the new Technical College will be completed next July.

NEW BRUNSWICK.

St. John.—Chatham has been provisionally selected by the Canada Iron Corporation as a shipping port for their iron ore from the deposits near Bathurst. It is possible that a smelter will be erected there also.

ONTARIO.

Sault Ste. Marie ,Dec. 3.—The steel plant of the Lake Superior Corporation closed down this morning at 6 o'clock, according to the statement of General Manager Franz, from lack of orders. Rolling for the last order of the Transcontinental Railway was finished this morning.

The management announces that the plant will re-open on January 1. The blast furnaces will continue operating in full force.

Sudbury.—The Crystal stamp-mill, near Lake Wahnapitae, has been closed temporarily on account of shortage of fuel. During the recent forest fires the Company's entire stock of cordwood was burned.

Cobalt.—The Flynn property, near Cross Lake, has been purchased by a small syndicate of Toronto men, under the name of the Pontiac Mining Company. Very little silver has been discovered. One vein of calcite and smaltite has been worked to a small extent.

The concrete foundations of the O'Brien concentrating mill has been completed. The frame work is now under construction.

Development work on the properties of La Rose, Cons. Mines Co. during the month of October was as follows: La Rose mine, 493 feet and 764 cubic yards of sloping. Princess mine, 104 feet. University mine, 18 feet, some open cut work. Violet mine, 1,090 feet of trenching, besides a small amount of open cutting.

An average number of 242 men were employed on the company's properties during the month. A contract has been entered into with the American Smelting and Refining Co. for the treatment of La Rose low grade ores at Denver. This contract is more favorable than the schedule under which La Rose ores have been marketed in the past.

The Green-Meehan and Red Rock Cobalt concerns, which have been amalgamated, will be called the "Mount Royal" in future.

BRITISH COLUMBIA.

Frank.—The zinc smelter of the Canadian Metal Company is being dismantled.

Michel.—The pay roll of the Crow's Nest Coal Co. for Michel for October is $97,800.

Nelson.—Where a year ago only the Queen mine and a stamp mill were working on Sheep Creek, at present there are six others, the Kootenay Belle, Bonanza, Mother Lode, Golden Fern, and Nugget. The Queen has improved its water supply and has added 10 stamps to its mill. Two 20-stamp mills are projected, the first for Mother Lode and Kootenay Belle, together, and the second for the Nugget.

Sandon.—Up to November 28, the Reco mine has shipped 456 tons to the Trail smelter. At that date there was a pile of 5,000 sacks awaiting the first substantial fall of snow when rawhiding will be commenced. There is much ore, also, broken in the stopes, and the chutes are full. It is believed that the Reco can ship a carload a day during the winter. Since 1905, during which year the Reco paid $20,000 in dividends, the mine has not been worked with uniform success. But last spring it was leased to an Italian miner, who is doing exceedingly well.

Nelson.—The second Relief mine, opened first in 1896 by Finch and Cameron, is being worked successfully under lease by Messrs. Hudson and Bell. A 10-stamp mill is in operation. The vein worked ranges from three feet to 12 inches in width. Nearly all of the ore is reported as payable.

The Mother Lode mine in the Sheep Creek camp, is shipping good ore to the smelter.

Rossland.—Electric power is being installed at the Silver King and Victoria mines, near Nelson.

A 500-foot tunnel is to be driven into Wallace Mountain to cut the veins of the Bell Mining Company's properties.

Vancouver.—Near the old Cornell workings, on Texada Island, abounded twelve months ago by an English syndicate, after a uarter of a million dollars had been spent, it is reported that a large body of copper-gold ore has been encountered. Insufficient development has been done to make any final statements about the size and character of the vein. But it promises well.

MINING NEWS OF THE WORLD.

GREAT BRITAIN.

The continued depression in the South Wales coal export trade is being severely felt, and large numbers of the coal miners are on the verge of starvation.

Wales is the only gold-producing area in the British Isles, and the output is not large. In 1907, 12,978 tons of gold ore, valued at £5,625, were produced, as against 17,384 tons, of the value of £5,343, for the previous year. It was practically all raised in Merionethshire, where it occurs in quartz veins traversing the Cambrian rocks.

The Durham Coal Trade Conciliation Board has reduced coal miners' wages 3¾ per cent.