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BRITISH COLUMBIA MINING RECORD

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MINING RECORD

E. JACOBS.....Manager and Editor

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CONTENTS.

NOTES AND COMMENTS.

Last month the Boston *Commercial* stated that: "The semi-annual interest on the $800,000 of 6 per cent. bonds of the Dominion Copper Company it is said will be paid when due, the money now being on deposit for this purpose."

Reports received from Cariboo are to the effect that the season has thus far been an unusually favourable one for hydraulic mining and that consequently satisfactory progress has been made in connection with placer gold mining on several properties in the vicinity of Barkerville.

A good exhibit of the products of the mines, smelting, lead-refining and pipe-making works, and other departments of the Consolidated Mining and Smelting Company of Canada in the Kootenay District, will be sent to the Nelson annual exhibition next September.

Following the recent resumption of operations at the British Columbia Copper Company's smelting and copper converting works, the first car of blister copper to be sent out by the company from Greenwood since the suspension towards the close of last year, was shipped from Greenwood on June 8.

Gold receipts at the Dominion of Canada assay office at Vancouver were reported to have been comparatively large about the middle of June. A press despatch sent out from that city was to the effect that on June 16 there was in the assay office there about $250,000 worth of Klondike gold just received from the North.

Included in its news of the district the *Slocan Mining Review* on June 25 had the following mining notes: "The Eureka mine, Sandon, is working 25 men at the present time, and has a good showing of ore. A flume is being built at the Vancouver mine in preparation for an air compressor, the machinery of which is expected daily."

The Dominion of Canada *Labour Gazette* has published the following note from its Vancouver corres

pondent: "Gold that assays from $2.40 to $4 to the ton has been found on Caldwell Creek, a small stream that runs into the North Arm of Burrard Inlet. Six claims have been staked and recorded there." There must be a powerful deal of alloy in that gold to bring its value down to $4 and less per ton.

The Crow's Nest Pass Coal Company's annual report, reprinted on other pages of this number of the MINING RECORD, shows that the total output of coal from all the mines of the company in 1907 was 981,939 short tons. Part of this was made into coke, of which the output for the year was 231,368 tons. In 1906 the company's output of coal was 806,901 tons, and of coke 213,295 tons.

A number of carbons (black diamonds) and carbon fragments, reported to be of a total value of about $12,000, were stolen from the workshop of the Diamond Drill Contracting Company, at Rossland, on June 21. This company has among other contracts, one for diamond-drilling in the Consolidated Mining and Smelting Company's mines at Rossland, and the carbons were for use in that work.

The *Labour Gazette* has been informed by its Nelson correspondent that: "Silverton, Slocan Lake, is enjoying marked prosperity, the Vancouver, Hewitt and Standard mines shipping ore steadily. The first-named has installed an air compressor and other machinery with a view to further increasing the ore output, while the Alpha, one of the oldest shippers in Slocan district, is reported as resuming operations after a close-down of about 13 years."

Mr. S. S. Fowler, general manager of the Canadian Metal Company, owning the Blue Bell mine, on Kootenay Lake, is reported to have stated at Nelson that the mine is looking very well and everything is running smoothly at the new concentrating mill, although there are adjustments to be made from time to time, as is always the case after the installation of new machinery to deal with ores when first milled. Lead ore is being sent to the Trail smelter.

The Nelson *Daily News* has been informed that "a good stringer of ore has been discovered upon the Rambler-Cariboo at the 1,050-ft. level. The stringer was come upon in the tunnel before the point was reached at which the vein was thought likely to be discovered, and the management is greatly encouraged thereby the more especially as the ore come upon is of equally good grade as that already mined in the upper levels of the mine." The mine is situated in McGuigan Basin, Slocan District.

On June 17, inst., the Toronto *Globe* reprinted the following extract from *The Globe* of June 17, 1858: "The papers are filled with the latest news from the Frazer River gold mines. * * * The reports represent the country for hundreds of square miles on Frazer and Thompson Rivers as producing the precious metal in abundance. Frazer River is spoken of as the latest and richest El Dorado—better than California was in 1848. The number of adventurers that have left California is very large, perhaps 3,000, and the tide will increase as summer advances."

A press despatch from Ymir, dated June 10, stated that: "It is rumoured here a big strike has been made at the Ymir mine, under the direction of Manager H. G. Nichols. For some years the company has been endeavouring to locate a blind lead supposed to exist, as there was much mineral indication on the hill at the back of the mine—float that assayed $60 and upwards having been found. This lead was thought to be parallel to the main Ymir lead and work in that direction has opened up new orebodies which are equally as rich as the former Ymir lead.

In an account of a trip through the lower Okanagan and Similkameen districts the Vernon *News* recently said: "At Olalla down its main street, there is a business-like row of houses, a fine hotel, a good general store, a post office and the office of the Olalla Mining Company, the manager of which is F. H. Parsons. This company's mine has only just started up again; it was formerly known as the Bullion mine, and was operated by the McDougall outfit. We had a chat with Mr. Parsons, but as the work is only just commencing there was not much to be said about prospects."

Mr. John B. Hobson has caused to be published a letter explicitly contradicting the statements recently made in a number of provincial newspapers to the effect that Sir Wm. Van Horne and his associate large shareholders in the Consolidated Cariboo Hydraulic Mining Company had instructed Mr. Hobson to "go ahead with the season's work," and that preparations are being made for a big clean-up at the company's hydraulic mine at Bullion, Quesnel mining division. Mr. Hobson is engaged in hydraulic mining this season in the neighbourhood of Quesnel Forks, but not under the auspices mentioned in the report here referred to.

When in Vancouver, on his way to the Babine and Telkwa sections of Skeena mining division, I. Robert Jacobs, formerly of Greenwood and later manager of the Kerr Lake Company's silver mine near Cobalt, Ontario, was reported by the *Province* to have said: My associates intend to make heavy investments in gold, copper and silver properties in the Babine and Telkwa districts, if they can secure what they require. I am going up there to have a look around and see whether our engineers have been romancing. If we secure what we want we are prepared to expend a lot of money, in development and equipment work, but we want properties which will make mines.

A recent attempt at dredging for gold in the northern Similkameen appears to have been a failure. The *Similkameen Star* says: "The Weeks-Adams gold dredger at Granite creek has closed down after a few days' run. The machinery has been housed on the bank of the creek ready to be removed or disposed of as the proprietors see fit. Various causes have contributed to the necessity for stopping the dredger, chief of which was the lack of values in the placer. High water in the creek was also an important factor, for if the water had been low a better quality of ground would have been reached. It is not probable that bedrock was touched or better results would have been obtained."

In his report to the directors of the North Star Mining Company, Mr. N. McL. Curran, manager of the North Star mine, says, among other things, that during the year just past work has mostly been confined to the mining of ore in and adjoining the old works. A good deal of prospecting has been done and several bunches of good shipping ore have been discovered. Three holes 534 ft. deep have been sunk by means of diamond drill. One of these holes is very encouraging and further drilling will be prosecuted. The mine has shipped 4,000 tons of ore during the year at a profit. On the whole, remarks the Cranbrook *Prospector*, Mr. Curran's report is most encouraging as to the future of the North Star.

The Hon. the Premier, who is also Minister of Mines for British Columbia, with other members of the Provincial Government has been making a tour of Yale and Kootenay districts. At Greenwood, Boundary, the members of the party were shown through the British Columbia Copper Company's modern smelting works by the manager, Mr. J. E. McAllister, and his assistant, Mr. E. G. Warren. At Grand Forks, Mr. A. B. W. Hodges, and his assistant, Mr. W. A. Williams, showed similar attention to the visitors, who were greatly interested in the numerous improvements and additions being made to the Granby Consolidated Mining, Smelting and Power Company's big copper reduction works at this place.

A press despatch from Phoenix gives the following information: The shipments of ore from the Granby mines, in this camp, for the month of May totalled 93,316 tons, and with the exception of that of last March was the biggest monthly tonnage ever sent out from the mines. In March all the furnaces at the company's smelter were running at full capacity, while during May two furnaces were out of commission for a considerable length of time, in connection with the improvements now going on there; accordingly less ore was treated. The shipments for the first five months of 1908 were 294,317, over a third greater than for the same period last year. The shipments for the first five months of 1907 were 206,073 tons.

From the Whitehorse *Star* it is learned that at the close of June the water in the river at that place was slowly but surely rising and from then on trouble on the bars at the head of Lake Lebarge was not anticipated. However, the Selkirk which left there late in the month was 48 hours on the bar near the head of the lake and the Casca which left eight hours later was detained until the Selkirk was freed, for the reason that the latter was blocking the channel. The Watson River which empties into Lake Bennett, a tributary of the river there, was then bank full and all the little streams running from the summit of White Pass toward Whitehorse had never been known to have more water at this season of the year than at present.

The following details of production at the British Columbia Copper Company's smelter at Greenwood, Boundary District, during the company's last fiscal year, ended November 30, 1907, have lately been made public:

	Product.	Amount Realized.
Refined copper (lb.)	8,643,133	$1,579,907
Silver (oz.)	101,114	67,274
Gold (oz.)	24,967	512,233
Total		$2,159,414

The company received an average price of 17.52 cents per lb. for its copper, which, under a three-year contract, is sold through the L. Vogelstein agency.

In its "Mining Market" column the London *Mining Journal* on June 20 made the following comment: "Le Roi No. 2 have been £1 15s. during the week, on the starting of smelting by the Queensland Exploration Company, but the shares have fallen back in spite of the declaration of a dividend of 2s. Ymirs have been a feature. We mentioned a fortnight ago that the manager had apparently found the vein which he has for some time been seeking. It is now announced that the large holders of debentures have agreed to exchange their bonds for shares at par, the mortgage indebtedness of the company being now reduced from £40,000 to some £4,000. The share capital will be increased by 200,000 shares in order to effect the exchange and leave a balance over for working capital. Ymirs have been 4s. 9d., but are lower again."

During the last week of the month smelting operations were resumed by the Dominion Copper Company at its smelting works at Boundary Falls. Mr. M. M. Johnson, of Salt Lake City, Utah, U.S.A., the company's consulting engineer, who lately paid another visit to its mines and smelter in the Boundary, is reported to have said: "Everything is ready for the big new furnace to operate. This portion of the plant is equipped with the latest appliances for smelting copper ores, including electric feed, and has a

capacity of 650 tons a day. The mines have already been cleaned up, and ore is being broken down sufficient to keep the furnace busy. As soon as the two old ones, which have a combined capacity of about 600 tons, can be equipped with an electric feed they, too, will be blown in. This will perhaps take place within three or four weeks, after which time the plant will operate continuously, judging from the present appearance of things."

Announcement has been made by Mr. G. O. Buchanan, of Kaslo, distributor of the bounty under the Act providing for the payment of bounties on lead contained in lead-bearing ores mined in Canada that all lead bounty claims up to June 30 must be rendered immediately as to 60 per cent. thereof, and as to the remaining 40 per cent. as soon as the ore shall have been smelted. The latter claims, however, will not be paid until March 31, 1909, but must be sent in as soon as possible. All claims arising after July 1 will await the issue of the new forms which are to be printed by the department, which will be done as soon as the Lead Bounty Act shall have been signed by the Governor-General. In no case can claims arising under the new and old Acts be presented upon the same form. The claims under the old Act must be dealt with separately as if the business had altogether closed. A fresh start is to be made with the new claims, the forms for which will probably be received in Kootenay some time during August.

On May 18, the manager of the Ymir mine advised his company by letter, in part, as follows: "We are just now in a very broken and twisted portion of the country, but undoubtedly in proximity to a good ore body. I think I am justified in saying this. We have struck quite a bunch of really good ore, which has, so to speak, been tailed off from the main ore body, and we are following the slip by which this tailing off has been effected, and we are now in a big body of quartz containing some galena. It must be remembered that we are going in on this vein from its extreme end, where the vein fissure gradually loses itself in the bedding planes of the slates, and here instances are bound to occur of the fissure continuing as a mere slip, widening out in bunches, and of contortions of the slates generally, with admixture of vein material. At the present moment we are, I firmly believe, just underneath the main body of the ore." On June 2 he cabled: "Vein has been badly faulted; spent some time searching for; I am very glad to inform you that has again been found and looking well; now in ore; assays average $10 per ton; the high-grade ore runs $40."

From the Department of the Interior, Ottawa, we have received an excellent map of the British Columbia Railway Belt which is distinctly a credit to the geographer of the department, James White, F.R.G.S. It is a special edition prepared under the direction of R. E. Young, D.L.S., superintendent of railway and swamp lands, and shows lands disposed of, also timber berths, the various classes of lands being shown each in a separate colour. Apart from the particular purpose for which it was prepared the map has been brought up to date in regard to the information it gives relative to parts of the Province outside the railway belt. Many towns, villages, streams, etc., are shown, as are also the routes of existing railways and of proposed new lines. The map is in two sections and is printed on good paper, so that it will be serviceable. Another map the same department has been good enough to send us is the Railway Map of the Dominion of Canada. The several railway systems in the Dominion are shown in distinctive colours, with different indicators as to whether they have been completed, are under construction, or located only. The approximate route of the Grand Trunk Pacific railway from Alberta through British Columbia to the Pacific coast especially interests people resident in this Province, and that is shown on the map. Still other useful maps received are three prepared to accompany the "Annual Report of 1906 of the R.N.W. Mounted Police." These are (1) Provinces of Alberta and Saskatchewan, (2) Northwestern Canada, (3) Territorial Divisions of Canada, Nos. 1 and 2 (the latter in two large sections) show the mounted police stations in the respective territories covered by them and, in addition, give much useful information including tables of distances from Athabasca Landing to numerous points and intermediate distances along the winter road from Whitehorse to Dawson, Yukon. These several publications are welcomed for their practical value, which must be evident to all possessing them and in any way interested in the fields they respectively cover.

In the course of a somewhat comprehensive review of matters in which the town of Rossland and tributary district are more or less directly interested, the president of the Rossland Board of Trade in his annual address recently made the following reference to the mining industry: "Notwithstanding the difficulties that occurred in the early part of the year, with regard to supplies of coal and coke, and the great slump which took place in the price of metals in the latter part of the year, Rossland is to be congratulated on the fact that its mines continued to work steadily, while most of the mines in the Boundary as well as those in the Slocan and in other parts of the Province were closed down. This was largely due to the splendid feeling that existed between the mine management and their employees, which enabled them to meet the changed conditions and continue the operation of their mines on a basis that was satisfactory to all parties. Another factor to be noted was that our mines being gold and copper, and the gold values largely predominating, we did not feel the effect of the break in prices of metals to the same extent that other districts did. It is also

pleasing to find that according to the published returns there has been an increase in the metalliferous production of the Province amounting to $1,320,625, the total for the year being $21,025,500. The production of coal increased from $4,550,000 to $8,825,000. The total estimated increase, taking together metalliferous and non-metalliferous mineral products, was upwards of $4,636,625 or over 20 per cent., while that of 1906 over 1905 was only 11 per cent. In addition to the steady and satisfactory operation of the Le Roi Mining Company, Limited; the Consolidated Mining and Smelting Company of Canada, Limited; the Le Roi No. 2, Limited, and the Giant-California, we have had a great revival in prospecting and many properties that were worked in the early days are again being worked under lease with satisfactory results. This is not confined to one district, for, while, perhaps, the south belt has had most attention, good ore has been obtained from claims on the Columbia and Kootenay Mountains and the Murphy Creek district." Note.—The foregoing figures appear to have been taken from an exaggerated estimate, published early this year, which placed the mineral production of the Province for 1907 at between $29,000,000 and $30,000,000. A Rossland correspondent of the *Canadian Mining Journal*, Toronto, Ontario, sent that publication an estimate showing a total production of $29,850,500, which at the time was known to those fairly well informed as to the position and not given to exaggeration, to be much in excess of the probable total. The MINING RECORD's estimate showed a total of $25,738,983; the revised official figures several months later gave a total of $25,882,560. In contrast to the figures appearing in the report of the Rossland Board of Trade, the following are quoted from the "Annual Report of the Minister of Mines," for 1907, which, probably, was not published until after the Board of Trade report had been prepared: There was a decrease (not an increase) in the value of the metalliferous production of the Province in 1907, as compared with 1906, of $1,267,255, the totals of the two years, respectively, having been $16,216,847 and $17,484,102. The net production of coal showed an increase in value of $1,748,326, and of coke $341,343. It should be noted, though, that the value of coal was calculated at 50 cents per long ton higher than in previous years, and of coke $1 per ton, these increases in prices (the latter in our opinion was not warranted) together accounting for $1,122,946, or more than 50 per cent. of the total increase. The total increase of all mineral production was but $902,014, equivalent to an increase of 3.6 per cent. over 1906, and about 15.2 per cent. over 1905. We make this correction here, not in a carping spirit, but with the object of rectifying mistakes made, no doubt quite unintentionally, in the annual report of the president of the Rossland Board of Trade, which important organization we feel confident has no desire to misrepresent the position of mining—the leading industry in British Columbia, in point of annual total value of products.—Editor MINING RECORD.

INDUSTRIAL AND LABOUR CONDITIONS DURING JUNE.

INDUSTRIAL CONDITIONS during the month of June, as regards the mining industry of Canada, are thus commented on by the Dominion of Canada *Labour Gazette*:

Conditions in the Nova Scotia collieries continued very active and both output and shipments were heavier than in June, 1907. The output of the Dominion Coal Company during May was 332,588 tons, making a total output to the end of May of 250,000 tons in excess of the corresponding period of 1907. In Quebec, the asbestos mines were very active, but mica and copper plants were dull. Shipments from the Cobalt camp have been very heavy, owing in part, to the better smelting conditions prevailing for second-class, or lower grade ores. These better conditions were the result of the falling off in copper production, which previously furnished the proper flux for the treatment of certain ores now furnished by the Cobalt low grade silver ores. In 1904, the camp produced 158 tons of ore valued at $136,217; in 1907, ore shipments amounted to 14,040 tons, valued at from $10,000,000 to $12,000,000; from January 1, 1908, to June 30, 1908, shipments totalled 8,218 tons. Some revival was reported among the collieries of Alberta, though general conditions there and in the Crow's Nest Pass were quiet. On Vancouver Island some improvement was reported. The various metalliferous mining camps in British Columbia were increasing in activity, a feature of the month being the resumption of operations by the Dominion Copper Company.

STATISTICAL REPORT.

THE PRELIMINARY REPORT on the Mineral Production of Canada in 1907," reprinted in the 'Summary Report" of the Mines Branch of the Canada Department of Mines, was published in the MINING RECORD for March last, (pp. 109-114), so it is not necessary to here make more than brief reference to it. A summary shows the production to have been as under:

	Value.
Metallic minerals	$42,434,087
Non-metallic minerals	43,449,390
Estimated value of mineral products not returned	300,000
Total production	$86,183,477

These figures indicate a total net increase over the production of 1906 of $7,126,169. The larger individual increases were: Coal, $4,828,219; silver, $2,669,766; copper, $758,170; nickel, $586,573, and asbestos, $444,900. The important decreases were: Gold, $3,230,436 (of which $2,450,000 was in the Yukon production), and lead, $556,351.

ACT RESPECTING BOUNTIES ON LEAD.

Provisions of Act Continuing Payment of Bounty.

LEAD-MINING IN CANADA is to be further fostered by the continuance of payment of bounties by the Dominion Government during a second period of five years from June 30, instant. The text of the new act is as follows:

An Act respecting the Payment of Bounties on Lead contained in Lead-bearing Ores mined in Canada.

Whereas under the provisions of an Act passed on the 12th day of October, 1903, being Chapter 31 of the Acts of 1903, payment of a Bounty on Lead contained in Lead-bearing Ores mined in Canada, not to exceed $500,000 in any fiscal year, was authorized to be paid until the 30th day of June, 1908; and whereas the total amount of Bounty paid thereunder up to the 31st day of March, 1908, was $669,922, and it is estimated that a further amount of $45,000 will be payable on or before the 30th day of June, 1908, leaving unexpended about $1,785,078 of the total amount to be paid under the provisions of the said Chapter 31: Therefore His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada enacts as follows:

1. The Governor-in-Council may authorize the payment of a Bounty of 75 cents per 100 pounds on lead contained in Lead-bearing Ores mined in Canada, on and after the 1st day of July, 1908, such Bounty to be paid to the producer or vendor of such ores: Provided that when it appears to the satisfaction of the Minister charged with the administration of this act that the standard price of pig lead in London, England, exceeds £14 10s. per ton of 2,240 pounds such Bounty shall be reduced by the amount of such excess.

(a) The total amount of Bounty payable under the provisions of Chapter 31 of the Acts of 1903, and of this Act, shall not exceed $2,500,000.

2. Payment of the said Bounty may be made from time to time to the extent of 60 per cent. upon smelter returns showing that the ore has been delivered for smelting at a smelter in Canada. The remaining 40 per cent. may be paid at the close of the fiscal year, upon evidence that all such ore has been smelted in Canada.

3. If at any time it appears to the satisfaction of the Governor-in-Council that the charges for transportation and of treatment of lead ores in Canada are excessive, or that there is any discrimination which prevents the smelting of such ores in Canada on fair and reasonable terms, the Governor-in-Council may authorize the payment of Bounty, at such reduced rates as he deems just, on the lead contained in such ores mined in Canada and exported for treatment abroad.

4. If at any time it appears to the satisfaction of the Governor-in-Council that products of lead are manufactured in Canada direct from lead ore mined in Canada without the intervention of the smelting process, the Governor-in-Council may make such provision as he deems equitable to extend the benefits of this Act to the producers of such ores.

5. The Bounties payable under the provisions of this Act shall cease and determine on the 30th day of June, 1913.

6. The Governor-in-Council may make regulations for carrying out the intention of this Act.

THE INDUSTRIAL DISPUTES INVESTIGATION ACT, 1907.

Decisions Under Act by Alberta Courts.

TWO DECISIONS under the "Industrial Disputes Investigation Act, 1907," were recorded during June by the courts of Alberta, in the case, namely, (1) of an appeal by the Hillcrest Coal and Coke Company of Hillcrest, Alta, from the decision of Police Magistrate Belcher, of Pincher Creek, Alta.; and (2) of an action for damages brought by the United Mine Workers of America against the Strathcona Coal Company of Strathcona, Alta., for alleged breach of contract. The Dominion Labour Department had not at the close of the month received official statements with regard to these cases, but the decisions have been taken by the *Labour Gazette* from apparently reliable reports appearing in the daily press.

In the Hillcrest case, the company had been convicted of declaring a lockout contrary to the terms of the "Industrial Disputes Investigation Act, 1907," and fined $200 and costs, being $100 for each of two days during which the lockout continued. The company closed its mine on October 10, while a Board of Conciliation and Investigation established under the act was pursuing its investigations. The Miners' Union laid information under the section of the act forbidding a lockout pending an investigation before a board. The appeal was heard before Judge Carpenter, judge of the district court of the judicial district of Macleod, who dismissed the case with costs.

The action brought by the United Mine Workers of America against the Strathcona Coal Company of Edmonton, Alta., for breach of contract, was heard before Hon. Mr. Justice Stuart, of the Supreme Court of Alberta, at Edmonton, and judgment was rendered by him on June 29. The action called for $12,000 damages, and the contract alleged to have been broken was an agreement made between the company and its employees before a Board of Conciliation and Investigation in December last. Judge Stuart dismissed the action.

The output of coal from the coal mines of the United Kingdom in 1907 was 267,830,962 tons, an increase over that of 1906 of 16,763,334 tons. The increase was shared by all fields, though in largest measure by the Midland, which contributed nearly 24 per cent. of it.

RETROSPECTIVE OF EAST KOOTENAY.

Notes of Its Mining Industry Ten Years Ago.

CRANBROOK, EAST KOOTENAY, possesses two local weekly newspapers. One of them, the *Herald*, recently completed its tenth year of publication in that progressive town, and it marked the occasion by publishing numerous letters from old residents and other information relating to the district as it was in the nineties. As likely to be of interest to its many readers, the MINING RECORD has made extracts from the *Herald* concerning mining, then small in comparison with its considerable magnitude and value to-day. These extracts follow:

From a "Review of Early Days," written by the revered Father Coccola and first published in the 1902 Christmas edition of the *Herald*, now reprinted by that journal, the following excerpt is made: "In working for the Indians the St. Eugene Mission did not neglect the whites, who were visited at their homes regularly twice a year, from Windermere, East Kootenay, to Nelson and Robson, West Kootenay. In sickness or accident, the priests had to act as doctors of the body as well as of the soul. The prospects on Perry Creek, the great North Star in 1892, and the Sullivan group shortly after, attracted men of all nationalities to the district. The Mission being then the central point, was the general rendezvous, and many a night the house was so crowded that it was impossible to walk on the floor without stepping on some of the fatigued and sleeping travellers. Miners were coming to the Mission to receive medical treatment from the fathers, with the school sisters as nurses. It became necessary to put up a new and larger house, with comfortable rooms, which was done in 1893. A larger and better church was needed, but where to get the money was a hard question to solve. Divine Providence came to the rescue. The priests told the Indians to prospect as the white men were doing, and not long afterwards Indian Pete came in with a piece of galena the size of an egg, but would not tell where he had found it. He said they had always accused the Indians of laziness; now he wanted to see what the priests were good for, and he wished them to go and see where the prospect was. This they did, in company with Mr. James Cronin, who happened to be visiting the district. Father Coccola, under the leadership of Pete, left for Moyie. Prospectors had notice of that and were on the watch, but were left behind. The place where Pete had found the galena was not very encouraging but the croppings were good indications, so three claims were staked, the St. Eugene, Peter and Loreto. Men were put to work and the prospects took the appearance of a mine, which at last was sold and with the proceeds Pete had a house built and his farm stocked. The balance went to build the beautiful new church which is the pride of the Indians and the admiration of the whites. . . . . The construction of the Crow's Nest Pass railway necessitated the building of a larger hospital, with accommodation for 40 patients. During an epidemic of fever, 81 patients were treated at one time, and had it not been for the St. Eugene hospital and the Sisters of Charity, who by their devotion to the sick won the affection of the public, hundreds of miners and railway men would have perished."

In a laudatory notice of the late Colonel James Baker, who in 1895-1898 was provincial minister of mines, the *Herald* says: "In 1884 Colonel Baker joined his son, V. Hyde Baker, in Canada, and together they journeyed to British Columbia, by way of the United States, coming into East Kootenay with a pack train via Sand Point, Idaho. First the colonel took up land on Skookumchuck Creek, but this was abandoned the following year, and what is now Cranbrook was purchased. . . . . Michael Phillips, of Tobacco Plains, told Colonel Baker that he believed there was coal in the Crow's Nest Pass, and the latter, in company with the Hon. F. W. Aylmer and the Fernie Brothers, immediately put men to prospect and find out what the coal measures really were. It was soon demonstrated that the seams were of immense size, and the fields were eventually sold to the Crow's Nest Pass Coal Company. The discovery of coal in paying quantities in the district made the advent of a railway a necessity. Colonel Baker worked early and late to this end, which became a fact in 1898, by the opening of the Crow's Nest Pass railway."

E. Elwell, of Cranbrook, who arrived in East Kootenay in June, 1906, after telling of his experiences up till the time of the construction of the Crow's Nest railway, says: "Then the railway came, disturbing the peace and calm of the valley of the Kootenay—not that it wasn't welcome—and with it came the change. Prospectors rushed into the country and mining was the absorbing topic and engaged the attention of all. This passed away, leaving good work done in the shape of the St. Eugene, North Star and Sullivan mines and other developed prospects."

A. E. Watts says, in relating his early experiences in the district: "At that period the total payroll on all the workings at or near Moyie would be about $2,000 per annum. A very few years after that the payroll amounted to nearly $1,000,000 per annum. At the time spoken of James Cronin, the original owner, had two men at work on the St. Eugene, and the first time I met him he was himself packing supplies up to the mine. With this the reader can compare conditions to-day and the work going on around Moyie. The St. Eugene has 18 miles of underground work, and is down 1,000 ft. below the level of the lake; and it has in sight the largest bodies of clear silver-lead ore on the continent."

M. A. Beale says: "When I arrived in Fort Steele in May, 1897, Southeast Kootenay was practically unknown; Fort Steele was the only town and its residents were then congratulating themselves over the change in the postal service from a monthly to a fortnightly delivery, and the mail was brought in by

stage from Golden. The North Star was the only shipping property in the district—no Fernie coal mines, no St. Eugene, no Sullivan, no Marysville smelter, no lumber mills, no other towns, and no means of transportation into the country except by stage or boat or cayuse, and this was only ten years ago. Now take a cursory glance over the district today. Cranbrook and Fernie each with a population of about 3,500, and several other thriving towns; one of the largest coalfields in the world, and the biggest silver-lead property on the American continent, both in active operation, not to mention the other mining properties now working, and the Marysville smelter; railway divisional point; lumber mills too numerous to mention; valuable timber resources, iron deposits, water power, fire-clay deposits, farm lands and fruit land of the very best."

CANADIAN MINING INSTITUTE SUMMER EXCURSION.

PRELIMINARY NOTICE has been given by the secretary of the Canadian Mining Institute that the council of the institute has arranged for a summer excursion, which will be participated in by the Institution of Mining and Metallurgy; the Iron and Steel Institute; the Institute of Mining Engineers and other important British and European mining and engineering societies, and, too, by members of the Canadian Mining Institute.

The excursion as a whole will include visits to most of the important mining regions of the Dominion (exclusive of the Yukon), but for the convenience of members whose time may be limited, will be divided into stages, and members may participate in any or all.

A special train of sleeping and dining cars will, if possible, be engaged for the whole excursion, which will start from Quebec on or about August 24, next.

The several stages are as under:

Stage I—Nova Scotia and Quebec Excursion.

Quebec to Sydney (including, in Nova Scotia, visits to the Pictou and Glace Bay coal mines, to the Sydney iron and steel works; and in Quebec, the asbestos and copper regions of the Eastern Townships). Time required, approximately, nine days

Stage II—Ontario Excursion.

Montreal to Toronto, the Cobalt and Sudbury districts (including visits to Niagara Falls, the silver mines of the Cobalt area and the nickel-copper mines and metallurgical works at Sudbury). Time required, six days.

Stage III—Western Excursion.

North Bay to Victoria, British Columbia, and return (including visits to the Fernie and Bankhead coal mines, the St. Eugene silver-lead mines at Moyie, and metallurgical works and copper-gold mines of Rossland and Boundary, the Bonnington Falls power plant, etc.) Time required, twenty-five days.

The secretary of the western branch of the institute has been informed that the time table, as at present arranged, provides that those joining in the western excursion shall reach Winnipeg on September 10 and leave the same morning for British Columbia. From Dunmore Junction the party will journey over the Crow's Nest line, arriving at Fernie on September 13, and Rossland at midnight of the 14th. Three days will be occupied in visiting mines, etc., at Rossland, Bonnington Falls and Nelson, whence the party will go to the Boundary, leaving Nelson on the morning of the 18th. Returning from the Boundary, West Robson will be reached on the night of the 20th, Revelstoke the following afternoon, and Victoria on the evening of the 22nd. Two or three days will be spent at the capital, where the institute will hold a business session, and then the visitors will start on their return journey, going from Vancouver to Banff, where a stop-over of one day has been arranged for, and thence east.

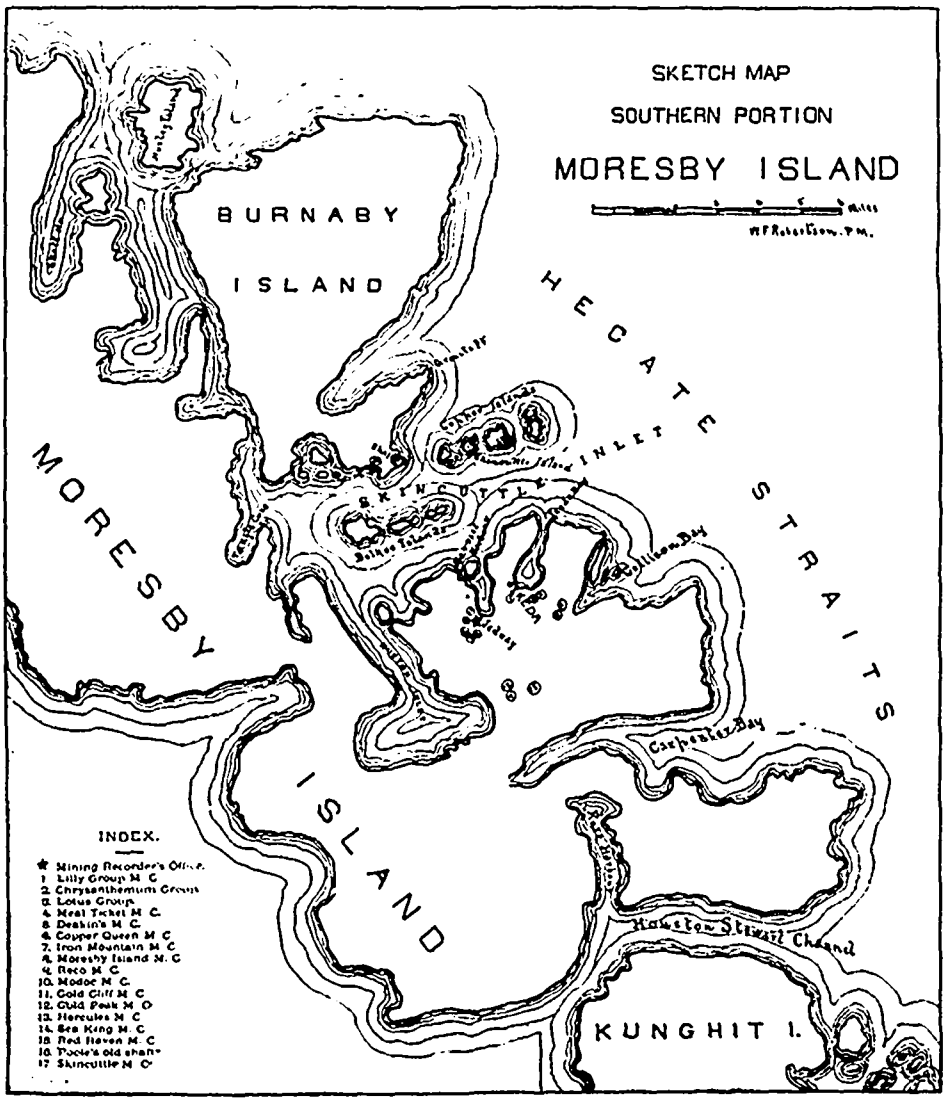
The itinerary has not yet been finally adopted, but it is probable it will follow closely along the lines above indicated.

The correspondent at Sydney, New South Wales, Australia, of the London *Mining Journal*, states that "Australian shareholders in the Lloyd object to the publication of the manager's reports being delayed in the Commonwealth until they have reached London. They think it is rather hard that they should have to wait over a month before they are allowed to know what has transpired at a mine a few miles out of Sydney." A similar complaint might be made in connection with several British owned mines operating in this Province. But perhaps we should be thankful that we get information even a month old, for that is much better than in the case of some companies having headquarters in the United States, which seldom publish results excepting at the time of their annual meetings of stockholders, and then they more often than not restrict themselves to giving the merest outline of the year's work and results. However, so long as a majority of the stockholders shall be content with a continuance of this custom of non-publication of information no reasonable objection can be made, for the general public has no rights in the matter. There is, though, a steadily growing sentiment in favour of the larger mining companies publishing more information—not necessarily such particulars as for good business reasons are better witheld, but general information, the disclosure of which would not occasion loss to the company, or place it at a disadvantage, in the carrying out of its business affairs. Those who are familiar with the custom of many mining companies, in Australia for instance (not the British owned ones), know the considerable amount of interest taken in the numerous extracts from mine managers' weekly or monthly reports of progress in the mines that are published in the larger metropolitan newspapers, and would fain see similar information in degree made available here so that official statements might be substituted for the "hot air," miscalled mining news, that so often is given space in newspapers.

QUEEN CHARLOTTE ISLANDS.

Views of Mining and Other Scenes.

QUEEN CHARLOTTE ISLANDS give promise of proving important producers of mineral after necessary development work shall have been done. Last February the MINING RECORD reprinted Bulletin No. 1 of the British Columbia Bureau of Mines, on "Mineral Locations on Moresby Island, Queen Charlotte Group," but the illustrations appearing in the current number of this journal were not then available. The half-tones are reproductions of photographs taken by Mr. W. F. Robertson, provincial mineralogist, when he visited the several mining camps in August and September of last year. Together with the sketch map of a portion of Moresby Island, they will serve to convey a good idea of conditions at the various places depicted at the time of the official visit. Since then, however, further progress has been made—additional development work has been done, some power machinery installed, and from the property at Ikeda Bay known as the Japanese mine shipments have been made in sufficiently large quantitity to enable the owners to determine what values the ore in bulk may be expected to yield. On two or three other properties development work has given distinctly



encouraging results in regard to the quantity of ore which appears to be available, while more recently a new find has been reported of ore in such quantity and, judging by specimen assay returns, of such value as to give confidence that mining will yet become a payable industry on Queen Charlotte Islands. Prospecting is being vigorously carried on in different parts of the group, and the general opinion among those chiefly interested is that at no distant date several properties will be regularly shipping ore to the smelters.

CASSIAR DISTRICT

Official Reports for the Year 1907.
(Continued from last Month.)

CASSIAR DISTRICT is further dealt with in the following official reports, additional to those published in last month's MINING RECORD, which are included in the "Annual Report of the Minister of Mines" for the year 1907:

The report of James Porter, gold commissioner, on the Stikine and Liard mining divisions, for the year says:

"The year has an exceptionally light record in mining from the point of view of the actual output of gold, and this fact is in most part attributable to the unsuccessful operations of the Berry Creek Mining Company, Limited. It is deplorable that this energetic and deserving company has not met with better success, for its own welfare and for the advancement of prosperity in the district generally. I think it is safe to say that the successful operations of the company would mean a great deal for the place, as, no doubt, it is being closely watched by people on the outside who are ready and willing to advance capital towards opening and working hydraulic diggings here if they had the assurance of one fruitful venture.

"Very little attention has been paid during the year to outside prospecting, and apart from the recording of quite a number of quartz locations and several hydraulic leases, I have nothing to tell of new finds other than what will appear later in this report."

Of the divisions, individually, Mr. Porter reports:

STIKINE MINING DIVISION.

ISKUT RIVER.

This stream is probably the largest tributary of the Stikine River; it flows from the northeast and joins the main river a few miles above the crossing of the International boundary. Some attention was paid to prospecting for quartz on the lower part of this river during 1906, the operations being taken up again this season, and in October nine locations were recorded in my office by the party residing in Wrangel, Alaska. It is said that rock taken from some of the claims gives very encouraging assays. The place is easy of access, and it would not require very high-grade ore to make it pay for handling.

Rock Formation—Entrance to Ikeda Bay, Moresby Island of Queen Charlotte Group.

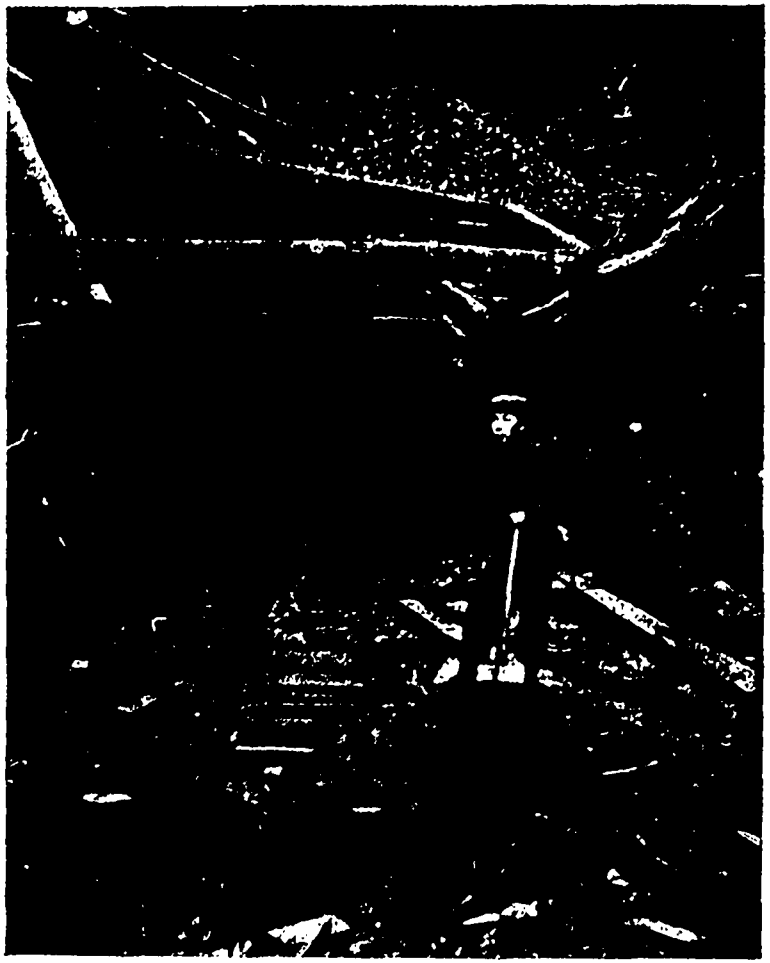
FIRST NORTH FORK OF CLEARWATER RIVER.

There have been no new developments on this creek, and the facts regarding it remain the same as reported last season. The one company operating there has not done well, on account of a late freshet that washed out its ditch-head and otherwise prevented the carrying on of successful mining, as the water remained high for considerable length of time. Nothing more than assessment work has been done on the three mineral claims which are owned by Lewis Kirk on the opposite side of the Stikine River from Clearwater River.

LIARD MINING DIVISION.

DEASE CREEK.

On this creek there are five hydraulic leases and one creek lease. Four of the hydraulic leases were re-



No. 1 Tunnel.

No. 2 Tunnel.

Lily Mine of Awaya, Ikeda & Co.'s Lily Group, at Ikeda Bay, Moresby Island of Queen Charlotte Group.

The development work for the Lily group of eight mineral claims has been performed on the Lily claim, upon which the most available outcrop appeared. This outcrop showed up in a small creek, the water of which had washed clear an outcropping of magnetite carrying chalcopyrite. What is called No. 1 Tunnel is really an open-cut in the creek bed. From No. 2 Tunnel, some 400 ft. further down the creek, about 700 tons of copper ore were shipped during 1907. This ore assayed 0.25 oz. gold, and 3.5 oz. silver to the ton, and 9 per cent. copper. All the work about this mine was performed by Japanese.

staked and recorded during the year. Not any of the claims on the creek have been fitted with machinery, and the only work in progress there during the season was in the hands of four white miners and as many Chinese, who have small holdings on the creek.

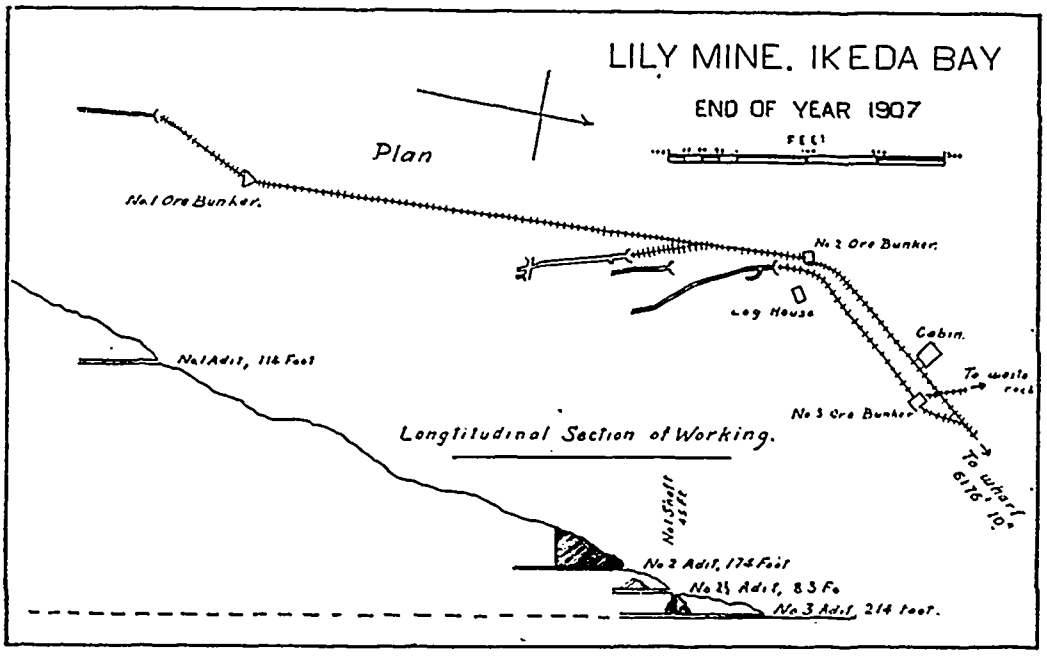
THIBERT CREEK.

On this creek the Berry Creek Mining Company, Limited, has 10 hydraulic leases, of approximately 80 acres each, which lie on the right or south side of the stream. Seven of these claims adjoin, with a frontage each of 1,500 ft. on Thibert Creek. The other three are above the mouth of Berry Creek. Although this company was in thorough shape to operate on a large scale, it is regrettable to say that the season ended most discouragingly, owing to several caves or land-slides from the hills over-hanging the workings completely filling the diggings and doing much damage to the pipe-lines and machinery generally about the works. The most destructive cave of all occurred late in August or early in September, burying the works and causing the manager to send the greater part of the men employed out of the district, as they could not be worked longer to any advantage. From all indications, the ground is quite rich enough to pay well if these mishaps could only be avoided, but the problem is how to prevent them.

Other mining on the creek has been of a desultory nature and of little account.

LITTLE DELOIRE CREEK.

This stream is a tributary of Thibert Creek. It rises in the height of land lying between Dease and Thibert Creeks and flows with a gradual trend towards the north, joining Thibert Creek at a point about three miles above the junction of that stream with the Dease River. The creek is small and does not exceed seven or eight miles in length. During the early days, considerable placer gold was taken from it where the ground was found shallow, and some of the high bars and points paid very well. One or two unsuccessful attempts were made to bottom the deep ground. After that the creek was abandoned for several years, until prospecting was again resumed by the Mitchell Brothers a few years ago. This season found these not-to-be-discouraged men again in the field, fully equipped and prepared to bottom the creek if possible, as they had brought with them a steam pumping outfit and a party of eight men. They put a shaft down to bedrock, which was reached in 25 ft., and I am pleased to report that they were rewarded by finding coarse gold in paying quantities. The shaft in question was sunk close to the present channel, and after reaching bottom a tunnel was run to cross-cut the channel. This was continued for 40 ft. on good pay, without a raise in the rock, when, unfortunately, the shaft collapsed and allowed the diggings to fill with water. It was extremely lucky, however, that there was no one in the mine at the time. On account of this mishap, further operations for the season were abandoned and everything is being put in readiness for a start next spring. These people have secured three creek leases of half a mile each.



MCDAME CREEK AND TRIBUTARIES.

Several creek and hydraulic leases have been recorded on the main creek and one of its tributaries, but so far nothing more than development work has been done on any of these holdings. Some are now in bad standing, from delinquency in rentals and development work. Some individual mining is carried on, both along the main stream and some of its

tributaries, with no marked success. There is good reason to suppose that when this once famous old creek is properly taken hold of and rightly handled by strong hydraulic companies it will prove itself to be worthy of more attention than what it is receiving at present.

It is encouraging to note that several new quartz locations have been recorded during the year in the McDame Creek country, and assessment work has been recorded on a great many of the claims previously located and recorded. Seventeen mineral claims have been turned over to James Rosenthal and Adolph Kurz, of Chicago, Illinois, who had a provincial land surveyor in the district during the summer surveying their holdings, with a view to Crown-granting them. These claims are mostly situated on the first south fork of the McDame Creek and Haskins Mountain. In the summer of 1906 an expert, on behalf of the Chicago men mentioned, visited McDame Creek for the purpose of examining the different ledges covered by their present holdings, and his report was so favourable that a deal was made and the claims in question acquired. It is said that some of the claims are rich in gold, silver, copper, zinc and other values. I shall hope to be in a position when I make my next annual report to give reliable facts and figures relating to the values of these properties.

Valley of McDame Creek, in Liard Mining Division, Northern British Columbia.

ROSELLA CREEK.

The Rosella Hydraulic Mining and Development Company, Limited, of Victoria, B. C., has not made any marked headway this season with the work in hand on the hydraulic and creek holdings of the company on this creek. This may, in a measure, be owing to the regrettable and sudden death of the company's manager, the late John W. Haskins.

The mineral locations made last season some distance to the south-east of McDame Creek have been kept in good standing, and I understand that ore taken from them runs high in copper and other values. Two or three other claims were located there last spring.

GENERAL.

It must be understood that, under present conditions, the whole of this interior country will have to remain undeveloped, for the short seasons, high prices, slow and excessive transportation rates, all tend to retard its growth and to keep it in the background. Under more favourable conditions, however, I feel certain the country would soon show much activity, for there is little doubt about its richness from a mineral point of view. The advent of railways into the country from the south will bring about great changes.

SKEENA MINING DIVISION.

Wm. Manson, gold commissioner, reports for 1907:

During the year considerable interest has been manifested in mining in the district, and indications from various points give promise of important development in the near future.

Two mines have made shipments during 1907—the Outsiders mine, Maple Bay, Portland Canal, operated by the Brown Alaska Company, and the Ikeda mines, at Ikeda Bay, Moresby Island, operated by Awaya, Ikeda & Company, Limited. Other

claim owners are rapidly developing their properties, and it is expected before long that many mines will be added to the shipping list.

QUEEN CHARLOTTE ISLANDS.

Important mining activity is in progress on Queen Charlotte Islands, principally on Moresby Island. I recently had an opportunity of visiting several of the properties at Jedway, Ikeda Bay, and Klunkwoi Bay, and was much impressed with the appearance of the mineral and with the confidence of the prospectors and mine-owners as to the future of this section. Much interest has been created by the recent discovery of coal, which is said to be a coking quality, found in that vicinity. If this should prove to be a suitable coal, and in sufficient quantity, it would very materially aid in the development of mineral properties which will soon require facilities for smelting the ore on the ground.

Awaya, Ikeda & Co.'s Rose Mineral Claim, Ikeda Bay, Moresby Island of Queen Charlotte Group.

In his report on Moresby Island the Provincial Mineralogist said: "On the Rose mineral claim, of Awaya, Ikeda & Co.'s Chrysanthemum group, there is naturally exposed in a bluff a mass of magnetite which, on the surface, is some 20 ft. high and 50 ft. long. This occurs along a diorite-limestone contact, the ore lying nearly horizontal underneath the limestone. In the limestone there is a cave, which was followed in, and up, for more than 50 ft., formed by the leaching of a stream of subterranean water, and in this there is considerable hydrated iron oxide."

At the present there are three deputy recording offices on Queen Charlotte Islands; one each at Masset and Skidegate, on Graham Island, and one at Jedway, on Moresby Island. The volume of business being done there, particularly at the last-named point, will warrant the creation of a separate mining division for Queen Charlotte Islands at an early date.*

It is unnecessary for me to go into details in regard to the various properties at this point, as Bulletin No. 1, 1908, recently issued by the provincial mineralogist, gives full particulars.

PORTLAND CANAL.

Bear River.—The principal development work at this point has taken place on Glacier Creek, where the Portland Canal Mining and Development Company, Ltd., has sunk a shaft 75 ft. in depth and has made several deep open cuts on its property, the Gipsy group. Three tunnels have also been run, respectively 26 ft., 115 ft. and 120 ft., with cross-cuts from these tunnels aggregating 36 ft. on the Little Joe claim. A favourable report has been made on this property by W. J. Elmendorf, mining engineer of Spokane, Washington, U. S. A.**

The Columbia group, owned by Rush and Bagg, is situated on the north fork of Glacier Creek. A tun-

*By an order-in-council passed in April, 1908, and taking effect on May 15, 1908, the Queen Charlotte group of islands was detached from the Skeena mining division and formed into a separate mining division, under the name of the Queen Charlotte mining division, of which the mining recorder's office is to be at Jedway, on Harriet Harbour, in the southern part of Moresby Island.

**See MINING RECORD for November, 1907, p. 437.

nel 28 ft. long was driven last season, besides a number of trenches and open cuts.

On the Lake View group, owned by McKay and Ribeau, a shaft was sunk to the depth of 15 ft., with a cross-cut at the bottom 10 ft., and an open cut on the ledge was run for a distance of 75 ft.

Good values of gold and silver have been found on the Jumbo and Ben Bolt mineral claims, owned by Samuel Gourley. A considerable amount of work has been done on these two claims, as well as on the Rex, Ajax, Minnie and Maid of Erin.

The Stewart Mining and Development Company recently acquired the property consisting of the claims Sundown, Sunbeam, Ben Hur and George E., on which a good deal of work has been done. It is the intention of the company to prosecute the operations during the coming season.

A number of other claim-holders have done assessment work on their properties, the showings and values proving to their satisfaction.

Bitter Creek.—The Grizzley group of claims, owned by Messrs. Chambers and Rainey, is situated on this creek, on which a tunnel 20 ft. long has been driven.

American Creek.—The American Girl group, situated on this creek has had additional tunnel work done for a distance of 20 ft. and is again in ore.

Salmon River.—The Buena Vista group and the Nabob mineral claim are situated on the Salmon River, and are owned by Lindeborg Bros. Some 32 ft. of tunnel work was done during the past year on the Buena Vista, and an open-cut 12 ft. long and 10 ft. deep has been cut on the Nabob. These claims all show good values in gold, copper and silver.

General.—The foregoing are the principal properties at the head of Portland Canal, which carry gold, silver-lead and copper ore. Quite a number of locations have been made during the year, and the outlook for the camp is very promising.

Maple Bay.—The Outsiders mine, at this point, was in operation for nearly two years by the Brown Alaska Company, and was making good progress as a shipping property until last October, when, unfortunately, owing to the financial depression and the fall in the price of copper, the management was compelled temporarily to cease operations.

Tunnel on Meal Ticket Mineral Claim, Moresby Island of Queen Charlotte Group.

"The Meal Ticket mineral claim is located on the north side of Collison Bay, about 280 ft. elevation and one-third of a mile back from the water."

Observatory Inlet.—A number of locations were made on Observatory Inlet during the year. A deposit of molybdenum was discovered last fall on the Mammoth and Conundrum claims.

The Hidden Creek group of mineral claims is considered a valuable property and recently changed hands at a good figure.

BELLA COOLA.

The Bella Coola section has recently been included in the Skeena mining division.

Mining in this vicinity is comparatively new and previous to last year very little had been done. During the year 44 free miners' certificates were issued and 62 claims recorded.

Development work has been done on the Sure Copper group, consisting of two tunnels 40 ft. and

100 ft. long, respectively. On an average, 8 men have been employed during the season.

The Bella Coola group of claims, owned by the Bella Coola Copper Company, Limited, is situated on the north side of Burk Channel, on the Bella Coola Mountain. Considerable surface work and open cuts have been done on this property.

KITIMAT.

A tunnel 155 ft. long has been driven, with crosscuts 17 and 24 ft.; also surface work and open cuts on the Golden Crown group of claims, owned by Steele and Dunn.

The Bimetallic group of claims is also situated at Kitimat, and is owned by Lindeborg Bros. During the last year a tunnel has been driven for a distance of 32 ft., making 72 ft. driven. The orebody is more than 100 ft. wide.

The deputy recorder's office at this point has been closed for some time, but for the convenience of the people in this locality it should be opened again during the coming spring.

GENERAL.

From the sub-recording offices at Prince Rupert, Essington, Hartley Bay and Unuk River there is very little new to report. Claims have been recorded, prospecting is going on, and the necessary assessment work is being done.

The revenue for the year was: From free miners' certificates, $2,501.45; mining receipts, $5,808.95; total, $8,310.40.

OMINECA MINING DIVISION.*

The report of F. W. Valleau, Gold Commissioner, with office at Hazelton, says:

This division being the largest one in the Province, and the distances so great between the sub-mining recording offices at St. John, Fort Grahame, and Stuart Lake, with no communication between them and Hazelton either by travel or mail, I have not been able to hear from them as to what is being done in their sections, but I hope to get returns from them during the winter, when I will forward them to you in a supplementary report.

In and around Manson, Slate and Lost Creeks, the following work has been done during the past season:—

The Kildare Gulch Mining Company, of Ottawa, had about 12 men engaged in prospecting its ground on Slate Creek during the entire season, but, from what I have been able to learn, the returns have not been satisfactory. I am sorry to have to report the death by drowning on the Skeena River of Mr. James Munroe, late manager for this company.

Town of Skidegate, Southern End of Graham Island of Queen Charlotte Group.

Lost Creek is being worked by Steele, Martin and Mullon, who are on the ground this winter prospecting their ground by running a tunnel into the east bank above the canyon. A few Chinamen worked on Germansen Creek this past season, but as they had gone down the river before I reached here I am unable to say what they took out.

Tom Creek is still being worked by the May and Condit Brothers, who report that work has been carried on continuously from the opening of the season until the middle of October. The depth of ground averaged from about 20 ft., 16 ft. of which was removed by ground-sluicing, and the remaining 4 ft. shovelled through the sluices. Five men were employed throughout the season. This is the only property now being worked on this creek. May and

*Heretofore this division has been treated as part of the Cariboo District.

Condit are also running a tunnel on the lower portion of their ground and are now in some 260 ft.

thereon, a couple of Chinamen being the only persons on this creek.

Locke Bay, Inner End of Klunkwoi Bay, Queen Charlotte Islands.

Entrance to Shaft of Reco Mineral Claim, Moresby Island.

No work has been done on Vital Creek this summer by either of the two companies holding leases

In the Aldermere section of this division there has been great activity in quartz mining, and a large

number of very promising locations have been opened up, notably in the Howson Basin, Telkwa Valley, and the Hudson Bay Mountain. A number of these claims have been bonded to outside capitalists and some of the bonds have been taken up.

A new mineral zone has been discovered in the Babine Range to the east of these camps, and some valuable finds are reported; these also have been inspected by intending purchasers and some sales made. The nature of the ore found was galena and copper pyrites.

The camps on the divide between the Telkwa and Zymoetz Rivers have also had a large amount of development work done this season, and are reported to be showing some very fine ore.

Work on the different claims at Kitsilas Canyon is progressing favourably, and these claims seem destined to become shipping mines when the Grand Trunk Pacific Railway shall be built.

There has been a discovery of placer gold made in the Ingenika River this past season, which promises to be the making of a good camp there. Jenson Brothers came through from there this past fall and reported having found good prospects on McConnell Creek, a tributary of the Ingenika River, and have now returned to the creek with five miners and provisions for a year, to prospect the ground.

THE GRANITE GROUP, NELSON.

FROM NELSON has been received information to the effect that on the Granite group of mineral claims, situated about five miles west of that city, a discovery of more than ordinary importance has been made recently. The following particulars have been published by the *Daily News*:

A parallel vein has been located 30 ft. from the old vein, which has been worked for years past. This vein has been proved for 600 ft., having been opened in three places. It varies in width from 2 ft. to 5 ft. 6 in. The values are thought to be as good as or better than, on the old vein which, during the last two years under lease to T. Gough, J. P. Swedburgh and E. Guille, has produced about $70,000.

Other veins have recently been discovered on this group, none of which, however, are as important as the big vein just located. Some ore was brought in yesterday from the old vein which is distinctly specular in character, the white quartz being flecked with gold.

The whole hillside here is covered with a great deal of detritus, covering the real formation, accounting for the comparatively long period of time during which the other veins have remained undiscovered. There is little doubt that the important nature of the new discoveries will lead to the development this summer of other and contiguous properties.

YALE DISTRICT.

Official Reports for the Year 1907.

MINING IN YALE DISTRICT during the year 1907 was comparatively unimportant, excepting in connection with the commencement of the development on a commercial scale of the Nicola Valley coal field. The district comprises the following mining divisions: Kamloops, Ashcroft, Nicola, Yale and Similkameen. Reports on mining in the Nicola division appear elsewhere in this number of the MINING RECORD. Those on the four other divisions named are here reprinted, together with that of the gold commissioner for the district. In order to prevent misapprehension it is here pointed out that the Similkameen *division* does not include the whole of what is generally known as the Similkameen *district*, since the most important metalliferous mining camp in that district, viz., Camp Hedley, is situated in what is officially known as Osoyoos mining division, and appears in the "Annual Report of the Minister of Mines," from which the reports here reprinted have been taken, under the general head of the Boundary District.

GOLD COMMISSIONER'S REPORT ON YALE DISTRICT.

On mining operations during the year 1907 in Yale district as a whole, G. C. Tunstall, gold commissioner, makes the following brief comment:

In the Kamloops division there have been few changes worth mentioning since the date of my last report. Not much prospecting has been done, in consequence of the slump in copper. A few of the claims on Coal Hill are being worked by the owners, whilst in the majority of instances the labour has not exceeded the limit of assessment work. There is every reason to believe that a smelter, of considerable capacity, will be erected in the near future, in the vicinity of the line of railway. With that object in view, mine owners have been consulted in regard to the quantity of ore that would be available for treatment from their respective claims, and the information obtained has been deemed satisfactory.

The coal-boring operations, six miles west of the town, attained a depth of more than 300 ft. when a stratum of soft shale was struck, which made progress so slow that work was temporarily suspended, to allow of prospecting being performed with the drill at the shaft near the old Guerin property. I have since heard that the operations in that vicinity have not proved successful in finding a seam of sufficient thickness as to prove of commercial value, and it is probable the drill will be removed to its former position.

Placer mining in the Yale division is an industry of the past. I regret to state that the operations of the Yale Dredging Syndicate, below Yale, have been a failure, and the proprietors are making arrangements for the disposal of their dredge, which was of the New Zealand type, and operated by men of experience in that country. It is, however, gen-

erally conceded that the completion of the V. V. & E. railway will bring into mining activity valuable mineral properties on the southern slope of the Hope Mountain.

The Highland Valley mines in the Ashcroft division are fulfilling the most favourable expectations of the parties interested in them. A large outlay has been expended in development work that has been amply justified by the results.

The coal mining companies in the Nicola division are energetically prosecuting the development of their respective properties for a larger output, for which there will be an unlimited demand for the various purposes for which it is used. The recent discovery of a seam 7 to 8 ft. thick on the Hamilton Hill, adjacent to Nicola, has produced much excitement, and a company has been formed, provided with the necessary capital to develop the property, and work will be shortly begun with a suitable force of men.

In the Similkameen mining is still handicapped by the lack of railway transportation, which is indispensable for the development of its resources. It is expected that the V. V. & E. railway will reach Princeton next fall, and stimulate activity in the mining locations of the district.

A seam of coal from 8 to 9 ft. thick, was discovered last year in the left bank of Granite Creek, about four miles from the old town. The coke obtained from this seam is pronounced to be of good quality. On the right bank of the Tulameen River, a short distance from the Tulameen townsite, there has been lately uncovered a deposit of coal, more than 7 ft. in thickness. The foreman in charge of the work has received orders to employ 16 men and proceed to drive a tunnel.

KAMLOOPS MINING DIVISION.

Development work has been prosecuted on the undermentioned claims during the past year:—

Orphan Boy.—The Orphan Boy group embraces four full-sized claims, viz: Orphan Boy, Last Chance, Black Hawk and Copper Cliff. Most of the work has been performed on the Orphan Boy, consisting of a shaft 40 ft. deep and a cross-cut at the bottom exposing a body of ore situated between well-defined walls, assaying well in copper, gold and silver. This ledge has been traced on the surface by open-cuts for a distance of about 2,000 ft. The trend of the vein is north-east and south-west. There is a considerable quantity of 5 per cent. ore on the dump.

Lorne.—The Lorne group is in the Jocko Lake section of Coal Hill, about six miles south of Kamloops. A large extent of surface work has been done on the vein. A shaft has been sunk to the 50-ft. level, showing up a quantity of copper ore. The ledge is heavily iron-capped, and the work has demonstrated that the iron has been substituted by the copper ore. There are about 100 tons of high-grade ore on the dump, including solid sulphides of copper. The ore-body, 100 ft. in width, is clearly exposed on the surface a distance of 1,500 ft.

Wheal Tamar.—The Wheal Tamar group, also in the Jocko Lake district, has been worked the past season by a small force of men under the charge of O. S. Batchelor, who is one of the owners. A well-timbered shaft has been sunk in the old glory-hole. At the bottom a cross-cut exposed 50 ft. of ore that would prove profitable with suitable reduction works. A drainage tunnel was lately started that will intersect the vein at a depth of 160 ft. from the surface. A drift run 40 ft. each way from the bottom of an old shaft, 120 ft. north of present works, also exhibited a large extent of good ore. These works will be connected with the new tunnel, when a large quantity of ore will be mined.

COTTON BELT MINES.

The Cotton Belt mines are located on Grace Mountain at an altitude of 6,350 ft. above sea level, about 10 miles north-east of Seymour Landing and 40 miles by water from Sicamous. Three distinct veins, running parallel to each other, are found in the mineral belt which is being prospected. The first one discovered is a galena ledge from 4 to 20 ft. wide, yielding assays as high as $70 per ton, principally in silver. The second vein was discovered by a Mr. Sinclair. The vein matter contains gold-copper ore, which has returned assays of 5 per cent copper and $12 in gold to the ton. A shaft 20 ft. deep has been sunk and the ledge ascertained to be 50 ft. wide. The third vein lies about 2,000 ft. to the east of the one previously mentioned, and is 10 ft. wide, 3 ft. of which carries galena, grey copper and chalcopyrite. Being a late discovery, it has not been tested as to value. The mineral deposits exist in a schist formation, and can generally be classed of a shipping character. A suitable road is very much needed for the transportation of supplies, and a bridge across Seymour River is considered indispensable, as the river cannot be forded except at a favourable stage of water. It is reported extensive water-power is available for utilization.

Cotton Belt Group.—About 100 ft. of stripping has been done on the Victoria and Harrison claims, showing up a ledge 7 ft. 6 in. in width. On the Cotton Belt two men have been engaged surveying a tunnel, of which 55 ft. have been completed, with 6 ft. of ore in the face, which improved in extent and value as the work progressed. A number of excavations have been made on these properties, which, whilst affording evidence of the extent of ore bodies, has not proved conducive to development. It is the intention to concentrate the work hereafter in one locality and determine more fully the favourable character of existing conditions.

NOTE BY PROVINCIAL MINERALOGIST.

A certain amount of prospecting has been done to the north of the Seymour Arm of Shuswap Lake, with indications of success. The following description of two groups of claims on headwaters of Seymour River and adjacent to old Big Bend trail, together with a sketch map, have been kindly con-

tributed by William Thomlinson, of New Denver, B. C., who visited the district last fall:—

"From Sicamous, on C. P. R. main line, to head of Seymour Arm of Shuswap Lake, 36 miles by water. Small steamboats running from Kamloops and Sicamous to mouth of Celesta Creek, five miles from Seymour. Row-boats can be hired at Sicamous.

"McConnell and Bass, trappers, live in a cabin at Seymour Landing. Address Albert Bass, P. O., Sicamous, B. C., if a good guide required; or address Hugh Sinclair, Ducks, B. C.

"Note sketch regarding positions of cabins, lean-to shed, etc., available along route.

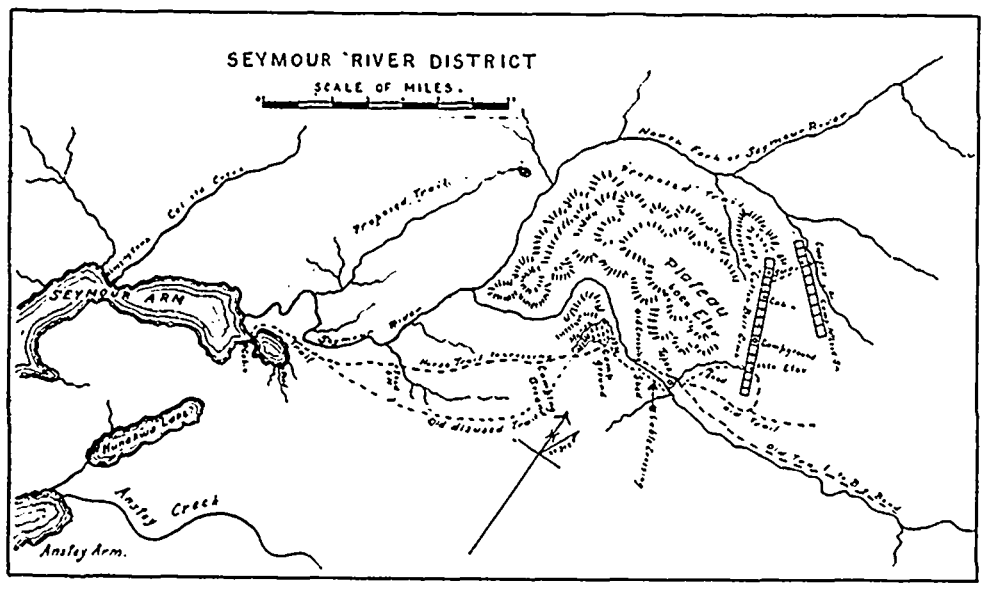
"From McConnell's cabin, at Seymour, to the old crossing of the Big Bend trail, about 13 miles up the Seymour River, the trail is in fair condition for pack animals, but from this point onward the trails are bad and obstructed by fallen timber and rocks. The trail from Tepee up Cotton Creek is not completed to the open plateau; therefore, if horses are taken, use the old trail, reaching the plateau in a north-easterly direction (see sketch). Horses will have to swim or wade the Seymour River somewhere near the old crossing of the Big Bend trail.

"Parties from Vernon interested in the Cotton Belt group of claims have erected a cable and cage crossing about a mile higher up the river. Some distance above the cable crossing there is a log jam, where persons can cross the river near mouth of Cotton Creek. There is a small lean-to shed near the log jam, north side, but the 'tepee' shown on the sketch is about one-half mile up Cotton Creek.

"If horses can be got across the river and the plateau reached by the old trail, saddle animals can be used to the west end of the Cotton Belt group, but not beyond, as there is practically no trail to the Copper King or Camp McLeod groups, which are situate along a very steep and broken slope.

"The Cotton Belt group consists of about 16 claims, located along an almost continuous vein outcrop, about 80 ft. from and parallel to a large 'dyke' of crystalline limestone or coarse marble. The vein is on the northeast side, footwall side, of the lime dyke, in a schistose eruptive rock, and dips, same as the dyke, to the southwest. Minerals noted on or near outcrop of vein, surface workings and dumps: galena, zinc blende, iron pyrites, oxides of iron, garnet rock vein quartz, etc. Values said to be low; ore much mixed.

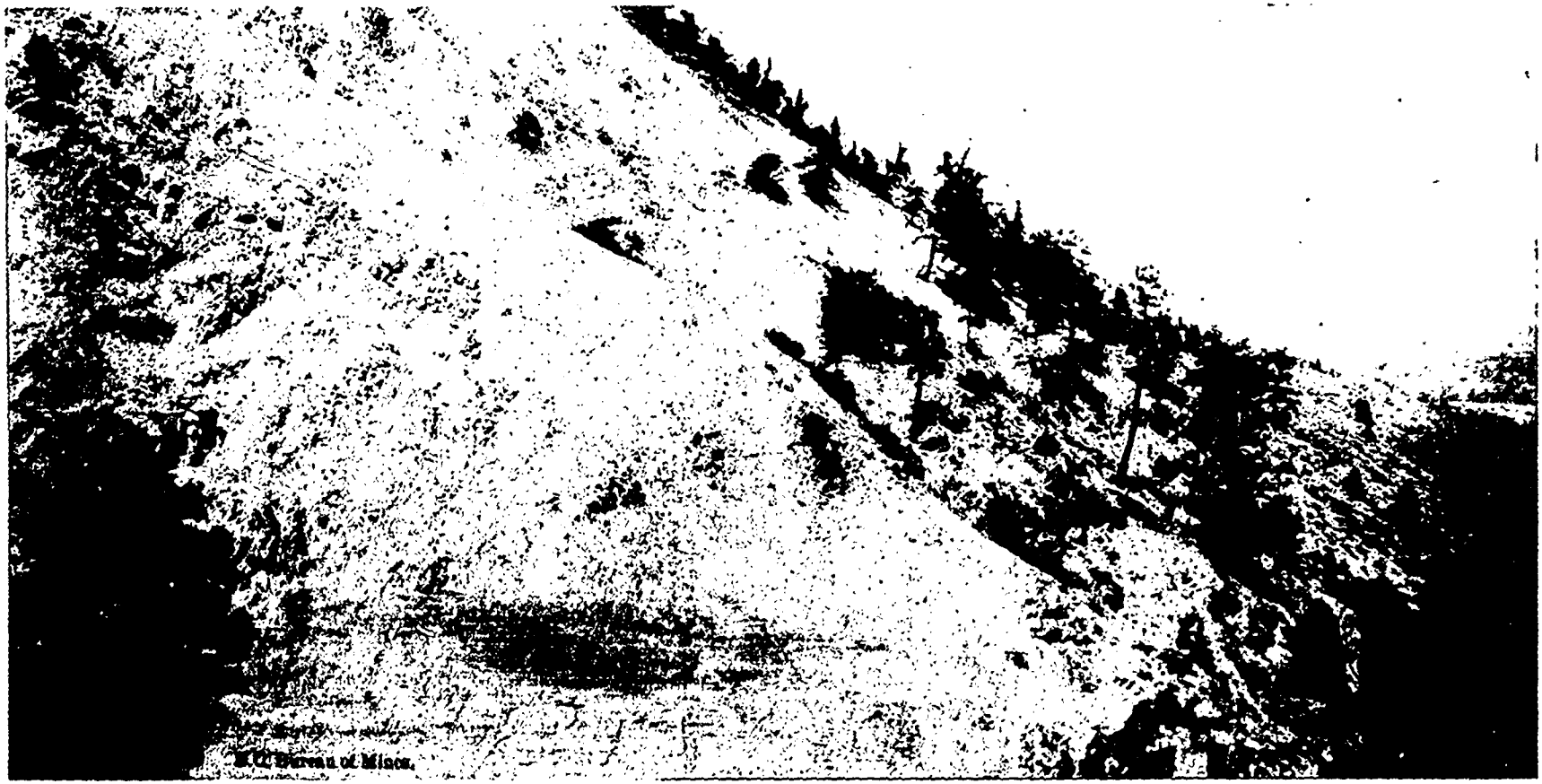
"Some distance from and on the upper side of the lime dyke above referred to there is a belt of what appears to be a hard lime agglomerate of a brown colour; this and the parallel lime dyke were the only rocks, not distinctly of eruptive origin, seen for miles; therefore, it is an interesting geological pro-



blem to solve their true nature and occurrence where found enclosed for miles in igneous or eruptive rocks.

"The Copper King group of claims is located along the outcrop of vein of the shear zone fissure type, both walls being alike gneissic and schistose igneous rock, probably an altered hornblende granite. The vein filling, where exposed on the Copper King claim, is quartz showing copper-bearing minerals, mainly chalcopyrite. Samples taken by myself gave from 2.2 to 21.8 per cent of copper, and the pay-streak, 2 to 6 ft. wide where now exposed, will average, I think, 5 per cent copper and 50 cents gold per ton (2,000 lb.) of ore.

"The claims of the Camp McLeod group are located on a vein parallel to the vein showing on the Copper King group, but do not show any copper-bearing minerals to speak of. This vein on the Camp McLeod claim has an outcrop more than 8 ft. wide, and the minerals noted were galena, zinc blende, magnetite, sulphide of iron, quartz, calcite, etc., intimately mixed together. No mineral of value found yet, but values may improve with depth, or the ore



Gypsum Deposit Near Spatsum, Ashcroft Mining Division.

Four mineral claims, covering a deposit of gypsum, are situated on the north side of Thompson River, opposite the Canadian Pacific Railway station at Spatsum, a few miles west of Ashcroft. The deposit is stated to have a length of at least 2,000 ft. It is described as appearing to be a bed, about 40 ft. in thickness, of fairly pure gypsum. It is favourably situated for working, but though its existence has been known for ten years, very little work has yet been done towards opening it up and utilizing the large tonnage of gypsum that is available.

may become more defined and less mixed below the outcrop.

"The natural route to the Copper King and Camp McLeod groups of claims is *via* the north fork of Seymour River, as shown on the accompanying sketch map, and I think that the Cotton Belt group is also more accessible by the same route, as the grade cannot be more than about four per cent from Seymour Landing and does not cross any high divides or plateaus.

"I cannot at present say that any of the mineral properties referred to will make mines, but I do deem some of them worthy of substantial development, especially the Copper King group; therefore think that a good trail ought to be constructed up the north fork of Seymour River, as such a trail would enable the owners of the said mineral claims to develop or bond their properties, and beside open up a section of country rich in timber and agricultural lands."

ASHCROFT MINING DIVISION.

H. P. Christie, mining recorder, reports very briefly of the Ashcroft mining division. He says:

The situation generally remains unchanged since last year, the office statistics being practically the same as 1906. The owners of claims continue to have complete confidence and do the necessary amount of assessment work to keep them existing, but there has been no actual mining to speak of.

The provincial mineralogist reports as follows:—

Maggie.—The Maggie mineral claim is situated on the west side of the main Cariboo wagon road, about 14 miles from Ashcroft, and is owned by Hocking, Smith and Bryson. During the summer of 1907 the property was held under bond by Rombauer and Adams, who did considerable development work underground, employing 10 men for the greater part of the season. The formation is a light-coloured magnesium rock in which the lead being developed is a crushed zone following a fault plane, having a general east and west strike and a dip of about 70 deg. to the south. The mineralization consists of copper pyrites in lenses of quartz occurring at irregular intervals in the crushed zone.

During the course of development the lessees shipped some 45 to 50 tons of higher-grade selected ore to the Ladysmith smelter, which yielded about 8 per cent copper and 2 oz. of silver to the ton, with no return for gold. The freight from the mine to Ashcroft was $3 a ton, while a freight (from Ashcroft) and treatment rate of $5 a ton was charged by the smelter. These charges rendered it necessary to ship only the higher-grade ores, so that from the shipping ore there had been sorted out from 100 to 125 tons of second class ore, which was estimated to run about half the value of the first class; this second class ore will not stand the treatment charges necessary at present.

The underground workings consist of a shaft, started on the top of a small knoll about 100 ft. higher than the wagon road and than the Bonaparte River, and sunk about 265 ft. At the level of the wagon road an adit tunnel has been driven for about 600 ft., from which, at 150 ft. in, a cross-cut 35 ft. long has been driven to the north to meet the shaft, while farther in, another cross-cut has been made to the north for 60 ft., meeting the lead at that distance. At a depth of 185 ft. in the shaft, or 85 ft. below the adit level, is the No. 2 level, connected with the shaft by a cross-cut, and with the No. 1, or adit level, by a winze. On this level a drift has been run to the east for 75 ft., with cross-cuts at the end amounting to 55 ft.; and to the west a drift has been extended for about 120 ft., and a stope, 70 ft. long, had been raised some 30 ft. above the level, from which ore was being taken.

No. 3 level is at a depth of 165 ft. below the No. 1 or adit level, and is also connected with the shaft by a cross-cut tunnel. On this level some 175 ft. of drifting and cross-cutting is said to have been done by previous lessees, but as it was insufficiently timbered, the workings had caved and were, in July, 1907, being cleared out and re-timbered, about 100 ft. of the level having been so recovered.

GYPSUM AT SPATSUM.

On the hills forming the north bank of the Thompson River, some few miles west of Ashcroft and opposite the railway station of Spatsum, four mineral claims have been staked by Sinclair and Spencer, covering a deposit of gypsum. These claims, located as the Hart, Flora, Marie and Belle, were surveyed during the spring of 1907 and are in the Railway Belt. The claims are located about one-third of a mile from the Thompson River, and are about 600 ft. higher than the river bed. Very little work has as yet been done on the properties, and as much disintegration of the soft rock formation has taken place, it was impossible to determine, with any degree of accuracy, the extent of the deposit; but, so far as could be determined, there is a bed of fairly pure gypsum about 40 ft. thick, having an apparent strike of N. 30 deg. E. and a dip of 30 deg. to the N. W. The under and overlying beds are shale, so disintegrated on the surface that their juncture with the gypsum beds is very indistinct. It appears that some 10 years ago the property was staked by a prospector named Munroe, who drove a tunnel into the deposit about 25 ft., at the end of which a small winze was sunk. These workings, although small, are in very solid and pure gypsum, and from here samples were taken for analysis, upon which the provincial assayer reports as follows:—Gypsum ($CaSO_4+2Aq$)=99.8 per cent; silica=trace; alumina=trace; iron=none; magnesia=trace.

The deposit may be said to have a length of at least 2,000 ft., with, as already stated, a thickness of over 40 ft. The layers comprising the bed are of varying hardness and purity, but there appears to be no doubt that the deposit is capable of providing a large tonnage of very pure mineral. The property is so situated that the mineral could be delivered by aerial tramway directly to the Canadian Pacific Rail-

way tracks at Spatsum, on the opposite side of the river.

HIGHLAND VALLEY.

Highland Valley is the name, locally given, to a section of country which lies about 27 miles to the south-east of Ashcroft, on the wagon road from that place to Nicola Valley. The so-called valley is in reality the height of land between Pukaist Creek flowing west into Thompson River, Three-Mile Creek flowing north into Kamloops Lake, and Guichon Creek, which flows south into the Nicola River. The camp here formed is, consequently, partly in the Ashcroft and partly in the Kamloops mining division, but as the camp is more easily reached from Ashcroft, and most of the parties interested reside there, it has become associated with that division.

Transvaal.—The best known group in Highland Valley camp is the Transvaal group, since that property, while under bond to the Trail smelter, was quite extensively developed. The group consists of six claims, the Transvaal, Imperial, Chamberlain, Ladysmith, Pretoria and Mafeking mineral claims, and is owned by William Knight, J. Hoskings and George Novak. The shaft, in July, 1907, was found to be filled with water to within 25 ft. of the collar, so that none of the underground workings could be inspected, but they are evidently extensive, to judge from the size of the dump. The shaft has two compartments, and is reported to have been sunk 200 ft., with, at the 100-ft. level, a drift to the west of 160 ft. in length, and another to the east, of 180 ft., and from the latter a 40-ft. cross-cut was driven. At the 200-ft. level a drift was made to the east for about 75 ft. The shaft is surmounted by a shaft-house, in which a hoisting engine had been installed, but has since been removed. A few feet to the north-east from the shaft are some large open pits, in which was to be seen a certain amount of blue carbonate of copper, occurring as irregular patches in a black amygdaloidal trap dyke. The mineral, as shown in these cuts is not present in sufficient quantity to constitute an ore, although appearing greater than it really is, owing to the contrast of the blue carbonate against the black enclosing rock. The underground workings mentioned had been undertaken to prove this surface-showing at a depth, and, judging from the character of the dump and the fact that no ore had been shipped, no orebody of importance was encountered in the workings.

Some 1,500 ft. from the shaft to the north-east there is a tunnel about 200 ft. long, evidently driven to prove up a surface-showing of copper in a similar trap-rock, but, as far as could be seen, no sufficient amount of ore was met with in the tunnel.

The Ajax mineral claim adjoins the Transvaal on the east and is owned by Knight & Hosking. There is a showing of similar black trap-rock showing sulphides of copper. Two tunnels, 20 and 25 ft., respectively, have been started to develop the property at a depth, but have not, as yet, been driven into the solid formation.

Highland.—The Highland group, consisting of seven claims, viz.: the Highlander, Standard, Glenora, Glenora Fraction, Nickel Plate and Virginia mineral claims, is owned by George Novak and J. S. C. Fraser, of Rossland. This group adjoins the Transvaal group on the south and at a slightly lower elevation. Near the centre of the group there is a tunnel which has been driven 115 ft., from which two cross-cuts have been driven to the left a distance of 15 ft. At this point the showing consists of a black trap-rock, similar to that noted in the Transvaal, with small quantities of copper pyrites scattered through it. Some distance away a timbered shaft was found which had been sunk about 25 ft. deep, but it was filled with water, so could not be examined. There was no particular showing visible on the surface, but, to judge from the dump, mineral had been encountered in the shaft, as a considerable quantity of black trap-rock, appreciably impregnated with copper pyrites, had been taken out. A sample, taken from the dump, of what might be considered the ore, gave, upon assay, copper, four per cent.

Keystone.—The Keystone group lies to the east of the Transvaal, on Forge Mountain, at the headwaters of Guichon Creek, the workings thereon being about a mile from those of the Transvaal. The group consists of six claims—the Keystone fraction, Douglas Pine, Snowden, St. Boniface, Waverley and Mafeking fraction—and is owned by George Novak, Al. Johnson, J. S. C. Fraser and John Cowans. Very little work has been done on these claims, only a small tunnel having been driven 15 ft., chiefly through slide rock, but reaching the solid formation. No amount of ore was visible in the rock-in-place in the tunnel, but in the slide rock, removed in making the tunnel, a considerable amount of fine copper carbonate—azurite—had been found.

The country rock is here overlain by heavy beds of basalt, lava and tuff, which seem to cap the higher hills, and, along the line of juncture of these and the underlying rocks, the copper carbonates are found. As yet, no particular amount of ore has been uncovered, but the amount of copper visible in the slide rock gives encouragement for further prospecting.

Albatross.—The Albatross group of three claims lies some distance to the south-east of the Transvaal, at an elevation of 5,500 ft., and is owned by Hosking, Knight, *et al.* No one was present on the property when visited and the various showings had to be found by following foot-trails from the camping ground, a method anything but satisfactory. The No. 1 stake of the Albatross was found, the country rock in the vicinity being a dark basalt, but no showing of mineral was seen. The Albatross tunnel was found to be barricaded and locked, and judging from the size of the dump, would be about 30 ft. long, in a volcanic breccia, with fragments of granite, carrying some copper pyrites and specular iron.

Tamarack.—The Tamarack group, consisting of the Tamarack, Shamrock, King, Duke, Billy, Muir Fraction, May L. and Star mineral claims, is situated

at an altitude of 5,200 ft., about one and a half miles to the north-west of the wagon road at Fish Lakes, and is owned by Dr. Sanson and others, of Ashcroft, who have built a branch road up to the property and erected a good cabin. The development consists of three or four shafts, each sunk about 25 ft. deep, and a number of open cuts. These workings show that there are on the property a considerable number of parallel quartz veins, having a general north-east strike, most of which carry more or less copper pyrites or bornite. These quartz veins vary considerably in width, but the work done does not prove their continuity. The vein at the No. 2 shaft is 4 ft. to 4 ft. 6 in. wide at the shaft, but no drifts or other workings have been made along its strike. The mineral occurs in bunches of varying size in the quartz vein matter, and the selected ore assayed high in copper.

Storm.—The Storm group, consisting of the Rainstorm, Snowstorm, Hailstorm, and other mineral claims, is situated at an elevation of 5,100 ft. on the top of the ridge, and about a mile to the south of the Ashcroft-Nicola wagon road, opposite the 29-mile post from Ashcroft. The properties are owned by Stuart Henderson and Gilbert Couverette, of Ashcroft. In July, 1907, development had not progressed very far; such work as had been done was for the purpose of prospecting the properties generally. The country formation is a dark, porphyritic, volcanic rock, through which are darker hornblendic seams, usually iron-stained on the surface; along the line of these seams a movement seems to have taken place and much gouge matter formed, a soft kaolin material, in which is found a considerable percentage of copper sulphides and carbonates.

No. 1 cut is about 50 ft. long and 8 ft. deep at the face, and has been run alongside one of these seams. A gouge material some 9 in. thick, exposed for a portion of the length of the cut, was sampled and gave, copper, 21 per cent.; silver, 5.4 oz. to the ton, and a trace of gold.

About 200 ft. from No. 1 cut is another cut, 45 ft. long and 6 ft. deep at the face, which cross-cuts a similar seam 6 in. wide, which was also sampled and gave practically a similar assay.

There are a number of other openings and exposures showing copper ore, existing under similar conditions, which give encouragement for further prospecting and development.

Ball.—The Ball group adjoins the Storm group and is held by the same owners. The group consists of the Handball, Football, Baseball, Cricketball, Smallball, etc., mineral claims, and is as yet in the prospect stage of development. On the Handball a shaft had been sunk 6 ft., showing a seam of about 15 in., which assayed in copper. An open-cut 20 ft. long was seen, but it had not cut solid formation. No. 1 shaft, which was sunk in 1905, was down 12 ft. and exposed two seams, each 12 in. thick, separated by a portion of barren and very much broken and decomposed ledge matter. These seams assayed 5 per cent. copper, with only traces of gold and silver. About 250 ft. south from No. 1 shaft is the remains of an old shaft, said to have been sunk in 1897, to a depth of 80 ft.; nothing could be seen of the shaft, but the dump contained numerous samples of copper pyrites. This old shaft is on the Football, which claim was formerly staked and worked under the name of the Last Chance mineral claim, and no new work has been done since the last staking.

On the Baseball, three open-cuts were seen near the trail, which showed seams, running north and south, carrying specular iron. The Cricketball adjoins the Baseball on the south and on it a number of small open-cuts have been made, which did not develop any mineral of importance.

On the Smallball an open-cut, 7 ft. long and 5 ft. deep at the face, showed copper-stained gouge matter along a seam.

YALE MINING DIVISION.

William Dodd, mining recorder, reports: The Yale Dredging Company operated in the bed of the Fraser River at Hill's bar and Sawmill riffle in April, September and October, the returns for the half-year ending October having been $2,000.

The Mt. Baker and Yale Mining Company has been operating a 10-stamp mill on Siwash Creek for the past month.

Other claims on the same creek—the owners continue to perform their annual assessment work.

In the vicinity of Coquihalla, Hope, Skagit, and Ladner Creeks numerous locations have been made during the past season, on which owners have done sufficient work to hold their claims.

SIMILKAMEEN MINING DIVISION.

Hugh Hunter, mining recorder, reports: On Granite Creek three placer mining leases are being developed by Lambert & Stewart, who did considerable work blasting boulders on the surface of their claims, to enable them to ground-sluice in the spring. They also have all the material on the ground to start operations as soon as high water is over.

On the Tulameen River, between Slate and Eagle Creeks, seven placer mining leases have been taken up, but too late in the season to do any prospecting.

There has not been much development done on mineral claims, the owners merely doing sufficient work to hold them.

On the divide between Slate and Champion Creeks, a number of claims have been bonded to the Colorado Assaying and Refining Company, which is prospecting the ground for platinum. As the start was made too late in the season, and owing to the usually heavy snowfall in this section, operations were postponed till late in the spring. The results of the work have so far not been made public.

On Bear Creek the Similkameen Mining and Smelting Company is developing its property and is driving a tunnel to cross-cut the lead.

On the Independence group, consisting of seven claims and bonded to the Granby Company in 1906, continuous work has been carried on, prospecting the ground.

On Copper Mountain the Reco group, consisting of four claims, has been bonded to Spokane capitalists. On the Reco a tunnel is being driven to tap the ledge, which shows on the surface high-grade gold and copper values. First payment has been made on this bond.

GOLDEN MINING DIVISION.

GOLDEN MINING DIVISION is in Northeast Kootenay District. The Golden *Star* has published the statistics of the division for 1907. These are reprinted below. For purposes of comparison the following figures are quoted from the official returns for 1906: Free miners' certificates, 101; mineral claims recorded, 44; certificates of work, 26; conveyances, 7; Crown-granted mineral claims, 92; revenue, $2,424.89.

Of 1907 the *Star* says: The mining statistics for the Golden mining division for 1907 show a marked improvement over those of the year 1906. The figures may be taken as an indication that the mining industry in this section is gradually attracting the interest of capital. While the development, in recent years, has been slow, it is a steady and healthy growth, and the outlook for the future is good.

It is expected that Golden's importance as a mining centre will hereafter increase. The opening of the Giant mine to the south and activity being displayed at the Monarch to the east, together with the frequent location of promising mineral claims is leading all interested to take a bright view of the prospects of the district.

Appended are the figures for 1907:

Free miners' certificates	109
Companies' certificates	3
Records of—	
Mineral claims	95
Placer claims	1
Mining leases	6
Certificates of work	73
Notices to group	6
Powers of attorney	3
Conveyances and other documents	19
Certificate of improvement	1
Crown grants of mineral claims	98

The total revenue from mining sources for the year 1907 was $3,007.35.

The London *Mining Journal* has stated to its readers that Lord Strathcona, High Commissioner for Canada, has been informed by cablegram from the Minister of the Interior at Ottawa that the total value of products of mines in Ontario during 1907 was $24,343,000, an increase of nearly $2,000,000 over the production of 1907. The output of silver was almost doubled.

CANADA DEPARTMENT OF MINES.

Report of the Mines Branch for 1907-8.

THE SUMMARY REPORT of the Mines Branch of the Canada Department of Mines for the fiscal year ended March 31, 1908, has been published and distributed. The following extracts give the parts of the report which to an important extent deal with British Columbia and adjacent parts of western Canada:

IRON ORE INVESTIGATIONS.

Under the heading, "Field Work," occurs the following information concerning iron ore investigations in British Columbia:

The high prices of pig iron and other merchantable irons in British Columbia, due to the long hauls necessary to convey these materials from the centres of production rendered it desirable in the interest of the Province to furnish such information regarding the iron ore deposits, coking-coal deposits, and fluxes on the Pacific Coast—both as to extent and quality—as will encourage the investment of capital for the exploitation of these resources.

Hitherto, no serious investigations as to the probable tonnage or average quality of the ore, in any of the local deposits, had been made; but judging from the reports of the Provincial Government, some of the properties on the coast of Vancouver Island and other islands in the vicinity, seemed worthy of special attention.

Mr. Einar Lindeman—member of the staff of the mines branch—was therefore instructed to proceed to British Columbia, and make an investigation of such ore deposits on Vancouver Island as are favourably situated in regard to communication; and then to make a more detailed examination of two or more of the most promising of them commercially. In the event of these deposits proving to be magnetite, and the terrane found to be suitable, Mr. Lindeman was instructed to make a magnetometric survey of the same. If this and further investigations, furnish evidence of the existence on the coast of extensive iron ore deposits, in comparatively close proximity to an assured supply of fluxes, and of coal suitable for the manufacture of metallurgical coke, all capable of economic transportation to industrial centres, then, invaluable information will have been furnished to prospective investors who are interested in the establishing of an iron industry in British Columbia.

Mr. Lindeman's report shows that as regards the ore supply, the deposits on Texada Island, at Head Bay, Klaanch (Nimpkish) River, and Quinsam River on Vancouver Island, are of sufficient magnitude to furnish ore to a blast furnace for a number of years. The coal output of the collieries on Vancouver Island for 1907, is estimated at 1,325,000 tons with coke production of about 17,000 tons. The coke contains from 15 to 16 per cent. of ash; but by a

more careful separation of the shale the ash could be reduced to about 12 per cent. The limestone deposits are of great extent, and unusual purity, hence they provide an inexhaustible supply of excellent fluxing material.

The deposits of iron ore, coal, and limestone, being adjacent to the coast, are favourably situated for transportation; and since navigation is open all the year round, shipment can be made direct to a furnace located anywhere on the coast line. As regards material and transportation, therefore, the conditions for the establishment of an iron industry on the Pacific Coast are favourable. The only drawback is that labour charges are higher in British Columbia than in the other provinces of the Dominion. Hence seeing that the market in British Columbia for manufactured iron will for years be a limited quantity, and the United States import duty of $4 per ton on pig iron will render exportation to that country doubtful, it may be necessary to find a market for the surplus product elsewhere.

PRELIMINARY REPORT BY EINAR LINDEMAN.

In his preliminary report on the iron ores of Vancouver Island and neighbouring islands, Mr. Lindeman says:

"In accordance with your instructions to make an investigation of the iron ore deposits on the coast of British Columbia, with a view to furnishing information for an eventual iron industry, I left Ottawa on June 2nd, 1907, for Victoria, B. C., to get information regarding localities of reported iron ore occurrences. I desire to express my appreciation of the unfailing courtesy of Mr. W. F. Robertson, provincial mineralogist, and all others who have given aid and information in connection with my work.

"In attempting to give a description of the iron ore occurrences of the coast, one is immediately confronted with the fact that, with very few exceptions, the locations have not received any more development than the mining law of the Province compels the holder to do. The development work done is, therefore, limited to surface strippings, shallow opencuts and tunnels. This is quite natural; for as long as the property owners had no positive assurance of a market for their iron ore, they could not, or would not, invest more capital in developing their claims than was necessary to meet the requirements of the mining laws. Since this development these claims were Crown granted, and since been allowed to remain untouched. As a result, trails have become overgrown by brush; making it in some places difficult even for a person well acquainted with the locality to find the locations.

"The districts visited were: Sooke, Gordon River, Sarita, Copper (Tzartoos) Island, several claims on Alberni Canal, Anderson Lake, Seehart, Maggie Lake, Kennedy Lake, Head Bay (Nootka Sound), West Arm (Quatsino Sound), June Group, Ingersoll River, Kla-anch River, Quinsam River, Salt Spring Island, and the Iron Mines (Texada Island).

"In this report, only those properties which are more likely in the near future to be commercially important will be dealt with; leaving the others visited, for the final report. Some of these latter may possibly, by further development, prove to be of some commercial value, while others have absolutely no features to indicate that they will be iron ore producers.

"GENERAL NATURE OF ORE DEPOSITS.

"With the exception of the bog ore deposits at Quatsino Sound, and a small deposit of hematite on Salt Spring Island, which in places seems to change into magnetite, all the properties visited show magnetite. There is, moreover, a remarkable similarity among these different deposits of magnetite, so far as geological conditions are concerned. They all are in the immediate vicinity of crystalline limestone, if not in contact with it, and occur where it is in close proximity to igneous rocks.

"The examination of the main geological features of Vancouver Island was made in 1885 by the late Dr. G. M. Dawson, and I beg to refer you to the report of the Geological Survey of Canada for 1886 for the geological description.

"The magnetites of the coast are high in iron, and few, if any, have a phosphorus content exceeding 0.05 per cent. in most cases considerably below this figure. On the other hand, they are, as a rule, high in sulphur, though not to such an extent as to render them unfit for smelting.

"GORDON RIVER DISTRICT.

"The Gordon River flows from the north into Port Renfrew, or Port San Juan, as it is locally known, which is about 60 miles from Victoria on the west coast of Vancouver Island. Up this river and its principal tributaries, the country rocks are chiefly crystalline limestone and igneous rocks, of which granites and diorites are most in evidence. A considerable number of mineral locations covering showings of magnetite have been made here, but many of them will not prove of sufficient body to warrant mining, and seem to have been staked more for the purpose of keeping other parties out of the field than for their ore contents. On the other hand, some promising prospects were noticed, on two of which more development had been done than is usually the case on Vancouver Island.

"The Baden-Powell and Little Bobs mineral claims are situated up the Gordon valley about seven miles from salt water. An outcrop of magnetite is found on the flank of a ridge, along which it can be traced for 350 ft. In several places on the ridge a sharp contact between the ore and the granite was observed. About 90 ft. below this contact a tunnel 114 ft. long had been run directly into the hill, showing magnetite for its full length, with the exception of a diorite dyke 8 ft. wide about 30 ft. from the mouth of the tunnel.

"An average sample of the ore taken along the tunnel gave the following analysis: Silica, 8.88 per

cent.; iron, 58.30 per cent.; sulphur, 2.75 per cent.; phosphorus, 0.013 per cent.

"About 35 or 40 ft. below this tunnel another tunnel had been run in the same direction for 114 ft. into the hill, going through limestone and diorite. The last few feet, however, show magnetite dipping in towards the hill.

"The Sirdar mineral claim is situated two miles farther up the valley, and is very similar to the Baden-Powell and Little Bobs. The magnetite outcrops along the face and brow of a ridge for about 160 ft. About 50 ft. below the top ridge a tunnel had been run 103 ft. into the hill, showing the width of the ore to be about 82 ft. An average sample taken along the tunnel gave the following analysis: Silica, 8.52 per cent.; iron, 56.57 per cent.; sulphur, 2.75 per cent.; phosphorus, 0.121 per cent.

"The Conqueror mineral claim is situated a little further up the valley, on Bugaboo Creek, which flows into the Gordon River. The claim is some nine miles from the navigable water of Port San Juan. A solid body of magnetite about 40 ft. high is exposed in the canyon of the creek, and over which the creek forms a water fall. The ore has a maximum width of about 63 feet on the east side of the creek, but becomes narrower on the west side. On the east side, the ore body is stripped for about 80 ft. from the creek to where it runs into the gravel bank. At the foot of the bluff a tunnel 14 ft. long had been run into the ore, showing solid magnetite. A sample taken along the tunnel gave the following analysis: Silica, 4.51 per cent.; iron, 67.09 per cent.; sulphur, 1.60 per cent.; phosphorus, 0.009 per cent.

"On the up stream side the orebody is confined by a diorite dyke 6 ft. wide, crossing the creek nearly at right angles. Beyond this dyke outcrops of magnetite were noticed on both banks of the creek for a distance of about 60 ft., and on the east side for 15 ft. farther. Here, in several places, the ore seems to lie as a blanket on top of a green igneous rock. About 200 ft. east of the creek some outcrops of magnetite were reported to have been struck by strippings, but the workings had caved in at the time of my visit. Between these strippings and the creek a strong magnetic attraction was noticed in several places. From the existing development it was, however, impossible by a superficial examination to get any exact information as to the extent of the orebody, or bodies, as the solid formation is effectually covered by a sandy loam. A magnetometric survey would undoubtedly give a large amount of information here.

"The same may be said about the David mineral claim, east of the Conqueror, and adjoining the Sirdar on the west side. Within a distance of 400 ft. along a slope, some strippings have exposed a good magnetite in several places, but do not give sufficient information to warrant an estimate of the extent of the ore.

"HEAD BAY.

"Head Bay forms the upper end of Tlupana Arm, Nootka Sound. On a ridge running northwest and southeast four outcrops of magnetite can be seen at intervals along a contact of crystalline limestone and diorite, about a mile from the deep water of the bay. These outcrops are from 170 to 200 ft. long, and from 40 to 55 ft. maximum width. A little farther south, several smaller outcrops were noted, showing that there is, undoubtedly, strong mineralization by iron here. Up to the present time no work has been done to disclose the extent of ore with the exception of one place where some stripping had been done, and an open-cut made into the ore, showing the width to be about 55 ft. The ore here is of an excellent character, a sample taken along the open-cut giving the following analysis: Silica, 6.10 per cent.; iron, 66.17 per cent.; sulphur, 0.017 per cent.; phosphorus, 0.016 per cent.

"WEST ARM, QUATSINO SOUND.

"The country north of the west arm of Quatsino Sound has, during the last few years, attracted much attention, owing to the discoveries at several points of limonite in the form of bog ore. Many of the claims staked do not show any indication which can warrant the supposition that the ore is in commercial quantities, but must be considered as another case of undue prominence being given to minute objects.

"I wish to mention a group of claims which give the best showings of bog ore, more on account of the character of ore than their importance as shown by surface indication. These claims are situated about one mile from navigable waters, five miles west of Coal Harbour. They lie in and on the border of swampy basins, and partly on the ranges of hills adjoining these. The ore has been exposed by some strippings and open-cuts, and a number of outcrops are also visible in the banks of some small creeks. The ore in these bogs owes its origin to the alteration of iron pyrites, with which the surrounding hills are heavily charged. Although bog ore deposits have been utilized under favourable conditions in certain parts of Canada and other countries; here, as the overlying soil is in many places quite deep, and the ore often mixed with peat, stumps, etc., which must—at least in part—be removed from the ore, economic exploitation is, in my opinion, somewhat doubtful. Whether the extent and thickness of ore would warrant the cost of mining, only a systematic drilling of the properties can determine.

"Average samples of the ore from two locations gave the following analysis: Insoluble matter, 2.32 per cent. and 1.40 per cent.; iron, 54.46 per cent. and 56.97 per cent.; sulphur, 0.150 per cent. and 0.447 per cent.; phosphorus, 0.038 per cent. and 0.038 per cent.

"KLA-ANCH RIVER.

"Nimpkish Lake, which is about 15 miles long and one mile wide, empties through Nimpkish River into Broughton Strait, at a point directly opposite Albert Bay. The Iron Crown mineral claim is situated about seven miles up the Kla-anch River, which flows northwest into the south end of Nimpkish Lake. An

exposure of magnetite extends along the face of the river bank for some 180 ft. The height of the bank is about 80 or 100 ft., forming at some points, cliffs of magnetite 25 to 30 ft. high. The top of the bank is covered with soil, and no work had been done to ascertain the width of the deposit; but to judge from the magnetometric survey made, the width at the south end may be estimated at not less than 100 ft., decreasing towards the north. A sample of the ore gave the following analysis: Insoluble matter, 4.12 per cent.; iron, 64.23 per cent.; sulphur, 0.233 per cent.; phosphorus, 0.008 per cent.

"Farther up the hill, about 650 ft. from the river, several showings of magnetite occur along the ridge, indicating the length of the deposit to be about 360 ft. The width may be estimated at 60 ft. An average sample of ore gave the following analysis: Insoluble matter, 5.30 per cent.; iron, 63.89 per cent.; sulphur, 0.017; phosphorus, 0.010 per cent.

"No more outcrops were visible, but the magnetic curves north of these two deposits show two others, one of which is about 480 ft. in length. A chart of vertical magnetic intensity showing the extent and location of these will accompany the full report.

"QUINSAM RIVER.

"The Quinsam River is a tributary to the Campbell River, which flows into the Strait of Georgia at a point about 35 miles north of Comox, and directly opposite the south end of Valdez Island. The mineral claims are situated up the Quinsam River, about 13 miles from the coast. Magnetite outcrops on the north bank of the river in a bluff about 80 ft. high. Part of the face of this bluff has been stripped for 53 ft. in width, showing solid magnetite, without having uncovered the contacts with the country rock. About 40 ft. above the river a tunnel has been driven into the hill, following the strike of the ore. The tunnel was 66 ft. long, entirely in magnetite.

"A sample of ore taken along the tunnel gave the following analysis: Insoluble matter, 7.00 per cent.; iron, 56.45 per cent.; sulphur, 0.530 per cent.; phosphorus, 0.014 per cent.; copper, 0.700 per cent.

"Another sample taken across the face of the bluff above the tunnel gave the following analysis: Insoluble matter, 11.00 per cent.; iron, 59.77; sulphur, 0.533 per cent.; phosphorus, 0.024 per cent.

"Following the crest of the ridge in a N. N. W. direction, some outcrops and surface strippings were noted, showing the ore to be continuous for a distance of about 350 ft. The ore is generally free from admixture with country rock, though containing some sulphides of copper and iron. On the south side of the river some small outcrops of magnetite may be seen along the slope, and strong, magnetic attraction observed in several places. The deposits being covered with soil, the extent of the ore could not be observed without a more detailed magnetometric study, of which the time did not permit. A few hundred feet farther up this valley a seam of coal outcrops on the north bank of the river.

"TEXADA ISLAND.

"The iron ore deposits which occur on the western slope of Texada Island, from three to four miles north of Gillies Bay, have been known for many years, and were taken up for iron mining as early as 1875. The principal ore deposits are on the Prescott, Paxton, and Lake properties.

"The Prescott has received the most development, and has during several years, shipped ore to Irondale, Wash. The magnetite outcrops about 850 ft. from the shore, in a big bluff on the brow of a steep, rocky hill, at the contact between granite and crystalline limestone. The deposit has been opened at three levels. At an elevation of 365 ft. an open-cut had been made into the hill, showing magnetite penetrated by granite dykes. Sulphides of copper and iron are also common here. The second level is situated 40 ft. above. A considerable amount of ore from an open cut, which shows, now, a face of magnetite 40 ft. wide and about 100 ft. high.

"The ore here includes small patches of calcite and fragments of volcanic rocks, forming in places a species of ore breccia. More or less sulphides of copper and iron are also present.

"A sample of the ore dump gave the following analysis: Insoluble matter, 6.46 per cent.; iron, 62.57 per cent.; sulphur, 0.403 per cent.; phosphorus, 0.024 per cent.

"The third level is situated 50 ft. above the second, at an elevation of 465 ft. above sea level. The face of the quarry is about 50 ft. high and 50 ft. wide, showing the same kind of ore as at the second level. The thickness of this ore body can be estimated at about 80 ft. A sample of the ore gave: Insoluble matter, 12.00 per cent.; iron, 58.76 per cent.; sulphur, 0.113 per cent.; phosphorus, 0.011 per cent.

"About 430 ft. below the top of the bluff, at about *130 ft. above the sea level, a tunnel had been run* into the hill under the quarry. The length of the tunnel is 630 ft., going through granite and felsite rocks, and showing solid magnetite for the last 75 ft. on the west side of the tunnel, and for 45 ft. on the east side. A sample of the ore taken along the tunnel gave the following analysis: Insoluble matter, 4.37 per cent.; iron, 63.27 per cent.; sulphur, 0.347 per cent.; phosphorus, 0.006 per cent.; copper, 0.09 per cent.

"From the Prescott mine the contact between the limestone and the eruptive rocks may be followed for about 1,200 ft. farther up the hill, and after making a sharp bend, down hill again for about 800 ft.; it then takes a more easterly direction, making some windings to the Paxton mine, and thence to the Lake mine. Strong magnetic attraction in some places, and numerous outcrops of magnetite were noted along this contact, some of them reaching a width of about 70 ft. As the rock formation is to a great extent covered by soil, the magnitude of these deposits could not be ascertained; but the character of these contact-deposits on the borders of the granite indicates

the importance of closely examining the contact of the eruptive rocks with limestone. On account of the lateness of the season, a magnetic survey could not be performed.

"The Paxton mine is situated about 3,500 ft. east of the Prescott mine. An outcrop of magnetite extends along the face of a ridge for some 500 ft. Two open-cuts had been run into the hill, passing through granite—which seems to form the hanging wall—and then into ore. From the face of the east cut a tunnel 45 ft. long shows solid magnetite, carrying some sulphides of copper and iron.

"A sample taken along the tunnel gave the following analysis: Silica, 4.47 per cent.; iron, 64.48 per cent.; sulphur, 1.87 per cent.; phosphorus, 0.002 per cent.; copper, 0.22 per cent.

"The Lake mine is situated about 1,300 ft. to the east of the Paxton. The ore can be traced along the face and brow of a ridge for some 200 ft. The height of the ore bluff is about 80 ft., with a maximum width on the surface of about 100 ft. Crystalline limestone forms the footwall, and a diorite overlies the ore in places. An open-cut had been made in the orebody, showing a good clean magnetite. About 1,000 tons of ore are reported to have been shipped last summer. An average sample of the ore gave the following analysis: Silica, 8.33 per cent.; iron, 59.57 per cent., sulphur, 0.137 per cent.; phosphorus, 0.024 per cent.; copper, 0.08 per cent.

"From what has been said, it may be understood that it is impossible from present developments to give actual figures as to the ore in sight, without doing injury to the owners of certain properties; but with fuller development the better properties should be capable of supplying a modern blast furnace for many years. A well-equipped and properly-managed plant, using these magnetites, thoroughly roasted, could produce a good quality of pig iron.

"FUEL.

'In regard to fuel, the east coast of Vancouver Island has a good supply of coal. The output from the collieries is estimated for the year at 1,325,000 tons of coal. During the year about 17,000 tons of coke were made. The provincial mineralogist of British Columbia reports the coke to contain from 15 per cent. to 16 per cent. ash; but thinks that, by a more careful separation of shale from the coal, the ash could be reduced to about 12 per cent. with very low phosphorus contents.

"FLUXES.

"The limestones frequently met with on the coast are exceptionally pure, and free from deleterious elements, and offer, therefore, a good flux. The supply may be said to be practically unlimited. An analysis made at the laboratory of the Department of Mines gave: Insoluble matter, 1.0 per cent.; iron oxide and alumina, 0.5 per cent.; calcium carbonate, 97.0 per cent.; magnesium carbonate, 0.7 per cent.

"TRANSPORTATION.

"Cheap transportation of the raw materials is one of the most important factors in a successful iron industry. The many inlets which indent the coast and the islands of British Columbia offer great advantage to transportation, as the iron ores, limestone, and coal deposits are situated in nearly all cases close to these navigable waters. Navigation being open the year round, offers still another advantage to the blast furnace man and the miner, saving them from large expenditure in stocking and rehandling the raw materials. It may, therefore, be said that the coast of British Columbia is singularly fortunate as regards cheap assembling of raw materials.

"LABOUR AND MARKET.

"So far the conditions have been found favourable for the establishing of an iron industry on the coast, but when the question of labour and market is considered, the matter is somewhat different. The cost of labour is higher in British Columbia than in the other provinces of the Dominion, and this Province may not, for some years to come, have a sufficient market to support an iron industry. A large market is certainly offered by the western United States, but is protected by a customs duty of $4 per ton on pig iron. It is questionable, therefore, whether it would be possible for a British Columbia smelter to compete in the American market—under present conditions—with other iron producers of the world.

"Not having had the opportunity, as yet, to gather sufficient information and figures in regard to this matter, I propose to take up the question at greater length in my full report."

MINING AND METALLURGICAL INDUSTRY OF WESTERN CANADA.

In connection with the first efforts of the Mines Branch to "collect and publish full statistics of the mineral production, and of the mining and metallurgical industries of Canada," in accordance with the requirements of one of the provisions of the "Geology and Mines Act," the report gives some particulars of the work in this direction done in Yukon Territory by Mr. D. D. Cairnes, and in British Columbia and Alberta by Mr. Robert R. Hedley, as under:

YUKON TERRITORY.

About two months were spent by Mr. D. D. Cairnes, during the latter part of last season, (1907) in Yukon Territory; gathering information as to the extent and condition of the mining and metallurgical industries therein.

In the Dawson District, Mr. Cairnes had to depend to a considerable extent on mine-managers, superintendents, etc., for the necessary information as to company organization, details of installation and equipment, number of men employed, costs of operation, etc.; but he says that in all cases, and in every possible way, assistance was readily given.

All the properties reported upon—except a few in outlying districts—were visited personally, hence the facts given were obtained by actual observation on the spot; supplemented by carefully sifted informa-

tion gathered from all available sources. The data collected indicates the conditions in the entire Yukon Territory, with the exception of the copper deposits at Whitehorse.

The following is a short account of the present state of the mineral industry in the districts reported upon:

Only two of the silver-gold properties in the Windy Arm District were being operated. One of these is likely to be a producer in the near future. It is expected that work on others will be resumed during the coming season. The quartz properties on Williams Creek, Livingstone Creek, and others in the vicinity of Dawson, although promising, are all, as yet, strictly in the prospect stage.

Large areas of lignite and bituminous coal, have been found in different parts of the Yukon; accessible either by boat or rail. Last season, only two mines were in operation, producing respectively about 9,000 and 8,000 tons.

By far the greater part of the placer gold of the Yukon comes from the Klondike District. A very small amount is derived from the Kluane District. The remainder is from Livingstone Creek—a tributary of the Big Solomon River—which, for several years has had an increasing production; the output last season amounting to $100,000 approximately. Other undeveloped creeks in the vicinity promise to be equally productive.

The gold output of the Klondike District last season (1907) was comparatively low—for a number of reasons. The richest parts of the creeks have been worked over, and most of the gold won by very primitive methods of operation; hence the properties so exploited have by no means been exhausted. The time has arrived, however, for the introduction of more modern, up-to-date, and systematic methods of working and management. By so doing, the remaining gold from the still rich, vast areas of gravels in the northern Yukon, may be recovered.

For the reason assigned, a great portion of the Dawson District is now in the intermediate stage; where it does not pay to work the claims by former methods; and where the owners, in many cases, are undecided as to which method to adopt. The Yukon Gold Company (the Guggenheims) now owns practically all the more important gravels on Bonanza, Eldorado and Hunker Creeks, and their tributaries. To work its vast holdings economically, this company is spending several millions of dollars on modern installations, including dredges, newly-designed electrically-driven mechanical elevators, construction of ditches and flumes, building of dams, etc. While these improvements are being made, very little gold is actually being won. Moreover, last season was unusually dry; so that on the properties in a workable condition especially those with hydraulic installations water for operating purposes was obtainable for only a short period.

One some of the creeks tributary to the Indian River, there was, during the last season, considerable renewed activity; due to the staking of virgin portions of the creeks, formerly considered too low grade. These portions—particularly on Dominion Creek above Granville, and those near the mouth of Sulphur Creek, have been proved to contain gold in paying quantities, when worked by modern methods.

Another striking feature noticed last season was, the staking of new creeks; such as Clear, and Black Hills, the latter being staked from head to mouth. It is believed that the values found are very encouraging.

So that, although the days of the individual placer miner in the Klondike are practically at an end—at least on the older creeks—the country is by no means nearly worked out; and a continued large gold production may be expected for many years to come. When the installations of the Yukon Gold Company are completed, a considerable increase over the last fiscal year's production ($2,820,011.55—computed at $15 per oz., which is less than its real value) is anticipated. It is true that certain of the older creeks have been practically worked out by the present methods of operation; but newer systems of working are being discovered, and new fields being found. The Stuart River and its tributaries will, judging by last year's prospecting, yield much more than heretofore.

BRITISH COLUMBIA AND ALBERTA.

The report of Mr. Hedley shows that in 1907 there was much activity in the mining and metallurgical industries of the western provinces, until November, when the financial depression caused a serious check to new enterprises; though many of the well-established industries weathered the storm, or resumed operations after a short cessation.

It appears that, as in the Yukon Territory, so in British Columbia—particularly at Atlin, and in the Cariboo District—the individual placer industry is being superseded by companies working the low-grade areas of gold-bearing gravels on a large scale, and with more modern appliances, all having the promise of an increasingly profitable industry, while the new pioneer camps in the northwestern interior are said to be encouraging.

At the coast, the principal industries are the smelting works of the Tyee Copper Company at Ladysmith, which has built up a considerable custom business; and the mines, concentrator and smelter of the Britannia Copper Syndicate.

In the interior, in the Boundary country, economic progress is reported in the cheapening of working costs, in both mining and smelting. In this district, also, the financial depression, together with high prices and wages, caused a stagnation of production, and of trade. Rossland camp has re-established its industries steadily and definitely; although the profit margins are small. The mining of gold-copper ore shows marked development. In the mines, levels are being opened 2,000 ft. below the surface—practically the level of the Columbia River.

At Trail, the smelter—which has been steadily im-

proved as regards equipment and operating facilities —is evidently doing a profitable business in the smelting, not only of gold-copper ores from Rossland and the Boundary, but ores of lead, silver, and gold also. Base bullion from the lead furnace is desilverized and refined at the electrolytic refinery nearby, which has a capacity of 80 tons daily. The products of this celebrated refinery are pig lead of exceptional purity, lead pipe of all sizes, refined silver, gold, and antimony, as well as copper sulphate.

The companies producing silver-lead are very limited in number: Over 1,000 tons per annum, 7; between 100 and 1,000 tons, 18; one carload or more, about 50; only a few tons, 20.

Many of these properties situated in the Slocan, are in a position to produce a fair tonnage of galena ores, but are not operating; since the market for zinc ore in Canada is limited, while the high tariff makes shipment to the United States practically prohibitory.

The old Blue Bell mine, on Kootenay Lake, has been developed with such satisfactory results that a complete modern concentrating plant has been installed.

In East Kootenay the development of the St. Eugene mine has been very extensive, and the concentrating mill has been so effectually improved that low-grade ores in large tonnage are being handled with great economic advantage.

As a result of practical experiments in Vancouver and elsewhere, an electric smelter is in process of erection at Nelson, in which it is proposed to treat mixed argentiferous lead-zinc ores, with a view of producing lead bullion and commercial spelter in one operation. Electrical energy for power purposes will be furnished from Bonnington Falls.

In the Crow's Nest Pass bituminous coal field, old mines are being re-equipped, and new ones opened; so that there will soon be an abundant coal supply from that region. In the anthracite field—on the main railway line through Alberta—coal is not only being mined in greater quantity, but existing mines are being more extensively developed, and the best modern equipment for dressing is being installed. The briquetting product of the plant at Bankhead in the Rocky Mountains has created such a demand that the company has doubled its installation. Owing to the fact that lignite fields depend largely on cold weather for a market, they were not as active as usual at the end of 1907. The coal fields of Vancouver Island continue at about the same rate of production though the demand far exceeds the supply. New companies are, however, exploiting promising areas, so that an increasing supply may be anticipated.

Two companies are actively developing coal areas in the Nicola Valley, one of which is already producing steam coal of excellent quality. At Princeton one company is fully equipped for the mining and production of high-grade lignite, as soon as the railway—now within 25 miles—reaches the camp.

Cement was being produced at the end of the year by two companies, one situated on Vancouver Island, B. C., and the other at Calgary, Alberta, while a modernly equipped plant has recently been completed at Exshaw, near Banff, and another is under erection near Blairmore in the Crow's Nest Pass.

The brick and building material industry generally was very active, the demand in Alberta calling for shipment to long distances. Two sand-lime brick industries have been established, one at the Coast, another at Regina, Sask., and a third is in contemplation at Edmonton, Alta.

UNITED STATES GEOLOGICAL SURVEY WORK IN ALASKA.

GEOLOGICAL SURVEY WORK in Alaska of late years has been in some measure in keeping with the importance of the mineral resources of that country, a more adequate recognition of which is evident, so that it is probable it will be on a still larger scale as the good results of such valuable pioneer work become increasingly manifest in an enlarged mineral production and the utilization of other mineral resources than gold. The director of the United States Geological Survey, Mr. George Otis Smith, in his recently published "Twenty-eighth Annual Report," mentions Alaskan surveys as one of the special features of the work of the Survey. He says:

"The progress of areal surveys in Alaska is given in detail on later pages of this report, and it is pointed out that practically every mining camp has been visited and investigated. The importance of the rapid extension of such surveys can not be too strongly emphasized, for they furnish not only a guide to the prospector but are absolutely essential to all engineering enterprises. It is worthy of note that while nearly $500,000 has been spent on Alaskan surveys and investigations, this is only about one-half of one per cent. of the output of gold in the areas benefitted by these surveys."

The detail of the work of the Division of Alaskan Mineral Resources, mentioned by the director, follows:

CLASSES OF WORK DONE.

The work of the Division of Alaskan Mineral Resources was carried on under the appropriation of $80,000 for "continuation of the investigation of the mineral resources of Alaska." Under this authority the following classes of work were done: Reconnaissance and detailed geologic surveys, special investigations of mineral resources, reconnaissance and detailed topographic surveys, and investigation of water resources in reference to the supply of water available for placer mining.

PERSONNEL OF DIVISION.

The personnel of the division included one geologist in charge and nine other geologists on annual salaries. In addition to these, four geologists on per diem salaries were employed for a part of the time.

Four topographers were continuously employed in the Alaskan work, and two engineers were detailed to the division, one for four months and the other for six months. Six temporary geologic assistants and 30 packers, cooks, etc., were employed in the field work for a period of from three to five months. The office force included two clerks on annual salaries and one clerk employed for six months.

FIELD OPERATIONS IN SEASON OF 1906.

In 1906 14 parties were engaged in field-work during a period varying from two and a half to six months. Eight of these parties carried on geologic investigations, two made topographic surveys, three combined both classes of work, and one was employed in stream measurements and hydrographic reconnaissance. The aggregate of the areas covered by geologic reconnaissance surveys is 9,000 sq. miles; by detailed geologic surveys, 548 sq. miles. Topographic reconnaissance surveys were carried over an area of 10,768 sq. miles; detailed topographic surveys over an area of 40 sq. miles. Detailed hydrographic surveys were made of an area of 200 sq. miles, and reconnaissance surveys over an area of 1,000 sq. miles. In addition to this, of the 28 Alaskan mining districts in which work is going on 16, including all but one of the large producing districts, were visited by members of the staff.

The following table presents a summary of the progress of surveys since the organization of systematic work in 1898:

Progress of Surveys in Alaska, in Square Miles.

Year.	Appropriation.	Geologic.		Topographic		Hydrographic.	
		Reconnaissance.	Detailed.	Reconnaissance.	Detailed.	Reconnaissance	Detailed.
1898	$46,189.60	9,500	.....	14,912	.....	.....	.....
1899	25,000.00	6,000	.....	8,688	.....	.....	.....
1900	25,000.00	10,000	.....	11,152	.....	.....	.....
1901	35,000.00	12,000	.....	15,664	.....	.....	.....
1902	60,000.00	17,000	.....	20,304	336	.....	.....
1903	60,000.00	13,000	336	15,008	.....	.....	.....
1904	60,000.00	6,000	.....	6,480	480	.....	.....
1905	80,000.00	8,000	880	8,176	948	.....	.....
1906	80,000.00	9,000	548	10,768	40	1,000	200
Total	$471,189.60	90,500	1,764	111,152	1,804	1,000	200

The actual areal surveys are tersely summarized in the foregoing table, but many of the results can not be presented in this form. For example, practically every mining camp in Alaska has been investigated, and some in great detail, yet the areal results of surveys of this class are very meagre. This will account for the fact that with increased appropriations there has not always been an increase in the areas surveyed. Moreover, in the last three years much of the funds has been spent in detailed surveys, which, roughly speaking, cost ten times as much as reconnaissance work.

The table shows that there remain nearly 500,000 sq. miles in Alaska* which have not been covered even by reconnaissance geologic surveys. Until this work shall be much more nearly completed all generalizations on the distribution of the mineral wealth must remain largely hypothetical.

Preliminary topographic surveys, including about 50,000 sq. miles done by other government bureaus, have been carried over less than a quarter of the entire area.

GEOGRAPHIC DISTRIBUTION OF INVESTIGATIONS.

General.—As in previous years, the general administrative duties were performed by Alfred H. Brooks, geologist in charge, who gave to them much of his time; but he also collected the statistics of the production of gold, silver, and copper. The general supervision of the topographic work was, as in previous years, entrusted to T. G. Gerdine.

In June the geologist in charge joined E. M. Kindle at Eagle, and together they made a careful study of the geology along the Yukon. The main purpose of the work was to procure data which would serve to elucidate the stratigraphic problems, but incidentally some facts were gathered bearing on the occurrence of placer gold and of coal. From Circle the geologist in charge went overland to Fairbanks, making an examination on the way of the Birch Creek placer district. A few days were then spent on the Fairbanks District and, at the invitation of Maj. W. P. Richardson, the geologist in charge joined the party of J. L. McPherson, engineer of the Alaska Road Commission, and carried geologic reconnaissance westward from Fairbanks to the Rapids on the Yukon, making also a brief visit to the Rampart District. The month of September was spent in Seward Peninsula with the parties working there and in making a study of the Kougarok placer district. A study of the stratigraphy of the Cretaceous and Tertiary coal-bearing rocks in the Territory was undertaken by W. W. Atwood for the purpose of establishing correlation and obtaining information on the relative commercial value of the different fields. The details of this investigation will be referred to later.

The preparation of the report on the mineral resources of the Prince William Sound region was continued by U. S. Grant.

Southeastern Alaska.—At the close of the last season the preliminary geologic mapping in southeastern Alaska was completed as far northwest as Lituya Bay. There still remains, however, the survey of the Chilkat basin, the inland parts of the larger islands, and the more inaccessible portions of the high ranges. The work of last year embraced an area of 3,000 to 4,000 sq. miles, extending northwestward from Lynn Canal to Lituya Bay and including a part of Chichagof Island, and was carried on by F. E. Wright and C. W. Wright, assisted by R. W. Pumpelly. Though it was principally geologic, some

*The area of Alaska is 586,400 sq. miles.

topographic reconnaissance surveys were made, and many data were collected on the retreat of the glaciers in the Glacier Bay region. At the close of the season C. W. Wright visited the Juneau and Ketchikan Districts to collect data on the mining progress.

The urgent demand for detailed surveys of the more important mining districts in southeastern Alaska has been met, so far as the funds available would permit. In 1906 a survey was made, on a scale of a mile to the inch, of the more important parts of the Berners Bay district, embracing an area of about 40 sq. miles. This work was done by R. B. Oliver.

Yakutat-Alsek Region.—Work in the Yakutat-Alsek Bay region was continued by R. S. Tarr and B. S. Butler. Mr. Tarr planned to cross the Malaspina Glacier to Yaktag, but the fissuring which had taken place in this ice field since his previous visit in 1905 made it impossible to carry out this plan. Mr. Tarr's observations in this region showed that an advance of some of the glaciers had taken place since 1905. This is, of course, exceptional for Alaskan glaciers; nevertheless, it may have an important bearing on the location of railway routes that traverse the fronts of ice sheets.

A geologic and topographic reconnaissance survey was carried from Yakutat Bay southward to Alsek River by Eliot Blackwelder and A. G. Maddren. It was also planned to ascend that stream to the International Boundary, but a serious accident, which involved the loss of one of the boats and a large part of the provisions and equipment, prevented the accomplishment of this purpose.

Controller Bay Region.—The mapping of the accessible coal and oil fields of this district, begun in 1905 by G. C. Martin, was completed.

Cook Inlet Region.—The stratigraphy of the lignitic coal-bearing rocks on both the east and the west shore of Cook Inlet was started by W. W. Atwood, with an assistant. This was part of the general plan to study the coal-bearing rocks of Alaska, already referred to.

A party under the direction of T. G. Gerdine made a topographic and geologic reconnaissance survey of an area covering about 7,200 sq. miles lying northeast of and adjacent to Cook Inlet. Mr. Gerdine, accompanied by Adolph Knopf as geologist, mapped the valley of Knik River and portions of the lower Matanuska River and the area about its headwaters from Chickaloon Creek northward. R. H. Sargent, topographer, accompanied by Sidney Paige, geologist, mapped as far as practicable the area between Susitna and Matanuska Rivers as far north as Chickaloon Creek and Talkeetna River, with an additional small area south of Knik River on the east side of Knik Arm.

At the end of the season Mr. Gerdine and Mr. Sargent completed a traverse of the shore line from Knik southward to the mouth of Kusilof River, while Mr. Paige and Mr. Knopf visited the Cook Inlet placer fields.

Seward Peninsula.—The areal mapping of the Nome and Grand Central quadrangles was completed by F. H. Moffit, assisted by P. S. Smith. This work is the first attempt to make an exhaustive study of the geology of any of the placer districts. It is hoped that as a result of such investigations general laws governing the occurrence and distribution of the placer gold of the peninsula may be formulated. Mr. Smith also made a reconnaissance of some of the other placer districts of the peninsula, both to gather data on the progress of mining and also to familiarize himself with some of the larger problems of the province.

The cheaper methods of placer mining are directly dependent on an abundant supply of water; therefore, a knowledge of the water supply is of first importance to this industry. The accurate determination of the mean discharge of any given stream must be based on observations extending through a long period of years, to equalize the variations caused by abnormal seasons. Such an investigation was begun at Nome last season. The area investigated embraced a belt of country about 20 miles wide, stretching inland from Nome to the Kigluaik Mountains, a distance of about 40 miles, and was chosen both because of its commercial importance and because the detailed maps were available for calculating the areas of stream basins. It is hoped that funds may be available to continue this work and to extend it to other parts of Alaska.

These hydrographic surveys were made possible only through the co-operation of the water-resources branch, which detailed John C. Hoyt, engineer, to take charge. Mr. Hoyt spent about two months in the field, and the observations were continued by F. F. Henshaw.

Yukon District.—A geologic reconnaissance of an area of about 2,000 sq. miles, lying southwest of the lower Tanana, was made by L. M. Prindle, with one assistant. The Kantishna and part of the Bonnifield placer districts, as well as the Cantwell coal field, were embraced within the scope of the investigations. The stratigraphy of the Paleozoic rocks of the upper Yukon basin was studied by E. M. Kindle, with one assistant. In the course of this work Mr. Kindle ascended Porcupine River as far as the International Boundary. This investigation has an important bearing on the correlation of the gold-bearing series of the Yukon-Tanana region.

Topographic reconnaissance surveys were carried westward from Fairbanks to the Yukon and southward to the Tanana by D. C. Witherspoon and R. B. Oliver. An area of 6,300 sq. miles was surveyed on a scale of 1:250,000. This completes the preliminary mapping of the Yukon-Tanana region west of the 144th meridian, except a narrow belt along the Tanana. It is expected that in another season the preliminary mapping of the area lying between Yukon and Tanana Rivers and the 142nd meridian will be completed.

FIELD OPERATIONS IN SEASON OF 1907.

Under a continuation of the same appropriation 13 parties were despatched to Alaska during the months of April, May and June, while another will be sent early in July. The work of these parties includes a continuation of geologic and topographic surveys, and investigations of mineral resources in southeastern Alaska, in the Copper River region, in the Yukon basin, and in Seward Peninsula. The investigation of the water resources of the Nome region is also continued, and similar work is begun in the Fairbanks District.

SHEEP CREEK CAMP, IN NELSON MINING DIVISION.

A Promising Gold Belt in the Quartzite Range of West Kootenay.

SHEEP CREEK CAMP, in the southern part of Nelson mining division, has for some time past been making steady progress and attracting an increasing amount of attention as a result of its production of lode gold. Among the mining properties that have come prominently into notice are the Queen, Nugget, Kootenay Belle and Mother Lode. The MINING RECORD has received the following interesting report on the district, made by J. L. Warner, E. M.:

"Five miles in width and 25 in length, this gold area extends northeasterly from Salmon River. Along the high range of mountains the formation is exposed to Mount Laska, 10 miles from Procter on Kootenay Lake. It is attracting much interest in mining circles by reason of recent remarkable results from large shipments coming from new development work on properties at some distance from the first established mines. The mountain range is easily approached by the narrow valleys of the tributary streams of Salmon River. The moderate altitude of the main creek, about 3,000 ft., is a distinguishing feature, in contrast to the mountain ridges, which rise rapidly to elevations of 6,000 ft., while many peaks attain to 7,500 ft. and heights even greater. The abundance of timber for mining requirements and the unusual water supply for cheap power for mining and milling of ores, make exceptionally favourable conditions. Simultaneous shipments the past winter, 20 carloads averaging more than $100 per ton, have established the general occurrence of high-grade ore in the many veins of the section. This production coming from different properties and from widely separated veins with such uniformity and high-grade of ore, is making its own record for the camp, requiring no expert endorsement of its future.

"The Yellowstone gold camp, on Sheep Creek, a tributary of the Salmon River, lies southeasterly, 10 miles by wagon road from Salmo, a station on the Spokane Falls & Northern branch of the Great Northern Railway, situated 25 miles south of Nelson, and 175 north of Spokane, Wash. The vein system is regular, with fissure veins, at intervals of 50 to 150 ft., from 3 to 50 ft. in width. These traverse the massive white quartzite formation at an angle of 26 deg. Numerous planes of fracture occur in the vicinity of the veins, all of which have a direction N. 41 deg. E. and enclose parallel bands of talcose schist. These occur in thin layers up to two feet in thickness, and this laminated structure facilitates the breaking of the ores in mining the quartz in the veins. All the parallel fissures are true in direction and are readily traceable for miles because of the light covering of soil and their exposure by intersection in the numerous gulches on the mountain sides. All the fissure veins are nearly vertical, dipping into the mountain slightly, generally standing at an angle of about 80 deg. to the horizon. They are free from the enclosing formation, and paystreaks 6 to 30 in. in width of sulphide or oxidized ore occur on one wall or both. The slate-like cleavage of the quartz adjacent to the paystreaks of the veins makes separation of the two easy in mining. Where the ore is oxidized, as is often the case to a depth of 135 ft. or more, these paystreaks are almost picking ground and are quite easily mined. At times much gold is plainly visible, appearing mostly in small particles, distributed through the decomposed ore, but as a rule the richness of the ore is not evident except by panning or by assay. The ore in the paystreaks is readily distinguishable, consisting of honeycombed decomposed quartz, coloured yellow to black by oxidation of the sulphides. This ore is sacked as broken down in the mine before shipment to the smelter. The remainder of the vein is milled by stamps and the values obtained as bar bullion and concentrates, the latter going to the smelter.

"Mining on the north side of Sheep Creek is producing oxidized ores at a depth of more than 100 ft., while on the south side of the creek the unaltered sulphides are hoisted from shafts 300 ft. below the creek bed—a difference in altitude of more than 2,500 ft., thus establishing their permanency with depth and fixed character as true fissure veins.

"The sulphides in the quartz ore consist of iron pyrite, with occasionally a little galena and zinc blende present, and very rarely, copper pyrite. The ores are crushed in stamp mills and the values saved on tables as concentrates, after extraction of the free gold on amalgamated plates in the usual way.

"A singular occurrence which has much to do with the exceptional richness of the ore is the rare element tungsten associated with the gold in the veins. It occurs in the heavy black mineral wolframite, which has a specific gravity of 7.1, and the yellow oxide alteration product tungstite, specific gravity 5.5. Considerable ore carrying respectively 85 per cent. and 72 per cent. tungsten has been shipped from the Kootenay Belle mine, having a value even greater than the gold contents, according to Prof. T. R. Walker, of Toronto University.

"On the belt in the vicinity of Yellowstone the following groups of properties are recognized:

SHEEP CREEK SOUTH.	
Queen Yellowstone	11 claims
Kootenay Belle	5 claims
Ore Hill	5 claims
Summit	3 claims
Kennedy	3 claims
Schwinke	2 claims
SHEEP CREEK NORTH.	
Wilson	2 claims
Devlin	3 claims
Golden Belle	5 claims
Mt. Belle	2 claims
Joyant	2 claims
Mother Lode	6 claims
Snowslide	2 claims
FAWN CREEK.	
Nugget	3 claims
Golden Fawn	3 claims
Mt. View	3 claims
Lottie	3 claims
Total	63 claims

"The production of the principal mines in the camp, (exclusive of ore accumulated on dumps), follows: —

	Lin. Feet.	
"Queen-Yellowstone—		
Value of production		$418,000
Vein development, 3 levels.	4100	
cross-cuts	1000	
Total	5100	
"Kootenay Belle—		
Value of production		$ 53,000
Vein development	360	
Cross-cuts	320	
Total	680	
"Nugget—		
Value of production		$ 21,000
Vein development	178	
Cross-cuts	90	
Total	268	
"Mother Lode—		
Value of production		$ 16,000
Vein development	121	
Cross-cuts	79	
Total	200	

"The total value of production to date from ore milled, according to records of shipments made, is $508,000. The total development as shown is only 6,248 ft., therefore there is the remarkable yield of $80 per lin. ft., costing $10 to $15 per ft. of drifting. (little or no timbering being required). Comparing the best developed mine—the Queen—having one mile of underground work, with the partially developed properties, the same rate of production remains true. The average value of the ore milled is 1.25 oz. gold per ton from the oxidized section, and of the deep-level sulphides 0.75 oz. per ton. (The latter, however, contain 3 per cent. more concentrates than the former.) This is phenomenal, uniform production considered. The Queen and Kootenay Belle are the only two mines having equipment and there are as yet but two mills in the camp, with a combined capacity of only 32 tons a day. The Queen production in 1907 was $104,000 operating only 10 stamps, 8,000 tons of ore having come from the 7-ft. vein. Construction arrangements are in progress to double the milling capacity at once for the requirement of these two mines. All other mines in the camp are unprovided for, being without machinery of any kind. They present great inducements to outside capital, where large profits are shown to be obtainable by actual returns from ore.

"The unexplored section, 12 miles in extent, between the Bayonne mine, purchased for $100,000 cash, and the Queen at Yellowstone, which sold recently for $175,000, presents an excellent opportunity for the prospector. At Salmo, which is the outfitting point and nearest trading place for this mining region, sufficient pack horses are available, as well as suitable equipment for freighting ore and supplies. Wagon freight on supplies costs $10 per ton into camp, and on crude ore and concentrates $4 per ton from the Yellowstone mine to the railway at Salmo.

"Owing to the fluxing value in smelting, due to the excess iron in the Queen concentrates, smelter treatment is practically free of cost. The prevailing rate on the oxidized silicious ores is $9 per ton railway-freight, and treatment.

"This camp has paid from the grass roots; values show in all of the many parallel veins. It has had little assistance from outside capital.

"Only five properties of those shown above as comprising the established groups of mines are in an incorporated stock company. It is interesting to note that nearly all the properties are still in the hands of the original owners. In consequence the camp presents favourable opportunities for leasing arrangements on proved ground without the tedious complications common to many of the older camps.

"Such facts justify the immediate equipment of many of the established groups of mines which show rich workable veins in the vicinity of Yellowstone. With the advent of ore treatment by cyanide (the present losses in mill tailings being from $2 to $6 per ton, owing to the richness of the ore), an even higher extraction will cause the Yellowstone camp to become noted for its gold production. The quartzite range is destined to add many producing properties which will have the distinct advantage of far greater richness of ore per ton mined than the Rossland and Boundary districts, with easier breaking of rock for economy in mining, and with the added conditions, most favourable to the opening of properties to great depth by short tunnels instead of shafts, by reason of the steeper mountain slopes prevailing throughout the Yellowstone section."

Company Meetings and Reports.

CROW'S NEST PASS COAL CO., LTD.

On February 14, 1908, the eleventh annual general meeting of shareholders in the Crow's Nest Pass Coal Company, Limited, was held at the head offices of the company, Toronto, Ontario, but owing to there not having been sufficient time since the close of the last financial year to admit of the preparation of the yearly statement, it was adjourned until March 10, when 80 per cent. of the stock was represented, either in person or by proxy.

The president, G. G. S. Lindsey, K.C., having taken the chair, the secretary, R. M. Young, read the eleventh annual report of the directors, and the accompanying financial statements, as follows:

DIRECTOR'S REPORT.

"The directors beg to submit to the shareholders of the company their Eleventh Annual Report, including Statement of Assets and Liabilities, as of December 31, 1907.

"The balance at the credit of Profit and Loss Account brought forward from 1906 amounts to $353,592.42. To this has been added the sum of $382,986.28, being the company's net profits from the operations for the year, also the sum of $324,420, representing payments of premium on stock, so that the aggregate of the Profit and Loss Account is $1,060,998.70. From this amount, the directors have paid four quarterly dividends of 2½ per cent. each, making 10 per cent. for the year, and amounting in all to $355,178.98; have transferred to Reserve Fund $324,420, and have carried forward to 1908 $381,399.72 to the credit of Profit and Loss Account.

"The coal mined during the year amounted to 981,939 tons as against 806,901 tons mined in 1906. The production of coke amounted to 231,368 tons as against 213,295 tons in 1906. But for a strike during the month of April, and the action of the smelters in raising wages, and so depriving us of our coke oven men in mid-summer, and then for the most part shutting down their mines and smelters for the last two months of the year because they could not operate under the new wage scale, the output would have overreached considerably the 1,000,000-ton mark for the year.

"The cost of mining and coke making during 1907 were increased greatly by reason of the advance in wages to miners, the irregular working of the men, the, at times, scarcity of labour, the expense of securing new miners, the higher prices paid for all materials used, the heavy increase in freight rates, the larger cost of compensation for injuries to workmen, and the extremely severe weather during the first three months of the year. Besides, a fluctuating demand for coal involved pressing the mines at times for tonnage, which had the inevitable influence of raising the cost. These conditions were the most unfavourable in the history of the company.

"During the year there has been spent on improvements the sum of $414,501.35 by the Coal Company; $21,735.56 by the Electric Light & Power Company, and $57,581.82 by the Morrissey, Fernie and Michel Railway Company, the last two being subsidiary companies of the Coal Company, or a total on improvements of $493,818.73.

"The contract between the company and its employees expired on April 1, 1907. Seven of the operators in the Crow's Nest Pass, and on the main line of the Canadian Pacific Railway in Alberta met their men at their request in joint conference in the month of March, with a view to renewing agreements. After more than 20 days of patient labour in the consideration of the subject, it was found impossible to reach an agreement. Both sides then asked for the appointment of a Board of Conciliation under the 'Industrial Disputes Investigation Act,' which had just become law. Notwithstanding the provisions of that act, which prohibits all parties from stopping work under penalties, pending a reference of disputes to such a board appointed under that act, the miners did go on strike. A Board of Conciliation was appointed, the chairman selected by the Dominion Minister of Labour being Chief Justice Sir William Mulock, K.C.M.G. Before the board actually sat, the various operators and their men had met again in conference, and were again unable to agree upon some points. Mackenzie King, Deputy Minister of Labour, being in Fernie, lent his good offices, with the result that without laying the matters in dispute before the Board of Conciliation, a new agreement was reached on May 2, lasting till April 1, 1909. Increases in some of the mining rates, as well as to outside and inside labour, were accorded the men, and a joint committee agreed upon to settle all disputes.

"During the year Frank H. McGuigan, and Francis McLennan, K.C., retired from the directorate, and Jay P. Graves, of Spokane, Washington, was added to the board.

"In November several changes in the staff were made. Senator Cox having resigned the office of president, G. G. S. Lindsey, K.C., was advanced to that position on the understanding that as chief executive, he would give all his time to the duties of that office. James D. Hurd, a mining engineer of long and wide experience, whose letters of testimony were of the highest order, was appointed general manager R G Drinman, general superintendent, having resigned to accept a position with the Hosmer Mines, Limited, Charles Simister, mine superintendent at Michel, was advanced to the position of general superintendent. Daniel Davies, having resigned the office of comptroller and purchasing agent, Alois Klauer, assistant accountant, was advanced to the office of chief accountant (that of comptroller being abolished), and J. B. Turney, assistant purchasing agent, was advanced to the position of purchasing agent. R. M. Young, assistant secretary, was advanced to the position of secretary."

The accounts submitted, duly audited, were as follows.

BALANCE SHEET, DECEMBER 31, 1907.

Assets.

Mines, real estate, plant, development, etc.	$5,977,011.63
Securities owned	691,296.98
Accounts receivable	455,427.18
Cash on hand and in bank	1,327.74
	$7,125,063.53

Liabilities.

Capital stock paid up	$3,716,280.00
Reserve fund	2,124,420.00
Bills payable	476,713 52
Accounts payable	335,181.03
Dividend payable, January 2, 1908	91,069.26
Profit and loss	381,399 72
	$7,125,063.53

PROFIT AND LOSS ACCOUNT

Balance at credit, December 31, 1906	$ 353,592.42
Net profit for year 1907	382,986.28
Premium received on new stock	324,420.00
	$1,060,998.70
Appropriated as follows:	
Dividends paid	$ 355,178.98
Carried to reserve	324,420.00
Balance carried forward to 1908	381,399.72
	$1,060,998.70

PRESIDENT'S ADDRESS.

In moving the adoption of the report, the president said:

"I beg to move the adoption of the report;

"In connection with the resolution, I will give certain information which I think will be of interest to the shareholders, and after giving that, any question you shall ask in connection with the report, will be gladly answered.

"The Directors' Report and Financial Statement which you have just heard read, indicate that the company has passed a satisfactory year.

"The total output of coal from all the mines during the

year was 981,939 tons, very close to the 1,000,000-ton mark, and an increase of 175,000 tons, or 22 per cent. over 1906. We increased shipments to Canadian customers 136,600 tons, coked 21,000 tons more coal, and exported 67,800 tons more coal than in 1906.

"The total output of coke during the year was 231,368 tons, an increase of 8½ per cent. over 1906. We increased shipments 7,100 tons to home customers, and exported 7,300 tons more than in 1906.

"In the spring the increased demand for fuel became so great, and our largest customers advised and recommended so strongly our being prepared to meet the expanding requirements of the country and of themselves, as then indicated, that such a course seemed absolutely necessary, and justified a decision to make the necessary expenditure on capital account to provide a new plant and machinery, and for the development and opening up of new mines, with a view to double at least the then capacity for tonnage. The Great Northern Railway Company, to put Michel mines in touch with wider markets, agreed to extend its line from Fernie to that point, and it is expected that this work will be completed this month, thus giving two railways to these mines.

"The mines in active operation were. At Coal Creek Collieries, Nos 2, 5 and 9. At Michel Collieries, Nos. 3, 4, 5 and 8.

"In No 2 mine, a rock tunnel has been driven to the south of the high line not far from the entry, which has opened up, what will be practically a new mine in a fine seam of coal, and in No 8 mine, a rock tunnel is being driven to cross-cut a known seam of good coal.

"The new mines opened up were. At Coal Creek Collieries, No. 6. At Sitkum Collieries, Nos. 11 and 12. At Carbonado Collieries, Nos 7 and 8. All of these, with the possible exception of No. 6, should prove to be valuable producers of a high quality of coal.

"The following are among the more important surface improvements completed or in progress:

"At Coal Creek Collieries: Two large boilers were added to the steam plant; one large compressor; miners' dwellings; a large fan at No. 5 mine; 300 mine cars. Considerable improvements were made in the timber yards and timber handling appliances, looking to a reduction in the cost of preparing and handling that material, and several storage houses for material, and a hay and grain storage warehouse were added.

"The remainder of the structures at the mines were made fire-proof, and the fire-fighting appliances put into first class condition.

"At Sitkum Collieries: Situate half-way between Fernie and Coal Creek on the line of railway, sidings and temporary tipples have been built.

"At Michel Collieries: A large new Walker fan at No. 8 mine; two large boilers; a large compressor, 300 mine cars, two air locomotives for No. 8 mine; two large boarding houses and 24 dwellings.

"A new and extensive tipple is badly needed at this point.

"At Carbonado Collieries. Two new seams of coal which have been opened up, give good promise and are showing excellent coal, the fixed carbon running particularly high in them, and these should be economically mined.

The expenditure on improvements amounted to $414,501.35, and there remains to be expended on those to be completed this year, $151,955.88. Other improvements, including the Michel tipple, will have to be made.

"The company's pay rolls for the year exceeded those of 1906 by $500,000; the employees increased from an average in 1906 of 1,745 to an average in 1907 of 2,470.

"The expense of securing new men was considerable. When our coke oven employees left us in June, we brought in, principally from Winnipeg, large numbers of men, who had just arrived from Europe. Nearly all proved unequal to the work of pulling ovens, and for a considerable time the task of replacing the men who had left was an impossible one. At this time the price of metals, particularly copper, was very high, and the demand for coke consequently very heavy. The Government of British Columbia threatened to appoint a commission to oblige a larger production of coke, but on the facts being placed before them, abandoned the idea. Much was stated, and most unfairly stated, to the effect that there was a discrimination against Canadian in favour of American smelters, but the charge was absolutely without foundation. The situation was one brought about by the Canadian smelters themselves in raising wages to their men above those paid to ours, with the natural result that, in a thin labour market they got the men. From April till September miners were very scarce. We sent agents to England, Scotland and Wales, and assisted the passages out of 300 miners. Later on, towards the end of the year, the demand for coal and coke having fallen off, applications for work from miners on the spot had to be refused.

"In April, a strike of three weeks' duration took place, owing to the failure to renew agreements at the Calgary conference in March, but before the Board of Conciliation under the new 'Industrial Disputes Act' convened for the purpose of entering upon its duties, the operators and their men had effected a new wage schedule, covering a period of two years expiring on April 1, 1908. The increase thus occasioned in the cost of production of coal amounted practically to 10 cents per ton, and in the production of coke to 15 cents per ton. What is hoped will prove a valuable provision in the new contract is one which refers all disputes to a joint board of operators and men for final settlement, the Minister of Labour appointing an umpire when the parties fail to agree. So far this has worked well.

"In January the Pacific Coast Coal Company in the neighbouring State of Washington, had voluntarily increased the wages of all their men 10 per cent., and during the following month the collieries on Vancouver Island followed suit. It was under these conditions that the demands of the men for 20 per cent. increase all round in wages had to be dealt with.

"The royalty and taxes on coal during the year amounted to $52,621.20, and on coke to $18,078.84.

"In May the capital stock of the company was increased by the addition of 5,000 shares, bringing the authorized capital up to $4,000,000, which issue was ratified at a special meeting of the shareholders of the company. These shares were offered *pro rata* among the shareholders at a premium of $150. There still remain in the treasury 2,725 shares.

"Senator Cox, following his well-defined policy of reducing his responsibilities, resigned from the presidency, and now resigns from the board. His splendid efforts in the interests of the company have earned for him the highest appreciation and regard of the shareholders, and his retirement is accepted with the greatest regret. Some of the directors, feeling that the company has now reached a point in its career where the many difficulties of the past have been satisfactorily disposed of, and that its course in the future will be more smooth, have intimated that it will not be necessary to trouble so many of the shareholders in future to act as directors, and have tendered their resignations. The loss of the valuable services of these gentlemen is much to be regretted, for they have well earned the warmest thanks of the shareholders for their efforts in the interests of the company, and their retirement is received with much regret. Their wishes will be given effect to, and as it will effect some saving of expense, it will be suggested to the shareholders that the board of directors for next year shall be made up of nine members.

"Owing to the variation of earnings in each month, and the fact that the payment of quarterly dividends necessitates their being declared before the end of each quarter and before the accounts are prepared, it has been decided to pay dividends in future, half-yearly instead of quarterly.

"It is impossible to close the accounts, prepare the annual statement, and leave time for proper audit between the end of the year and the second Friday in February. Your directors have therefore prepared a by-law restoring the date of the annual meeting to the second Friday in March.

"There was a falling off in the demand for coal and coke during the last months of the year. In July and August due to the shortage of men at our coke ovens, and again in the

last months of the year by reason of the shutting down of the smelters to adjust labour conditions, the output of coke was low. The outlook of the metal market seems to be improving, and an increased demand for coke is looked for. An improvement in the demand for coal is already felt."

VICE-PRESIDENT'S ADDRESS.

Hon Robert Jaffray, first vice-president of the company, in seconding the motion to adopt the report, said.

"During the year a considerable amount of development work was done in the older mines, which will permit of a larger and more economically mined output of coal during the current year. At times during the year work was carried on under great pressure for tonnage, which always has the effect of increasing the cost of production. Never before in the history of the company have we experienced such fluctuating demands as we did last year.

"A claim for damages for delay, made against the builders of the tipple at Coal Creek, was settled at $10,000, and an old claim against the Canadian Pacific Railway Company for timber cut during the construction period of their railway was disposed of in a manner satisfactory to the company by the payment of $25,000.

"The Crow's Nest Pass Electric Light and Power Company, Limited, added considerably to its plant during the year and expended thereon $21,735.56.

"An extension of the telephone lines was made to Elkmouth, connection being there made with the Cranbrook system. Considerable extensions were made to the water mains, local telephone lines and electric light systems.

"It was decided to remove the objection of the miners to Michel being a closed town, and to afford them an opportunity to buy land and build homes for themselves. With this end in view, a townsite of about 100 acres was put upon the market, close to the company's mining property. A considerable section was laid off for exclusive sale at cheap rates to the miners on easy terms of payment to encourage them to own their own houses, and some 30 purchased lots last year, while it is expected that this will be considerably taken advantage of during the year 1908. The Great Northern Railway station at Michel is just opposite the middle of the townsite.

"The Morrissey, Fernie and Michel Railway Company spent on improvements in the year 1907 $57,581.82, made up of 15 Roger dump cars, six box cars, coach, passenger car, locomotive, snow plow, car shop and wheel press.

"All the railway tracks at the Fernie coke ovens and at Coal Creek and Michel Collieries, other than those on their right-of-way were purchased from the Canadian Pacific Railway Company.

"I read you with pleasure the following extract from a letter written by J. J. Holmes, expert in charge of United States Geological Survey, after visiting Fernie on September 11:

"'At the time of my visit there I was greatly pleased with the care and cleanliness with which the mining operations were being conducted, these being in marked contrast with the wasteful methods that are being practised in many of the coal mines in the States.

"'If you can give Mr. Groves blue prints of some of your mine maps showing the methods of working that are being followed, I will appreciate this courtesy, and assure your that no public or other use will be made of these maps, excepting that of our immediate force in studying your excellent mining methods.'"

The report was unanimously adopted.

On motion of Sir Henry M. Pellatt, seconded by E. R. Wood, Col. J. G. Langton was appointed auditor of the company for the ensuing year.

On motion duly made the following by-laws were confirmed:

By-law No 113, being a by-law to abolish the office of managing director and to transfer the duties formerly provided by the by laws for that office to those of the office of president.

By-law No. 116, being a by-law to change the date of the annual meeting to the second Friday in March.

By-law No. 117, being a by-law to make provision for banking, and for the signing of cheques.

By-law No. 118, being a by-law to change the maximum number of directors who shall constitute the board of the company from 15 to 9.

By-law No 119, being a by-law to change the number of directors constituting a quorum of the board from six to five.

By-law No. 120, being a by-law to change the date upon which the monthly meeting of directors shall be held.

It was resolved that the thanks of the shareholders are due, and are hereby tendered to the general manager, general superintendent, chief accountant, land commissioner and other officers of the company for their services to the company in the fulfilment of their respective duties during the past year.

It was resolved that the number of directors for the ensuing year be nine.

A ballot was taken, which resulted in the following being elected directors for the ensuing year: G. G. S. Lindsey, K. C., Hon. Robert Jaffray, Lieut.-Col. Sir Henry M. Pellatt, K. B., E. R. Wood, Elias Rogers, Jay P. Graves, E. C. Whitney, Col. W. P. Clough, H. B. McGiverin.

The meeting then adjourned.

ELECTION OF OFFICERS.

At a subsequent meeting of the directors the following officers were elected: President, G. G. S. Lindsey, K.C.; vice-presidents, Hon. Robert Jaffray, Lt.-Col. Sir Henry M. Pellatt, K.B.; treasurer, E. R. Wood; secretary, R. M. Young.

TYEE COPPER COMPANY, LIMITED.

The report of the Tyee Copper Company, Limited, for year ended April 30, 1908, to be presented at the annual meeting of the company on July 31, states that Mr. T. H. Wilson, chairman of the company, visited its properties in British Columbia, and after consulting with Mr. W. H. Trewartha-James and the mine officials it was decided to suspend mining operations for the time being at Mount Sicker.

The death of the general manager (Mr. Clermont Livingston) occurred on October 20, 1907, and Mr. W. H. Trewartha-James, M.I.M.M., M.N.E.I.M. and Mech. E., M.C. and M.S. of S.A., was appointed to succeed him as general manager in British Columbia. During the interval the secretary (Mr. W. Gardner) successfully carried on the business of the company in Victoria, B.C.

The new wharf (at Ladysmith) which is equipped with the most up-to-date electrical appliances, is now complete, and the additional smelting plant is well advanced in construction.

COMPANY CABLES AND NOTES.

CABLES.

British Columbia—

Le Roi—May: Shipped from the mine to Northport during the month 5,673 tons of ore, containing 2,840 oz. gold, 3,950 oz. silver, and 154,300 lb. copper. Expenditure on development work, $6,000.

Note—In last month's MINING RECORD Le Roi April returns were incorrectly shown as those of March. The correct returns for the two months, respectively are as follows: March: Shipped to Northport 6,700 tons of ore, containing 2,680 oz. gold, 4,600 oz silver, and 170,000 lb. copper. Expenditure on development work, $7,250. April: Shipped to Northport 6,116 tons of ore, containing 3,250 oz. gold, 5,600 oz. silver, and 192,000 lb copper Expenditure on development work, $9,000.

U. S. A.—

Alaska Mexican—April. 120-stamp mill ran 30 days, crushed 21,673 tons of ore; estimated realizable value of bullion $25,929. Saved 355 tons sulphurets, estimated realizable value $19,625. Working expenses, $17,782.

Alaska Treadwell—April. 240-stamp mill ran 30½ days, crushed 32,074 tons of ore; estimated realizable value of

bullion, $43,732. Saved 511 tons sulphurets; estimated realizable value, $24,788. Working expenses, $62,335. Now have full crew throughout.

Alaska United—April: Ready Bullion claim 120-stamp mill ran 30½ days, 700-ft. claim 100 stamp mill ran 7¾ days, crushed 22,748 tons of ore, estimated realizable value of bullion, $28,007. Saved 481 tons of sulphurets, estimated realizable value, $18,401. Working expenses, $34,131.

DIVIDEND.

The Le Roi No. 2, Limited, has declared a dividend of two shillings per share (practically 50 cents), payable July 8. The company's capital is £600,000 in 120,000 shares of £5 each, so the total of this dividend is £12,000. The aggregate of dividends declared by this company to date is about $890,000.

NOTES.

On June 26 the Vancouver *Province* stated that on that date there was made, in chambers, "an application in which the Hudson's Bay Company was seeking an order for the winding up of the La Plata Mines Company, Limited, upon an unsatisfied judgment of $3,366 for goods supplied. Mr. Justice Martin adjourned the hearing of the application until the following week. The company was incorporated three years ago with a capital of $2,000,000, with head office in Nelson. According to the petition presented to the court by Mr. J. A. Russell, for the Hudson's Bay Company, the claims of creditors total $27,000. He also stated that there was a trust mortgage for $200,000 which, although registered at Victoria, had not been registered at Nelson as he claimed it should have been. Mr. Martin Griffin, for the mining company, opposed the petition."

The Moyie *Leader* states that application has been made for a charter for the Aurora Mining and Development Company, the chief objects of which are to acquire and develop the Society Girl mining property, situated immediately east of the St. Eugene group, near Moyie, East Kootenay. The *Leader* says, further: "It is proposed to drive a tunnel 150 ft. lower down the hill, and for this purpose a boiler and compressor plant will be installed. To tap the orebody now uncovered it will be necessary to drive this tunnel 575 ft., but other orebodies may be encountered long before this distance shall be reached. The ore is of good shipping quality." Another published statement is that: "About $10,000 has already been spent on development, and nearly that amount realized from ore shipped."

A published report of the production of metals by the Consolidated Mining and Smelting Company of Canada, Limited, during nine months ended March 31, last, is as under:

Metal.	Quantity	Value.	Per cent.
Gold .....Oz.	90,306	$1,851,272	44.30
Silver .....Oz.	1,761,431	1,042,847	24.95
Copper .....Lb	3,137,749	457,608	10.95
Lead .....Lb.	22,807,389	827,059	19.80
		$4,178,786	100.00

The percentage of gold recovered shows an increase in value as compared with that of the quarterly periods ended September 30, 1907, and December 31, 1907, respectively

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The forty-fourth annual list of graduates of the A. Van der Naillen School of Engineering, at Oakland, California, which was established in 1864, is a long one, indicating that the advantages it offers to students in civil, electrical, mining, and mechanical engineering; assaying and metallurgy; surveying; architecture, etc., are being extensively availed of. Graduates from various parts of California are numerous. Among those from other parts are. In mining. E. J. Jones, Sumpter, Oregon, and W. H. Brethour, Sidney, B.C. In assaying and metallurgy. J. C. Aconite, Rossland, B.C., J. N. McLeish, Nome, Alaska; C. A. Ross, Vancouver, B.C., and W. W. Rush, Ketchikan, Alaska. In surveying. W. L. Polson, Ketchikan, Alaska.

TRADE NOTES AND CATALOGUES.

From the Jeffrey Manufacturing Co., of Columbus, Ohio, U.S.A., have been received two catalogues, viz., No. 26, "Jeffrey Mine Fans," and No. 31A, "Jeffrey Pulverizers." The scope of the former is indicated in the following announcement. "The demand for a mine fan of higher efficiency at low speeds and against heavy resistance, although greatly stimulated by recent mine explosions, is one of long standing. This prompted us more than a year ago to institute a systematic and thorough series of tests for the purpose of ascertaining the exact curvatures and positions of vanes which would give the best results under the conditions peculiar to mine service. Adopting as a basis for these tests the most advanced principles already established by centrifugal fan builders throughout the world, we have succeeded in developing a mine fan of larger volumetric capacity at low speeds and against higher water gauges than any fan heretofore offered." The construction and operation of this fan are fully described and freely illustrated in Bulletin No. 26. The other bulletin above-mentioned is an 80-page pamphlet filled with illustrations and data relative to a great variety of pulverizers and other machines manufactured by the Jeffrey Co. Both publications are well worthy of perusal by all interested in the machinery they describe.

The Canadian Rand Co., Limited, of Montreal, Quebec, has issued a pamphlet containing 53 pages of illustrations and descriptions of "Compressed Air Appliances." This company states that it has been designing air power machinery for 20 years and that 80 per cent. of this class of machinery in use in Canada was designed and manufactured by it. The publication under notice gives information concerning compressed air in industrial work, and supplies information descriptive of numerous compressed air appliances and machines. Beside illustrations of the various machines, there are views of some of them in place where operated, these together conveying a good idea of the practical ways in which compressed air is being used. "Compressed Air Appliances" will well repay careful reading by those who can use air power machinery.

MUSSENS LIMITED.

Mussens Limited, of Montreal, Quebec, who are paying special attention to mine, mill, and smelter equipment, make the following announcement.

"During the last six months the facilities at the disposal of our patrons in our Mining Department have been largely increased.

"We have added to our staff a competent mining and metallurgical engineer who has had first-class practical experience in the design and manufacture as well as in the actual use of mining and metallurgical machinery in Europe, the United States and Canada.

"Our regular Engineering Department, which has been established for some time, can promptly render drawings, general plans and surveys to suit particular needs.

"The stock now carried in our Montreal warehouse includes: Jaw and gyratory crushers and crushing rolls, complete standard stamp mills and prospecting mills, hoisting engines, steel buckets and cars, wire rope, rock drill steel including hollow steel, safety fuse, Hardy patent picks, pulsometer pumps, Murphy rock drills.

"Attention is drawn to the extensive stocks of general supplies and the special equipment we have in Montreal, and to the large amount of heavy machinery our principals, Messrs. Fraser & Chalmers, Ltd., keep on hand at their factory in England ready for immediate shipment to every part of the world."

The Westinghouse Electric and Manufacturing Company, through its export department, has received a contract from the Dominion Iron and Steel Company, of Halifax, Nova Scotia, for a 500 h.p. electric generator, which will be used in the operation of one of the company's iron mines at Belle Island, Newfoundland.

COAL MINING NEWS.

On the night of June 19, three miners working in No. 2 mine at Coal Creek, near Fernie, were killed by a "bump" which occurred at the bottom of one of the sections, and which stopped the air from coming in. Gas quickly accumulated and the victims were asphyxiated.

It is reported that the Great Northern Railway Company has decided to extend its Crow's Nest Southern line from Fernie and Michel to Calgary, Alberta. The line now runs from Gateway to the Crow's Nest Pass Coal Company's mines at Fernie and Michel, a distance of 73 miles.

The Board of Examiners for the Nicola collieries for the unexpired portion of the current year is constituted of the following: Representing the owners, Hugh Gillespie, alternate, John Ovington; secretary, Benjamin Browitt. Representing the miners: Samuel Poole, first alternate, John Wilcock; second alternate, Joseph Williams.

The correspondent at Nelson of the Dominion of Canada *Labour Gazette* reported for June that "the Crow's Nest Pass Coal Company, Ltd., has for the present discontinued development work and changed its system of working No. 2 mine at Coal Creek, throwing out of employment approximately 200 men." The same journal's Nanaimo correspondent reported for his district: "The local coal mines are still working short time, but the mines at Extension have worked full time with good indications of continuing."

Under the provisions of the "Industrial Disputes Investigation Act, 1907," a Board of Conciliation and Investigation has been established to adjust differences between the Standard Coal Company of Edmonton, Alberta, and its employees. The board is constituted as follows: His Honour Judge H. E. Taylor, Edmonton, chairman; Frank B. Smith, Edmonton, and Frank H. Sherman, Taber, Alberta. Judge Taylor was appointed by the Minister of Labour in the absence of a joint recommendation from Messrs. Smith and Sherman. The differences referred to are said to relate to wages and general conditions, and the number of employees concerned is stated to be about 30.

MEN AND AFFAIRS.

E. A. Bradley, of Revelstoke, has returned to that town from a trip to New York.

Louis Pratt, of Sandon, Slocan District, paid Victoria a flying visit late in the month.

Alfred McMillan, of the Northport smelter, has been in Nelson for a week or two.

Hon. E. Dewdney, of Victoria, has returned from a visit to the Similkameen District.

B. A. Laselle has returned to Barkerville, Cariboo District, after having been in the East several months.

T. A. Rickard, of San Francisco, California, editor of the *Mining and Scientific Press*, is on a visit to Alaska.

Herbert Carmichael, provincial assayer, recently made another trip to Alberni, Vancouver Island.

E. E. Chipman, of Kaslo, gold commissioner for the Slocan District, was a visitor to Victoria during the month.

Col. J. H. Conrad is again at Windy Arm, southern Yukon, after having been on a long business trip to the East.

Hon. Alexander Henderson, commissioner of Yukon Territory, has returned to Dawson from a visit to Ottawa.

Mason T. Adams, manager of the Britannia Copper Syndicate, has returned to British Columbia from New York.

R. W. Coulthard has resigned as general sales agent for the Crow's Nest Pass Coal Company, with headquarters at Fernie.

Henry Bratnober left Whitehorse, southern Yukon, early in June, going down the Yukon River on his way to Nome, Alaska.

A. C. Garde, who lately opened an office at Prince Rupert, has been to Skidegate, Graham Island of the Queen Charlotte group.

Howard W. DuBois, of Philadelphia, Pa., is again in British Columbia, having arrived in Victoria, *en route* to Cariboo, on June 2.

James Cronin has gone to the Babine country, Skeena mining division, where he holds, under bond, some promising mineral claims.

H. H. Melville, of New York City, vice-president of the Dominion Copper Company, was a recent visitor to the Boundary District.

R. F. Tolmie, of Victoria, deputy minister of mines, made a trip to Prince Rupert and other northern points in the Province, early in June.

Geo. C. Tunstall, Jun., at one time representative of the Hamilton Powder Company in the Kootenay District, was a recent visitor to Victoria.

Anthony J. McMillan, managing director of the Le Roi Mining Company, Rossland, was on the coast for a few days about the end of the month.

Early in June Capt. John Hampson returned to British Columbia from a visit to England. He reached Victoria during the first of the month.

A. B. Palmer reached Whitehorse, southern Yukon, recently, after having spent three months in Ottawa and other cities attending to business matters there.

De Forest Ayers, agent, of Victoria, has been appointed the attorney in British Columbia of the Giant Powder Company, Consolidated, in place of Arthur A. Sparks.

Jay P. Graves, of Spokane, Washington, was in the Boundary during the month, on a periodical visit to the Granby Mining, Smelting and Power Company's smelter and mines.

H. W. Vance, of Windy Arm, southern Yukon, is in charge of the work of erecting and equipping with machinery and plant a concentrating mill, the location of which is on Windy Arm.

C. H. Dickie, of Duncans, has been spending the greater part of the summer at the Portland Canal Mining and Development Company's mining property in the Portland Canal district.

A. E. Smith, formerly of Grand Forks and now of Port Essington, Skeena District, has been looking over a mining property on Portland Canal, it is stated, for an English company.

D. D. Cairnes, of the Geological Survey of Canada, who is engaged in geological work in southern Yukon during the present field-work season, went down Yukon River lately on a visit to Dawson.

Phil. J. Hickey, of Seattle, Washington, U.S.A., formerly manager for the Minnesota Silver Company, operating the Ivanhoe mine, near Sandon, Slocan, was at Whitehorse, southern Yukon, recently.

O. B. Perry, general manager for the Guggenheims, reached Whitehorse early in the month on his way to Dawson. The *Star* states that he had with him nine mining engineers, some of them quite young men.

Bernard MacDonald, at one time manager of the Le Roi mine, Rossland, arrived in New York about the middle of June on a three weeks' visit. He intended returning to Guanajuato, Mexico, early in June.

I. R. Jacobs, formerly of Greenwood and later manager of the Jacobs mine in Cobalt district, northern Ontario, is in the Skeena country looking over mineral claims in which he and others associated with him are interested.

T. F. Sutherland, for some time practising as an assayer at Greenwood, Boundary District, has gone to Howson Basin, Skeena mining division, where he will have charge of the mineral claims of the Telkwa Mines, Ltd.

THE attention of the Lands and Works Department having been directed to the fact that town lots in a townsite named Prince Rupert, being a subdivision of Lot 642, Range 5, Coast District, situated on the mainland between the mouth of the Skeena River and Kaien Island, are being offered for sale, it has been deemed necessary to warn the public that the said townsite is not situated at the terminus of the Grand Trunk Pacific Railway, and is not the townsite which is owned jointly by the Government of British Columbia and the Grand Trunk Pacific Railway Company.

F. J. FULTON,
Chief Commissioner of Lands and Works.

Lands and Works Department,
Victoria, B.C., May 1st, 1908.

O. E. S. Whiteside, manager of the International Coal and Coke Company, of Coleman, Alberta, recently accompanied Dr. J. Bonsall Porter, professor of mining at McGill University, Montreal, on a visit to Princeton, Similkameen.

A. B. W. Hodges, of Grand Forks, Boundary District, general superintendent of the Granby Mining, Smelting and Power Company, recently made a trip to Rossland and Nelson, and afterwards visited Fernie, in the Crow's Nest Pass.

Maurice M. Johnson, of Salt Lake City, Utah, U.S.A., arrived in the Boundary district on June 22 in connection

with the resumption of operations at its mines and smelter by the Dominion Copper Company, for which he is consulting engineer.

Wm. Rowe, formerly superintendent of the Skylark mine, near Greenwood, is now in charge of development work at the Little Bertha, situated on the north fork of Kettle River.

G. E. Henderson is manager of the Bull River Power Company, which plans to install a hydro-electric power generating plant on Bull River, in Fort Steele mining division, East Kootenay.

A. G. Larson, superintendent of the Le Roi mine, was injured in a railway accident when approaching Rossland on his return from a holiday trip to the coast cities. Fortunately his injuries were not serious enough to disable him for many days.

W. H. Trewartha-James, general manager of the Tyee Copper Company, visited the west coast of Vancouver Island during the month. He was accompanied by J. L. Parker, a mining engineer well known in British Columbia and south-east Alaska.

Walter Harvey Weed, the eminent geologist for many years a prominent member of the United States Geological Survey staff, has been examining the Queen Victoria property near Nelson. He sent a carload of ore to the Northport smelter for a bulk test.

P. J. Rossa has been appointed manager of the Dominion Copper Company in the Boundary District, in succession to W. C. Thomas, who recently resigned and who is returning to Salt Lake City, Utah, U.S.A. Mr. Rossa had been assistant to Mr. Thomas for some time.

Fletcher T. Hamshaw, of New York, who is largely interested in hydraulic mining on one of the Atlin creeks, while on his way to Atlin to again engage in hydraulicking, met with an accident at Bennett, Atlin mining division, which resulted in his having a collar bone broken.

A. B. W. Hodges is stated to have promised the management of the Nelson fair that the Granby Company will make an exhibit of ores from its Boundary District mines, and smelter products from its works at Grand Forks, at the exhibition, to be held in Nelson next September.

Henry Collinson, formerly with the Tyee Copper Company, at its smelting works at Ladysmith, has gone to Argentina, South America, for the Famatima Development Corporation. This company owns what is stated to be the longest tramway in the world; it is 20 miles in length.

A. H. Gracey, of Nelson, was in Victoria on June 28 *en route* to Alberni, to examine a stamp mill installed years ago on a mining property in that district. The mill has since been purchased for the Nugget mine, Sheep Creek, Nelson mining division, in which Mr. Gracey is interested with others.

Chas. Biesel, superintendent of the Snowshoe mine, Boundary District, has been engaged at the Consolidated Mining and Smelting Company's big establishment at Trail, West Kootenay, during the latter part of the period during which work has been suspended at the Snowshoe, which will, it is expected, shortly be started up again.

Among those who during May and June accepted election as members of the American Institute of Mining Engineers were W. J. Watson, of Ladysmith, Vancouver Island, B.C., and William Harris, of Seattle, Washington, U.S.A. The list of those proposed for membership during the same months includes the following residents in the Northwest: Charles Norton Crary, Valdez, Alaska, George H. Dickson, Coleman, Alberta, and Anthony John McMillan, Rossland, B.C.

The wages for miners at Nome, Alaska, are $5 per day and board during the summer, and about $3.50 in winter. Mechanics and skilled workers in timbering mines and other mechanical engineering earn $1 per hour.