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# MINING RECORD

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## BRITISH COLUMBIA MINING RECORD

E. JACOBS,.....Manager and Editor

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## NOTES AND COMMENTS.

A local syndicate proposes to bore for coal in the bed of False Creek, at Vancouver.

A shaft on the Orphan Boy mineral claim, near Kamloops, is being sunk to a depth of 100 ft.

In 1907 the Provincial Government granted 426 coal prospecting licences as compared with 286 in 1906.

During 1907 the price of copper varied between a maximum of 26½ cents per lb. in March and 11¼ cents in October.

On and after January 23, 1908, the address of the Tyee Copper Company, Limited, will be "Bank of Montreal Building, Victoria, B.C. (P.O. Box 665)."

Work was resumed at the Granby Company's mines and smelting works late in December. The men accepted a lower scale of wages than that in force at the time of the general shut-down in November.

An extension of facilities for the treatment of lead ore and concentrates at the Consolidated Company's smelter at Trail will, so it is stated, obviate the necessity that has existed for the shipment to Europe of part of the output of the St. Eugene mine in East Kootenay.

The Diamond Vale Coal and Iron Mines Company expects to be shipping from its mine at Coutlee in a comparatively short time. A seam of coal of excellent quality is being opened and preparations are being made to maintain a steady production of marketable coal.

It is understood that the Le Roi Mining Company will shortly be mining ore from a vein farther south than any in its property hitherto worked. No particulars have been made public, but it is known that two cross-cuts are being driven at the 300-ft. level to reach the vein referred to.

During four weeks ended December 27 the production of coal at the collieries of the Crow's Nest Pass Coal Company totalled 84,282 tons (2,000 lb.). As there were in that period but 23 days on which coal was mined this gave an average production of 3,665 tons per day. The total production in 1907 was nearly 982,000 short tons gross. Reduced to tons of 2,240 lb. this gives an output for the year of 876,757 tons as compared with 720,449 tons in 1906. The 1907 production was disposed of as under, figures being approximate:

	Tons of 2,240 lb.
Manufactured into coke .....	322,000
Exported to United States .....	290,000
Sold in Canada .....	220,000
Used under collieries' boilers.....	44,000
<b>Total .....</b>	<b>876,000</b>

The coke manufactured totalled about 206,500 long tons, as against 189,385 tons in 1906.

Members of the Canadian Mining Institute will shortly elect officers for the ensuing year and members of the council for stated periods. Once again some Ontario members are endeavouring to carry out plans which many members resident in other provinces fear will, if these Ontario members gain their present ends, eventually lead to the disruption of the institute as a national, in contradistinction to a provincial, institution. So seriously is the present position regarded that the president now in office and four past presidents have jointly signed a circular letter to members submitting that "members, in voting for candidates for vacant offices, should see to it that the industries of the Dominion are adequately represented rather than that preponderance be given to any one industry or any one Province." Further, it is pointed out that a particular canvas "has been directed against two faithful and efficient officers of the institute, viz., the secretary, Mr. H. Mortimer Lamb, and the treasurer, Mr. J. Stevenson Brown." The *Mining Record* does not hold a brief for any candidate for office, but it is heartily in accord with the views of the gentlemen whose signatures are appended to the letter here referred to, that the best interests of the institute will be far more effectually conserved by re-electing the two executive officials named than in thrusting them aside in order to satisfy the ambitions of other men who may possibly be not so well suited for the particular offices these two have well and worthily filled. It would seem as if the western members of the institute have an important duty to perform—to assist the eastern members to preserve the national character of the institute, and this we think they can at the present juncture most effectively do by supporting only those candidates for offices and council who may be depended upon to continue the good work of the institute along similar lines to those heretofore successfully followed.

There were several incorrect statements included in Mr. H. Mortimer Lamb's article on "Mining in British Columbia," contributed to *Mines and Minerals*, of Scranton, Pennsylvania, U.S.A., and reprinted in last month's *Mining Record*, reference to which we purposely deferred until after we had verified information then in our possession, so that we might be the more positive in our expression of non-agreement with Mr. Lamb on these particular points. First, Mr. Lamb excepted the Slocan from those districts in which he said there were "signs of material activity and progress everywhere apparent." This did not do the Slocan justice by any means. Those who are familiar with the Slocan, which Mr. Lamb evidently is not, well know that in 1907 it made more material progress than in any other of several recent years. We need only mention here the Montezuma, Whitewater, Rambler-Cariboo, Ruth, Richmond-Eureka, Standard, Vancouver group, Hewitt, Lorna Doone, Arlington, and other mines that were active the greater part of the year, while there were literally scores of small properties upon which some work was done and many of which produced ore, some on a small scale and others in appreciably large quantity. Next, Mr. Lamb was duped into giving publicity to one or two of the well known fabrications of enemies of the Le Roi Mining Company. What authority had Mr. Lamb, we ask, for the assertion that "in order to keep the furnaces running the Le Roi ships (to its smelter at Northport) a great quantity of nearly valueless rock." If he can give any dependable evidence in support of this serious charge he should not hesitate to do so; if not he should publicly retract what we believe to be one of the falsehoods that certain persons, with set purpose of discrediting the Le Roi management and the Northport smelter from time to time circulate. One more statement we take strong exception to, viz., that the Le Roi No. 2 is in the West "the one notable exception in the long list of mismanaged British-owned properties." Did Mr. Lamb never hear of the Tye Copper Company? Did he ever when editing the *Mining Record* give that management unstinted praise? Did it not then and does it not still deserve all the credit ever given to it in the West, and more too, for its enterprise, its persistence despite occasional discouragement in carrying on a thoroughly legitimate mining and smelting business, and making it a financial success? We agree that the management of the Le Roi No. 2 has been, and is, good, but there are others, and Mr. Lamb should know better than to assert there are not. If Mr. Lamb should again feel impelled to write on British Columbia mining matters we shall hope for the exercise of more care on his part. There are more than enough unreliable "penny-a-line" writers contributing to newspapers rubbish supposed to be British Columbia mining news, without his doing similarly, even in a small measure, to influential mining journals.

## THE MINERAL PRODUCTION OF BRITISH COLUMBIA IN 1907.

(Continued from last Month.)

**F**URTHER INFORMATION concerning the mineral production of British Columbia in 1907 is contained in a brief review of the several mining districts of the Province, this being a continuation of the article which appeared in last month's issue of the *MINING RECORD* under a similar heading to that printed above. The additional particulars, held over, follow:

### PROGRESS AND PROSPECTS.

Concerning the chief developments of the year and the prospects of the mining industry of the Province for 1908, the following comments are made:

**Cariboo.**—The announced decision of the Guggenheims' companies not to proceed further with construction of their water supply system, which was undertaken with the object of bringing in a greatly increased supply of water for washing the enormous gold-gravel beds in Quesnel division on which J. B. Hobson had been working about ten years, has caused general disappointment throughout the district. The Guggenheims' engineers are stated to have reported unfavourably regarding average gold values obtained when testing the gravel, so expenditure on construction has been stopped. Total gold recovery from this property from 1897 to date is \$1,062,700. In the Cariboo division—the "district" includes three "divisions," viz., Cariboo, Quesnel and Omineca—hydraulicking continues to give fairly satisfactory results on the whole, but deep-drifting has not yet proved successful. Ordinary placer mining operations in Omineca were unimportant.

**Cassiar.**—Atlin, Liard and Skeena are in this district. In Atlin gold dredging has been abandoned; placer mining by individuals has steadily decreased; hydraulicking by the larger companies in 1907 resulted in a smaller recovery of gold than in 1906. In Liard division the Berry Creek Mining Company's results from hydraulicking on Thibert Creek were much below expectations, slides of top dirt into the pits having prevented gravel washing during part of last season. In Skeena division, a few thousand tons of ore were shipped to the smelter at Hadley, southeast Alaska, from the Outsiders group, on Portland Canal, and developments on two or three other properties are promising. Inland in this division, further prospecting was done in Telkwa, Bulkley and Babine sections, but production will not be practicable, neither of coal nor metalliferous minerals, until after the Grand Trunk Pacific railway shall have been constructed. Many prospectors have been attracted to the Queen Charlotte Islands, also in Skeena division, a Japanese company having opened up a large deposit of ore at Ikeda Bay and shipped thence to the Tyee Copper Company's smelter, at Ladysmith, about 700 tons, having a comparatively high value in copper and gold.

**East Kootenay.**—From the St. Eugene and Sullivan group mines came the greater part of the lead production of the Province for the year, also a proportion of the silver. The Crow's Nest Pass Coal Company's mines contributed about 553,000 tons of coal, beside about 323,000 tons made into 206,000 tons of coke. This company has made financial arrangements for facilities to considerably increase its output of coal and coke, for which markets are available. The Pacific Coal Company made much progress with the opening up and equipment of its colliery near Hosmer, also in the Crow's Nest Pass. Several coal properties in the Upper Elk River district were prospected and preliminary surveys were made of routes for proposed railways to provide transportation facilities. Placer gold mining operations in East Kootenay were again small. The installation of an Elmore Vacuum Oil Concentration plant at the Giant mine, Northeast Kootenay, is in hand.

**West Kootenay.**—Ainsworth camp had several mines at work; some 1,100 tons of silver-lead ore were shipped and important development work was done. At the Blue Bell, across Kootenay Lake from Ainsworth, development was discontinued last summer pending completion of the 200-ton concentrating mill in course of erection, sufficient ore having been made accessible to run the mill for about five years. On the south fork of Kaslo Creek mining was continued and a concentrator operated.

In the Sloean, at Whitewater there was milled a lot of ore from which silver, lead, and zinc concentrates were produced. The Rambler-Cariboo resumed production after completion of the most extensive development work yet done in the district, and the outlook is now favourable for good results. No information has yet been received relative to progress at mines around Sandon. Another stage has been reached in the Sloean Star extra-lateral rights litigation, the Full Court having reversed the previous Supreme Court decision, the latest judgment being against the Byron N. White Company, defendants, but an appeal is to be taken to the Supreme Court of Canada. Around Silvertown, the Hewitt, Vancouver group, and Standard each made good progress both in development and production. In Sloean City division, several mines were active, notably the Arlington and Ottawa, while the Westmont, a new property, gives much promise.

Of the mines in Nelson division the La Plata made the best record, its output of silver and lead having been appreciably large. The Silver King (copper-silver), Eureka and Queen Victoria (copper) were also shippers in quantity. Of the gold-quartz mines, the Granite-Poorman and Fern, near Nelson, and the Arlington, Queen, Second Relief and Kootenay Belle, in the Eric-Salmo section, were all producers, but the Ymir was again disappointing. The Hunter V. sent out a considerable tonnage of silver-bearing lime ore.

Rossland mines made a production about equal to

that of 1906—something like 280,000 tons, practically all from the Le Roi, Centre Star-War Eagle group, and Le Roi No. 2. Substantial improvements and additions to the machinery and plant of the Centre Star-War Eagle mines were made by the Consolidated Mining and Smelting Company of Canada. There was no interruption to operations in this camp, the miners having voluntarily accepted lower wages after the slump in copper prices.

In Revelstoke and Lardeau sections mining was not active. The largest producers were the Eva (gold) at Camborne, and Silver Cup (silver-lead) in Ferguson camp. The Broadview, near Ferguson, was extensively developed, but did not ship any ore. The Silver Dollar, near Camborne, completed a small stamp mill and commenced crushing ore. Placer mining for gold was continued in the Big Bend country north of Revelstoke, but the total recovery there was not large.

Lillooet.—Little worth noting was done in this district. Placer gold mining by individual miners has dwindled to small proportions, and dredge mining has been discontinued owing to unsuitability of the dredges used for the work of dredging in the Fraser River.

Boundary.—Published figures give a production of about 1,148,000 tons of ore, contributed in the following approximate proportions: Graubly Company's mines, 614,000 tons; British Columbia Copper Company's mines, 243,000 tons; Dominion Copper Company's mines, 156,000 tons; Consolidated M. and S. Company's Snowshoe mine, 135,000 tons. There was little production in November and none in December, the mines having been closed on account of the low price of copper and high labour and materials costs. Although not assigned as one of the reasons for the suspension of work, there is little doubt the general inefficiency and aggressive unreasonableness of many of the employees was another factor taken into account when the big companies decided to suspend operations for a time. Developments at the several larger mines show that there continues to be an abundance of ore available, consequently preparations for still greater production were either in progress or authorized when the shut-down was decided upon. The small high-grade mines of the district have not been up to expectations of earlier years. Work has been stopped for the winter in Franklin camp, north fork of Kettle River, where large bodies of ore have been located. Up the west fork of Kettle River small shipments of high-grade silver gold ore were made, but production will remain small until after railway transportation shall have been provided. At Camp McKinney, the old Cariboo-McKinney gold-quartz mine was reopened but was not worked for many weeks.

Yale.—The Stenwinder mine at Fairview, Okanagan, late in the year was reported to have made an important strike of gold-quartz ore at its 500-ft. level. In Hedley camp, lower Similkameen, operations were continued at the Nickel Plate gold mine, but no par-

ticulars of results have been received. In 1906 production was about 35,000 tons of ore running about \$12 per ton.

Other Similkameen operations were as follows: At Princeton the development of the coal measures of the Vermilion Forks Company was continued and a small production of coal made. No noteworthy progress was made on Copper Mountain claims, neither as to work nor endeavours to sell them. On Bear Creek, in the Tulameen section, developments were encouraging at both the group of claims under development by a Vancouver company, and those under land to the Graubly Company interests. Some interest was shown in the old placer gold creeks of the district, and there was talk of fresh efforts to produce platinum.

In Nicola Valley coal mining made a gratifying advance. At the Nicola Valley Coal & Coke Company's property two seams were opened, a plant installed, railway connection established, and the shipment of coal commenced. The Diamond Vale Company also made progress with the development of its property and installation of a plant, and encountered coal in one of its shafts.

Little calling for notice occurred in the several other interior divisions—Yale, Ashcroft, Kamloops and Vernon.

Coast.—At the Britannia Copper Syndicate's Britannia mine on Howe Sound much development and diamond drill work was done, with generally encouraging results. The mine camp was remodelled, a saw mill put in, a new 25-drill air compressor installed (driven by a Pelton water wheel and supplying the mine with compressed air through 18,000 ft. of 8-in. pipe), and the concentrating mill rearranged, the milling practice having been changed from a fine- to a coarse-crushing plant with a gradual reduction on intermediate jigging operations on sized products.

Off the mainland the principal work was done at Mt. Sicker, Vancouver Island, where the Tyee mine continued work all the year, shipping its ore to Ladysmith. The Lenora, in the same camp, was reopened after having been unworked for several years, and shipped ore to Ladysmith until the low price of copper considerably reduced profits, when shipping ceased for the time. The Richard III, adjoining the Tyee, shipped between 3,000 and 4,000 tons of ore, also to Ladysmith. Claims were worked at Koksilah Mountain, Sooke, and Bowen and Valdez Islands, and from all these places more or less ore was sent to the Tyee Copper Company's smelter for treatment. On the west coast of Vancouver Island, the Indian Chief group at Sidney Inlet was extensively prospected by a Seattle, Washington, company, with encouraging results in quantity of ore of good grade uncovered; while at Quatsino Sound, the June group had the attention of some Pittsburg men, who are putting in half-a-dozen miles of railway between the property and tide water.

General.—Progress on the whole was substantial,

though the serious decline in the price of copper arrested it in some districts towards the close of the year. Eight mining companies declared dividends aggregating about \$2,500,000; other companies and partnerships also made substantial profits, but amounts were not published. There was a marked revival of mining in Ainsworth and Sloean districts, with numerous small mines either already shipping silver and lead ores or preparing to do so. The year's loss as compared with 1906 of nearly \$2,000,000 in value of metalliferous mineral production was more than compensated for in the increase in coal and coke. The prospects for the latter are decidedly favourable, with a very active demand, and new properties being opened on Vancouver Island, in Nicola Valley, and in the Crow's Nest Pass district. While both zinc and iron have remained practically unproductive, efforts are being made to utilize these mineral resources. A plant is being established at Nelson for the electric reduction of zinc ore, but its commercial success remains to be demonstrated. Under instructions from the Dominion department of mines, Einar Lindeman, a Swedish iron expert, spent six months examining iron ore occurrences on Vancouver and Texada Islands. Of many showings visited he pronounces four promising—three on Vancouver Island and one on Texada. Quality of ore is considered satisfactory, but extent remains to be proved. Mr. Lindeman's report will be awaited with much interest on the coast.

#### MINING INFORMATION FOR SCHOOLS.

**A**CCURATE INFORMATION regarding the mineral resources of British Columbia is not, so we are informed, available to the pupils of the public schools of the Province through the medium of the school readers in use in them. While we have not examined the books to ascertain what information on this subject they contain, we do know that some time since an application was made to the editor of this journal by a public school teacher for some data concerning mining in this Province required for the enlightenment of certain pupils, and later it came to our notice that the information thus supplied was passed on to several other teachers, who were glad to have it in easily accessible form. We conclude, therefore, that the subject matter of the following letter, contributed to the *Canadian Mining Journal* by Mr. J. B. Tyrrell, a well known mining engineer resident in Toronto, Ontario, may well have the careful attention of the educational authorities of this Province, with a view to their adopting a similar course in regard to British Columbia to that suggested for Ontario. Mr. Tyrrell wrote:

"Probably within a short time the Government of Ontario will revise its readers in use in the public schools, or possibly it may prepare a new set of readers altogether. In either event nothing could be more appropriate than that a goodly number of articles should be included in them descriptive of

the mines and mineral industries of Canada, with accounts of their discoveries, growth and progress up to their present condition.

"An account of the discovery of nickel at Sudbury and the development of the nickel industry up to its present enormous proportions would make a most interesting and instructive story, while the history of Silver Islet should be known to every child in the Province. Relations of incidents in the lives of prospectors who have travelled in canoes, and on foot with packs on their backs, through the northern forest would be far more entertaining to children than the trivial and mendacious stories of travel and adventure which are now current among the people, and especially among the children.

"The value of a large part of Canada must ultimately depend not on its agriculture, fisheries or forest resources, but on its production of mineral wealth; so that mining is and must always be in increasing measure an industry of the first importance to us.

"In no way can the people of the country be educated to appreciate the importance of the mining industry better than by informing them of it from their very earliest years through the medium of the school readers. The children might then grow up ambitious to emulate the exploits of some of our successful prospectors, who have travelled through the wilderness with the constant aim of finding valuable deposits of ore, instead of having their thoughts foolishly centred on bears and wolves with the loveable attributes of the theatrical villain and the appearance of the woolly denizens of the toy shops.

"Accurate information about our own mines and mining possibilities and about the hazards of the search for ore, so imparted to the children through the school readers, would form a basis for a sound knowledge of Canadian mining conditions, and of the vast importance of the mining industry to the general progress and welfare of the Dominion, and at the same time would fortify them against the blandishments of the men who endeavour to get their money on the fraudulent pretext that they are investing it for them in mining enterprises.

"I trust that not only Ontario, but all the other provinces in the Dominion, will see to it that the children are taught something about the mines and mining possibilities of Canada, and to that end will incorporate in their school readers, interesting and accurate accounts of their mines and mineral deposits."

The "Vancouver" brand of Portland cement, made on Vancouver Island, is guaranteed to meet the requirements of both the Canadian and the American Society of Civil Engineers.

The Elwood Tinworkers Gold Mining Company, which has been operating the Silver Dollar claim, situated near Camborne, northern Lardeau, is stated to be in financial difficulties and that liquidation is to take place.

## LEAD MINING IN BRITISH COLUMBIA.

## Particulars of Operations in 1907.

**L** EAD MINING in British Columbia in 1907 is dealt with in the following review, which was prepared for the *Nelson Daily News* by a contributor well informed on this subject and consequently qualified to give particulars of the progress made in this branch of metalliferous mining during the year under notice.

## PRODUCTION OF LEAD IN 1907.

With moderate estimate for December production, the output for the year will be:

	Lb.
Smelted by Hall M. & S. Co.....	6,329,248
Smelted by Consolidated M. & S. Co...	21,686,078
All other smelters .....	10,631,036
Exported in ore to U. S. and Europe...	7,900,990

Total lb..... 46,547,352

This is equal to 23,273½ tons.

The production in 1906 was 26,389 tons, being somewhat more than 3,000 tons in excess of the estimate for the present year.

The chief shipping mines were: St. Eugene, Sullivan, La Plata, North Star, Silver Cup (Ferguson Mines, Ltd.), Whitewater, Whitewater Deep, Rambler-Cariboo, Lone Bachelor, Lightning Peak, Lorna Doone, Last Chance, Richmond, Spokane, Trinket, Vancouver, Arlington (Erie), Arlington (Slocan), Colonial, Sunset, Idaho, American Boy, Beatrice, California, Emerald, Maestro, Payne, Black Diamond, Montezuma, Queen Bess, Standard, Reco, Tecumseh, Adams Group, Emily Edith, Fergus, Gallagher, Mountain Con., Mammoth group, Flint, Province, Hartney group, Libby, Wakefield.

The price of lead in the London market ruled exceptionally high, in the neighbourhood of £20, for ten months of the year, reaching a maximum of £21 5s. on June 14. In November it fell rapidly and on December 16 reached a minimum of £13, a fall since followed by a reaction to £14 12s. 6d. per long ton.

The Dominion bounty was quiescent from April 25, 1906, to December 2, 1907, when fractional payments began to be made and these at times since have reached 64 cents per 100 lb., the bounty operating practically as a guarantee that the price of lead to the producer will not fall below £16 per long ton.

With present range of prices it is probable that bounty disbursements for the seven months remaining of the period will aggregate \$100,000 to \$150,000.

The lead stacks of the Hall Mines smelter at Nelson were blown out on September 16, and are still idle.

About 400 tons of lead, practically the amount produced in excess of the requirements for Canadian consumption, has been exported in ore. The bulk of this has gone to Europe.

With the recent marked decline of London prices, exports have ceased.

The price of silver has steadily fallen throughout the year, a recent quotation having been 52½ cents. As lead is but a by-product of high-grade mines, including most of those in the Slocan and Lardeau, the price of silver is the decisive factor in the question of their operation.

The decision of the United States board of appraisers to whom was appealed the ruling of the secretary of the treasury in regard to duty on zinc ores, which was that "Silicate and carbonate of zinc shall henceforth be classified as calamine, and may be imported free into the United States," is still nominally in force, but an appeal having been taken therefrom, the deposit of duty, subject to final decision of the point involved, is required by the United States customs authorities, and this circumstance operates to shut off nearly altogether such shipments for the time being.

The smelter of the Canadian Metal Company at Frank has not been in operation within a year.

A plant for the treatment of zinc ores by an electrical process is under construction at Nelson by a company represented by Robert Irving and Frederick T. Snyder, M.E. The successful operation of this plant will be of great value to the mining districts tributary to Kootenay Lake, in which many mines are found, incapable of profitable working except by some system under which the value of zinc contents can be recovered.

## SOME LEAD-PRODUCING MINES.

Aside from the St. Eugene and the Sullivan mines, which are apparently capable of keeping up their present high rate of production for many years to come, the mines that have attracted some attention during the year as silver-lead producers are the La Plata, under the management of Bruce White; the Whitewater and Whitewater Deep, under the management of John L. Retallack; the Ferguson mines, George Alexander, manager, and the Rambler-Cariboo, captained by W. E. Zwicky. In the last-mentioned the workings connecting the long tunnel with the old workings above were completed early in the year, and the mine is now reported to be in fine shape for heavy shipments when the price of metals shall be favourable.

The historic Blue Bell on, Kootenay Lake, has undergone, at the hands of S. S. Fowler, thorough rejuvenation and is understood to be prepared for the production of a large tonnage of silver-lead and zinc ores.

The Vancouver mine, in Silverton camp, now under lease to the Le Roi No. 2 Company, has been a heavy shipper of high-grade ore.

The old Montezuma mine and mill, on the south fork of Kaslo Creek, has been rehabilitated and operated during the year by Henry Geigerich and has made considerable shipments of concentrates of good grade.

The Lucky Jim, at Bear Lake, has had much de-

velopment work done in it, and is more than ever the banner zinc mine of the Dominion.

#### OTHER PERTINENT MATTERS.

Development work on the Wagner group, located on Hall Creek, Duncan River, carried on last summer, has uncovered an immense deposit of ore of excellent grade.

An urgent appeal has been made to the Dominion and Provincial governments for expenditure upon the river and road connections necessary for the marketing of the ore.

The question of the rates of wages paid for various lines of work in the St. Eugene mine having been under agitation for some time, steps were taken during the summer to bring the matter before a conciliation board, under the provisions of the Lemieux Act. The board, consisting of P. E. Wilson, judge of the county court; J. A. Harvey, Cranbrook, and S. S. Taylor, Nelson, went very fully into the case and made a report thereon.

The recommendations are not enforceable by any legal means, but the report is the result of so much investigation and the unanimous finding of a body so thoroughly competent, that any attempt to better it would be hopeless.

It may be hoped that for a long time the rates suggested will be accepted by all parties, with the result that the labour troubles that have done so much to disfigure our annual summaries of results accomplished in our mining camps and smelter towns will disappear.

#### EXTENSION OF LEAD BOUNTY ASKED FOR.

At a meeting of the Nelson board of trade, held on December 12, among other important business considered was the subject of extension of the period during which payment shall be made by the Dominion Government of the bounty on lead produced in Canada. Louis Pratt, of Sandon, submitted for the endorsement of the meeting the following memorial to Hon. Wm. Templeman, Dominion minister of mines, this having already been numerously signed by mine owners, managers and others actively interested in the lead mining industry:

"We, the undersigned, who have been producers of lead ore since the inception of the Lead Bounty Act, respectfully address you, as representing the mining industry of the Dominion, and request your favourable consideration of the following memorial, and further, that you favour us by bringing the same to the attention of the Right Honourable the Premier and your colleagues of the cabinet:

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

"2. That such results have been produced by a relatively small expenditure, as was anticipated, and as was represented when the original request for consideration was made to the Government. Out of \$2,500,000 originally voted to be expended in the

period of bounty terminating June 30 next, but \$616,976.02 have been expended up to December 1, 1907.

"3. That on account of the high tariff on lead ore and its products, still imposed by the United States government (which it was anticipated would have been reduced ere this), of the recent imposition by said government of a prohibitory duty on our zinc ores, a product of our lead-bearing veins, thus depriving us of a source of revenue and of the fact that the lead consuming capacity of Canada has not increased proportionately to our output, since the inception of the bounty, we shall at the expiration of said bounty period, be still unable to rely on a stable minimum price for our lead, sufficient to justify its production in the form of ore and the large expenditures on exploration and development work necessary to maintain our mines and with them the entire lead industry of Canada.

"4. That without such a stable minimum price we cannot produce our ores, during periods of low prices in the world's market, which governs the market of Canada and with such intermittent production the inducement to expend the necessary large sums in exploration and development will cease to exist, consequently the present ore reserves in our mines will be exhausted and with them the lead mining industry.

"5. That with the United States tariff and the consuming capacity of Canada as at present, the necessary stable minimum price can only be assured by a continuance of the present lead bounty or by an extraordinary increase in the existing Canadian tariff on lead and its products.

"The undersigned therefore respectfully request that the Lead Bounty Act be extended for a further period of five years, with an expenditure not to exceed \$500,000 in any one year."

T. G. Procter moved that a resolution, carefully worded, be adopted, embodying the views of the memorial.

J. J. Campbell seconded, asking, however, that sight should not be lost of the fact that a tariff on lead would be the more logical way of treating the matter.

This passing, Messrs. T. G. Procter, J. J. Campbell and L. Pratt drew up the following resolution to be presented at the annual convention of the Associated Boards of Trade of South Eastern British Columbia for further endorsement:

"That this board approves of the petition which has been signed by all the principal lead producers of this section, asking the Dominion Government to extend the lead bounty for another period of five years after the expiration of the present term, recognizing that the attitude of the government is more favourable to this method of relief than to the readjustment of the tariff, which this board has always felt and still maintains would be the most effective assistance to placing both the local lead mining and smelting industries upon a firm basis.



"That this board recognizes that with the present condition of the markets there is danger of a number of producers being compelled to close down, with a disastrous effect upon the commercial interests of this section of the country, and that a copy of this resolution be forwarded to W. A. Gallihier, M.P., with a request that it be communicated to the proper authorities and that he use his endeavours to obtain the granting of the petition, and that a copy of this resolution be sent to the boards of trade belonging to the associated boards of trade, with a request for their co-operation, and that our delegates be instructed to endeavour to secure the passage of a similar resolution at the annual convention of that body."

CRANBROOK BOARD OF TRADE AND LEAD BOUNTY.

On December 16 the board of trade of the town of Cranbrook, East Kootenay, also unanimously adopted a resolution requesting the Dominion Government to extend for a further period of five years the operation of the Lead Bounty Act. In support of this resolution the following memorandum of reasons for such extension was forwarded to Ottawa:

"The smelting works of the Sullivan Group Mining Company at Marysville, on the North Star branch of the Canadian Pacific Railway (Crow's Nest Pass branch), 14 miles from Cranbrook, have been completed, equipped and put in operation within the last three years. Prior to that a large expenditure had been made on smelting works at that point, but the work was discontinued and the project practically abandoned. The Sullivan mine, the property of the company, is the producer of a low grade ore, difficult to treat on account of excessive sulphur and zinc contents. At the present moment there is commonly reported to be in sight in the mine 20 years' supply of ore for a smelter of the capacity of 100 tons per day. Under the encouragement afforded by the bounty the smelter was completed and has been operated so far, and through the introduction of the Huntington-Heberlein process, the first to be installed in Canada, a metallurgical success has been made of the treatment of this ore. Two small towns, Marysville and Kimberley, each with a population of several hundreds, have sprung up in connection with mine and smelter. Great progress has also been made in the demonstration of the capacity of the surrounding land for agricultural purposes, and a considerable population, ranchers and farmers, is growing up around these works. Marysville, moreover, is at the portal of the St. Mary's Valley, a district, believed to be of great promise as a mineral producer, and the continued operation of the mine, smelter and branch railway is essential to the development of this new district. The Sullivan Company lately have had the benefit of the extraordinarily high prices prevailing in the world's market for lead, but these prices have suddenly fallen to a low level, with the prospect that low prices may prevail for some years. We of course have reason to fear that the business that has been carried on lately on the basis of about

£20 for lead will be impracticable with lead at £12 or less.

"The town of Moyie, at which the St. Eugene mine is situated, is but 20 miles from Cranbrook, and has supported, since the bounty period began, a thriving population of several hundreds. We understand that the grade of ore in the St. Eugene mine is no longer what it has been in the past and even that property is liable to be seriously handicapped if the bounty now ceases.

"We recognize that bounty provisions are in their nature temporary and terminable, but in view of the fact that the Government have been fortunate in the occurrence of a period of very high prices for lead, thereby cutting down the expenditure they had contemplated in the payment of bounty to about one-third or one-quarter of the amount estimated we think that it could well afford to make, and would be justified in making, the extension of the period now asked for.

"The towns of Marysville, Kimberley and Moyie are important tributaries of Cranbrook; the country is new and development has but begun. Should anything occur to bring about the suspension of the Sullivan or St. Eugene mines a great setback would be given to our three great staple industries—mining, lumbering and agriculture.

"We strongly urge that the request contained in our resolution be complied with.

"C. H. DUNBAR,  
"Secretary Cranbrook Board of Trade."

Announcement has been made that the Canadian-American Coal and Coke Company is making preparation to build 240 coke ovens, put in a coal-washing plant of 1,000 tons daily capacity, and substitute a compressed air haulage system for the rope and horse system it now employs. The installation of an electric lighting plant and other improvements are also included in the comprehensive plans formulated by General Manager S. M. Moore. The company has been operating its coal mine at Frank, Alberta, about seven years. Latterly its output has been up to 1,000 tons a day, and an increase to 1,500 tons daily within a year is confidently expected.

It is proposed that a party of from 50 to 100 university students, chiefly those taking a scientific course in the colleges of Great Britain, shall make an eight weeks' tour of Canada. The intention is that the students shall visit numerous industrial plants in various parts of the Dominion so as to give them an adequate idea of the industries established and in operation. Lord Strathcona, high commissioner for Canada in London, is president of the committee having this matter in hand, and Sir Wilfred Laurier, prime minister of Canada, one of the patrons. The secretary, a young Canadian engineer resident in London, was in British Columbia lately in connection with this proposal.

## MINING IN THE KOOTENAY DISTRICTS IN 1907.

A Review of the Year's Operations and Results.

**E**AST AND WEST KOOTENAY contribute largely to the mineral production of British Columbia year by year. Both in the metalliferous minerals and coal and coke these districts are productive. Of the daily newspapers of the Province the *Nelson Daily News* is always the most painstaking

had the Northport smelter, which had been idle for some time, been brought into a condition when it was able to take the ores of the Le Roi mine, when trouble arose in connection with the supply of coke, this necessitating a curtailment of ore shipping. Unlike the Boundary miners, those of Rossland camp caused no shut down, but voluntarily accepted the old rate of wages after the price of copper had fallen considerably. But that very fall in the price of metal had its effect upon shipments, there being no longer the same inducement to ship in large quantities, for



SURFACE WORKS OF SOME ROSSLAND MINES.

(1) Le Roi Head Works over Combination Shaft.—(2) Le Roi Surface Works on Black Bear Flat.—(3) Le Roi No. 2 Co.'s Concentrating Mill.—(4) Le Roi No. 2 Co.'s Josie Surface Works.—(5) Le Roi No. 2 Co.'s No. 1 Mine Shaft House.—(6) War Eagle Mine Head Works.

ing and enterprising in reviewing the progress made by the mining industry and showing the substantial results achieved. Its annual summary for 1907, as relates to the Kootenay country, is here reprinted in the *Mining Record*:

### ROSSLAND CAMP.

During 1907 the two principal mines of Rossland camp—the Centre Star and Le Roi—were worked under peculiar conditions. The Le Roi Mining Company at the beginning of the year had resumed shipping ore to its own smelter at Northport; a few thousand tons, however, being sent to Trail in completion of its contract with that smelter. Hardly

the supply of copper had already overtaken the demand.

In January last the Centre Star had not been thoroughly organized upon the basis necessary for the continuous supply of copper ore on a scale essential to cheap reduction at the Trail smelter. This had been accentuated by the withdrawal of the Le Roi from the suppliers of that reduction works. Hence it became necessary to augment the supply from the Centre Star so as to make up the deficit caused by the withdrawal of the Le Roi ore. Not only had development to be pushed, but the means of shipping the ore had to be increased, so one of the largest hoists in

Canada was installed. The engine of this hoist is a double reversible Nordberg Corliss, having steam cylinders 28 in. in diameter and 60 in. stroke. The cylindrical drums are 10 ft. in diameter by 36 in. face, turned for 3,000 ft. of  $1\frac{1}{4}$  in. rope and capable of lifting a total unbalanced load of 20,000 lb., including rope, from a 70-deg. incline shaft at a speed of 2,000 ft. per min. Friction clutches and brake for each drum are operated by steam power.

The hoisted ore is passed through the Farrel ore crusher, classified into coarse and fine, and conveyed by link belts into the sampling bins. On the way the ore is hand sorted, during which process about 15 per cent. waste is eliminated. With this powerful engine in operation and the scheme of development completed, the Centre Star company was able, about the middle of the year, to begin to ship to its smelter on a larger basis. Daily 600 to 700 tons can be passed through this machinery, and this capacity can be increased. Unfortunately, hardly had the company finished its long and expensive work, when metal prices began to tumble and there no longer existed the same incentive to heavy shipments. However, the total output of the Centre Star is particularly good, considering the conditions.

The third important mine in the Rossland camp is the Le Roi No. 2. Now, whereas, in the Le Roi and Centre Star as depth has been gained copper values have decreased and the gold in the ore is between 0.33 and 0.50 oz. per ton, the Le Roi No. 2 has kept its values, both copper and gold, although lying contiguous to the properties named, separated merely by a dyke. Generally speaking, the ore bodies in the Le Roi No. 2 are more irregular and smaller than those in the properties already mentioned, but, at the same time, their values have been higher. In connection with the Le Roi No. 2 is a mill originally planned for the reduction of ore by means of water and oil, but which is now used with water only. The great reduction in smelter charges at Trail, which have decreased since its inception from \$13 and \$14 a ton to \$3.50, have rendered the necessity of milling less pressing. At the present time the Le Roi No. 2 is considered about the best paying property in the camp.

But in noting the progress made by the three principal mines in the camp, the whole of Rossland has by no means been covered. As the shipping list will show, there have been other mines which have sent shipments of ore to the Trail smelter. Had copper retained its values of the earlier portion of the year, it is undoubted that there would have been a far larger aggregate tonnage of ore shipped from such properties and far more development work done than has proved to be the case. The shipments made, therefore, must be regarded as trial lots, and if satisfactory returns had continued to be received, there would have been justification for more serious work.

It is noteworthy that the workings of the Centre Star have now reached 2,000 ft. below the surface; that is to say, they are getting down to the level of

the Columbia River at Trail. It has been found that from the surface down there has been, generally speaking, a lessening in the value of the ore, although from time to time in unexpected directions richer shoots have been met with, notably in the cases of the War Eagle, Centre Star and Le Roi last summer. It is, however, the theory of experts and geologists that below this level will be found a zone of secondary enrichment. Hence the development below this 2,000 ft. level, which must shortly take place in these mines, will be watched with great interest.

#### TRAIL.

It will hardly be necessary to do more here than note the principal features in the progress made during the past year at the Consolidated Company's smelting works at Trail.

To the copper side of the works the two chief shippers are the Centre Star of Rossland and the Snowshoe of the Boundary, although the smaller quantities of ore coming from the Le Roi No. 2 are of some value to the smelter. Economical reduction can only be carried on if the supply of ore, flux, and fuel is large and continuous. Here the smelter has been greatly handicapped throughout the year. First, in the defection of the Le Roi at a period when the development of the Centre Star had not been completed. Then followed difficulty as to coke, for months the smelter running with but a day or two's supply of fuel ahead. Later came the shut-down in the Boundary, losing to the works the ore shipments from the Snowshoe.

On the lead side, matters have been somewhat better, although there is not a property in the whole of the Slovan which to-day would guarantee, week in and week out, for a year or two in advance, a continuous supply of ore. Yet without such a supply it is impossible for a smelter to be run economically. Hence it is not surprising that the Trail smelter, not satisfied with its holdings in East Kootenay, has been opening up another property in the Slovan, the Richmond-Eureka.

The cost of reduction has been greatly lessened by improvements and extending of the Huntington-Heberlein ore roasting and converting process.

#### THE SLOVAN.

That which immediately strikes the observer looking at the history of mining in the silver-lead district during 1907 is the rise of Silverton to importance. This has been mainly due to the great improvements undertaken and now being pushed to completion upon the Vancouver and Hewitt mines.

The Vancouver was taken in hand by the Le Roi No. 2 of Rossland. The development of the property at that time had not been extensive. Then it had no mill, so the Wakefield mill was leased for a period ending on March 1, next. A system of development was started and a section of the vein thoroughly prospected until the management are now in a position to declare that undoubtedly they have a mine and are justified in building a mill for themselves. The Vancouver is a silver-lead-zinc mine. It had

been shipping its lead concentrates to Trail, allowing its zinc concentrates to accumulate until the end of the year, when quite recently a shipment of the latter was made to Antwerp, Europe. Development has been carried on down to the fourth level, but the ground below and on the other sections of the vein has not been opened up. There is, though, no reason to doubt that the conditions which have obtained in this section of the lodes between the first and fourth levels will continue downwards and in extension of the strikes. The Vancouver mine covers a group of claims through which the veins run for some distance, and not only has this property a large quantity of ore blocked out, but as well a large extent of similar ground to prospect. Arrangements are now being made to obtain the necessary capital to operate this mine upon the larger scale justified by the results of the work done.

Next to the Vancouver, in the same camp, is the Hewitt. This property was developed by M. S. Davys. The results of his work were so satisfactory that the Hewitt and the adjacent properties have been taken up by a New York syndicate and a scheme of development has been pushed during the latter portion of the year. There is a large tonnage of ore blocked out between the sixth and first levels, enough to run the mill for several years. An aerial tramway has been built, a mile long, from No. 6 tunnel to the mill, with a subsidiary tramway from the sixth to the third level. It is expected the property will be in active shipping operation by about the end of March.

On the hill between Silverton and the old camp of Sandon is situated the Richmond-Eureka, a property now being developed by the Consolidated Company. Its shipments during the past year have not been considerable, for the Consolidated Company, pursuing the plan which it has carried out in connection with all its other properties, has first gone in for development before attempting to ship ore largely. This scheme of development, however, is now nearly finished. A large quantity of ore has been blocked out, and a tramway is being installed and will be completed within the next month or two, so that in the spring there should be considerable shipments to the Trail smelter.

The work upon the Vancouver, the Hewitt, and the Richmond-Eureka is something more or less new in the history of the Slocan. Usually the work done has been the taking of the mine lead by lead, level by level, stoping out the ore therein found, paying out the profits as accruing, and leaving the development more or less to take care of itself. This has led to disaster in the past. There are to-day in the Slocan mines which have paid large dividends in the past, such as the Payne, which is now not in a position to ship. Its narrow leads have been all worked out. Before anything else can be done, expensive development is necessary, and there are usually no funds available to do such work, especially in view of the fact that the fluctuations in the lead market are great and the demand for lead in Canada, although in-

creasing, is not at all equal to the supply. Furthermore, it has been the case almost invariably in the Slocan, especially in the shale and slate belt, as distinguished from the granite belt which runs from Slocan Lake to the north shore of the west arm of Kootenay Lake, that as depth has been gained, zinc percentages have supplanted those of lead. With little market for zinc, and with a penalty at the lead smelters for that product, it is not to be wondered at that, despite the payment of a bounty in lead, a bounty running for a period which cannot be counted for permanency in mining, there has been little incentive to the development of the Slocan silver-lead-zinc mines on a scale proportionate to that obtaining in Rossland and the Boundary. In those camps development precedes stoping. In the Slocan camps it has always lagged behind. It, therefore, now takes more capital to develop Slocan properties. The year 1907 will hereafter be remembered as the point of departure for a more scientific system of mining and the inauguration of such a system will be known as connected with the Hewitt and the Richmond-Eureka. In these properties it is not a case of one level being developed and then stoped out; but all of them have ore developed in advance to keep the mills running from one year to three or four years. This has been an expenditure on capital account to a very large extent, but the inaugurators of the scheme are convinced that their outlay is more than justified by results obtained. During the year 1908 the results of this new move in the Slocan will be successful, and there is no doubt but that this excellent example will be followed by a number of smaller properties. There are to-day shipping in the Slocan and East Kootenay no less than 109 silver-lead-zinc properties. The majority of these are small shippers. Some owners do little more than what would be considered assessment work each year, taking out a carload or two of fairly good ore, and then shutting down. Other shipments have been in the nature of trials. Again, in yet other cases, the shipments represent the work of lessees. In some cases leasing has led to more development and the discovery of new ore bodies, but in the majority it has been the taking out of ore in pockets and places where left unstoped by the original companies because of the impossibility of commercially extracting it at a profit. This is easily explicable. Most stoping is done by square sets or stulls and most drifts and cross-cuts are apertures of more or less standard dimensions. Men leasing upon their own account will take risks which they would not do if working for wages, hence with less rock to remove in development work and scant timbering for which to pay, a lessee will often make a profit where a company will find it impossible to do so.

There are in the vicinity of the three mines above mentioned several others of which more may be heard in the time to come. There is, for example, the Westmont on the shore of Kootenay Lake, not far above Slocan City. From this property phenomenally rich ore was taken in the early summer. It is

now a matter of capital and development to prove its capabilities. There is, again, the Canadian group, worked by Brandon Bros. of Silverton, upon which considerable development has been done during the year and from which there has been some shipping.

Another property of note in this district is the Mountain Boomer, which is included in the Vancouver group. A long tunnel is being driven here for the Vancouver vein. Though there is little tangible as yet, still from the surface indication and other considerations this property is supposed to be one of the most valuable of the whole group.

A property of which very little is heard is the Standard, which is being worked by George H. Aylard, but which is the property of John A. Finch, of Finch & Campbell, Spokane. Some shipments have been made during the year, but there has been far more development work done in proportion. In fact, so much is this the case that it is commonly rumored that the Standard has at least \$1,000,000 worth of ore in sight.

On the Arlington and the Ottawa much work has been done all summer, but mostly in the nature of prospecting. Extensive diamond-drill work has been done upon both properties.

The Buffalo, which lies next to the Wakefield, has been working all summer. The work done principally is that of development, in which many nice bunches of good ore have been encountered.

The Adams Group, between Silverton and Sandon, has been worked by Brandon Bros., in connection with the Canadian group, and fair results are said to have been attained.

A property not at first sight in connection with any of these, is the La Plata. The connection is merely justified because it is in the same granite belt extending across the country, which has already been alluded to. The La Plata has been one of the largest shippers for the past year and considerable development work has been done. The mine is essentially a low grade one and depends more or less upon the prices of lead and silver for its continued operation. So far its chief products have been lead and silver, the zinc being more or less a neglected factor, not amounting, as a rule, in its concentrates to more than the percentage allowed without penalty by the lead smelters. The La Plata is situated high above sea level. It has two distinct veins running parallel and close to each other, which have been opened up for a couple of miles, taking in all the drift work. So far these have proved continuous and payable, worked as they have been on the first to the fifth level. What is said to be one of the best concentrating mills in the Sloean is in connection with the property. The drawback to the mine has been the distance from transportation, there being 10 miles of wagon road between the mill and the lake shore. At the present time the mine is closed down, but it is expected that it will be reopened within the next few weeks.

#### SANDON.

Owing to litigation and to causes above alluded to,

the work in Sandon camp during the past year has not been phenomenal. The Payne mine, formerly one of the most noteworthy in the district, is practically at a standstill. The ore in its upper levels has nearly all be taken out and before this property can be placed upon a good basis it is necessary that a scheme of development upon the lower levels be entered upon. This will prove expensive. Senator Forget, of Montreal, recently acquired a large interest in this property, and it is understood the development work will be pushed some time in the future. As there is every reason to believe that the values continue with depth, a future may lie before the Payne mine.

Nearer to New Denver, the Lone Bachelor has been worked on lease during the summer with very fair results. That lease has now been surrendered, but the ultimate intentions of the owners are not known.

From such properties as the Queen Bess, Hartney, and many another of the old timers, shipments have been made, but the general work done has not been large. George F. Ransom has recently been working on the Sloean Sovereign, and it is understood with good results, some nice silver-lead ore having been disclosed.

The principal property working in this section of country has been the Whitewater, under lease to local men. The mill has been running at the rate of 500 tons a week for the greater part of the summer, but has recently been closed down to one-half of that capacity, owing to the slump in prices of silver and lead. During the year it has shipped some zinc to the United States and something like 3,000 tons of concentrates, including output of both the Whitewater and Whitewater Deep, to the Trail smelter. Nearer Kaslo the Lucky Jim has been a shipper of zinc.

#### LARDEAU.

One of the principal producers of the Lardeau has been the Ferguson Mines (Silver Cup-Nettie L.) but work has been performed upon the Mammoth, Eva and others about Camborne. The Silver Dollar has been working to a comparatively large milling capacity. The whole of the Lardeau district is more or less hampered by the lack of transportation. This, taken with the extremely precipitous nature of the country, has rendered a section of the Kootenay, which is probably second to none in richness and in continuity of veins, far slower in development than would have been ordinarily expected by the promising nature of the ore returns so far made by the properties which have been developed.

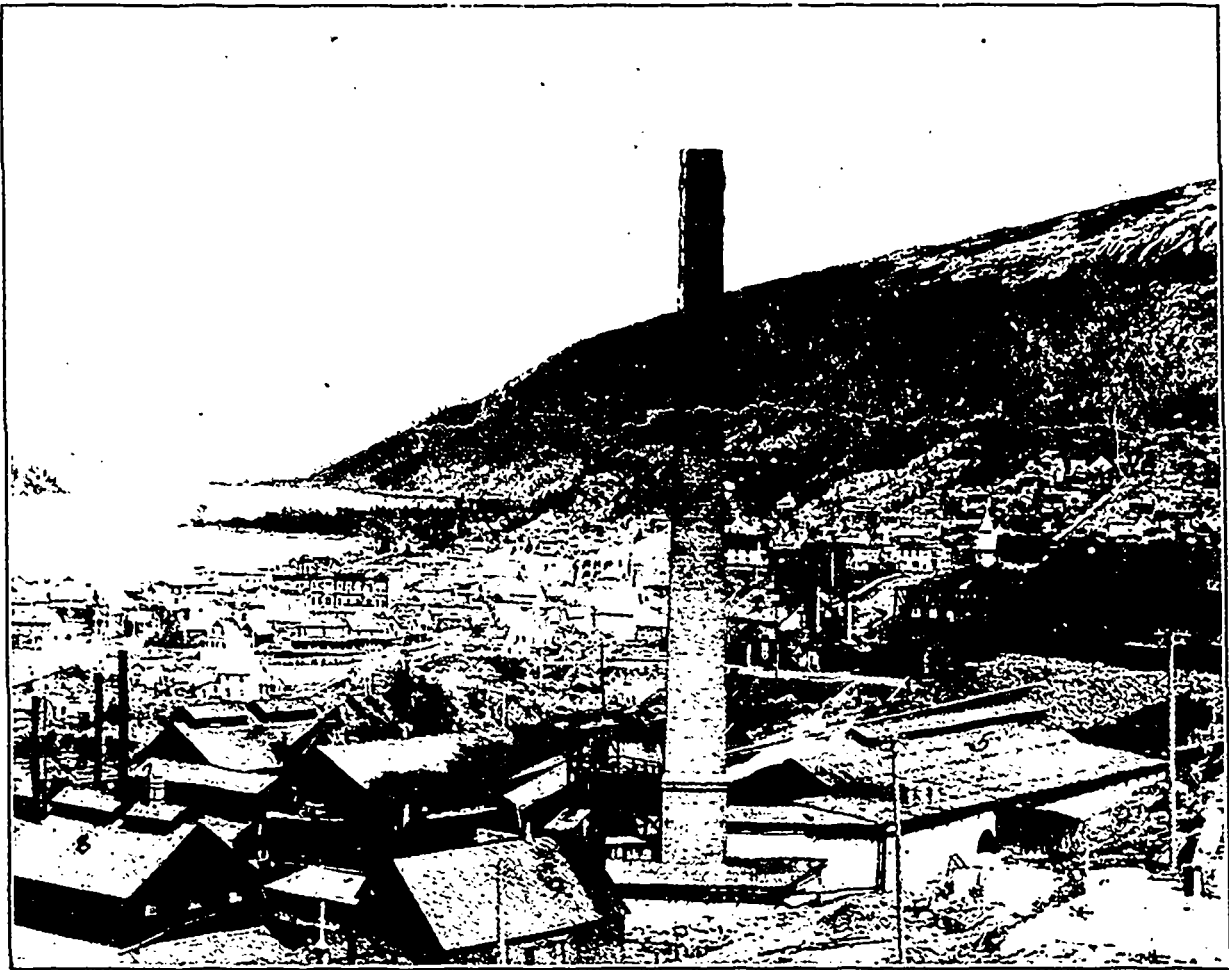
#### KOOTENAY LAKE.

The most marked feature of mining on Kootenay Lake is that afforded by the work on the Blue Bell mine. For a long time past the Blue Bell has been known to be a property with larger ore deposits than almost any other in that part of Kootenay covered by the name of Kootenay Lake. The ore found has not been in veins; it is rather in pipes. It is not high grade; has a considerable percentage of zinc, and is

near the water's edge. Altogether there have been so many difficulties in the way of the working of this property, and so many problems to be solved that, although known for years past, little or nothing of importance was done until taken up by the present company under the advice of S. S. Fowler. At the beginning of the year it had only been decided that the development of the veins or pipes should be so far carried forward that an accurate knowledge of the ores to be shipped could be obtained. This was

mine commence sending ore to the mill. The disposal of the zinc is the one thing that is uncertain in the future of the property, but a tentative arrangement has been made between the management of the property and the owners of the new zinc reduction works at Nelson for the treatment of the Blue Bell zinc ore as soon as the Nelson plant shall be ready to take it.

Across the lake from the Blue Bell is the old camp of Ainsworth, where are grouped together some of the best properties in the whole of this section of the



VIEW OF NELSON, FROM HALL MINING AND SMELTING COMPANY'S SMELTER.

Looking East, up the West Arm of Kootenay Lake, in the background is seen the Mountain Range high up on which is situated the La Plata Mine.

carried out on rather an extensive plan and by the end of June last Mr. Fowler had come to the conclusion that he had ore of payable grade sufficient to run a 200-ton mill for five years. Development was thereafter discontinued. As the ore was low grade, cheapness of work was absolutely essential, and it was determined to operate the mill and other works by hydraulic power. A flume and penstock were built carrying water for four miles from an adjacent creek to the mine. A 200-ton mill was erected; an efficient separating plant devised and a power plant installed. All this work is practically completed, and early in the new year work will be resumed and the

Kootenays. During the year much work has been done upon some of these, especially upon the Krao, the results of which are being anxiously awaited by the owners of surrounding properties. The Krao development has hardly as yet been carried to completion. Recently a shipment was made of some ore which, however, was merely taken out in the course of development.

Yet another section of this district is what is known as the south fork of Kaslo Creek, where are also a number of interesting properties. The chief interest lies around the rehabilitation by H. Geige-

rich of the Montezuma mine and mill, but recently closed down for the winter.

#### NELSON.

In the immediate vicinity of Nelson the Queen Victoria mine, a copper property, has shipped a quantity of copper ore to the smelter at Trail, and had the price of copper remained at normal figures there is no doubt but that this property would have shown more prominently in the mining returns of the year than it has done. As it is the management has under consideration a scheme of power development which they think should put the mine, at even present price of copper, upon a profitable basis.

Recent developments at the Granite and Poorman have shown the existence of a richer vein than had been anticipated, and considerable milling has been done.

The Eureka did some work early in the year, but lack of capital has hampered its operations since.

The old Fern mine started to work in the late fall, and has done some shipping, getting fair returns from its concentrates, but the drop in prices caused it to shut down.

There has been more work done than usual upon the Silver King and contiguous claims, such as the Grizzly Bear, during the year. The mine is now operated by the company, after having been in joint lease with M. S. Davys. It is understood that negotiations are afoot under which the property can be secured and worked upon a very much larger scale than at present, it being an open secret that the late management believed that the old vein supposed to have been lost, could be easily relocated on the unwatering of the lower workings, with the knowledge gained by recent developments.

#### YMIR.

The leading property in the Ymir district to-day is undoubtedly the Queen mine. This property is owned and operated by Wm. Waldie. It has been running continuously for eight years and is now in a better condition than ever before. Recently the capacity of the mill has been doubled and also that of the air compressor plant. The number of men employed has risen from 50 in the earlier portion of the year to 75 at its close. The ore is gold quartz, which is running from 7 to 24 ft. in width in the vein.

Adjacent to the Queen are the Kootenay Belle and Mother Lode mines. Some details supplied by these mines throw light upon the ore being shipped. Seventy-three cars sent by the Kootenay Belle to Trail and stamp mills, aggregated in value \$50,000, giving an average per ton of \$34.56. The value per ton of the ore sent to the smelters varied between \$31 and \$110. Fewer cars were shipped from the Mother Lode, but values were higher, varying between \$46 and \$156.

An interesting property close by, which is at present not a shipper, is the Devlin group. Here during the year a tunnel of 50 ft. has been driven and another of 130 ft., exposing ledges 3 to 7 ft. in width,

whose values will average \$13 and from which results have been obtained as high as \$145.

But the phenomenal strike of the year occurred in the Nugget, the average values of which were \$11. A ledge 9 ft. wide was discovered and 5 ft. of this is being sacked, rawhided and sent away for treatment.

The Arlington mine and the Second Relief have also been steady workers throughout the year, and there are other properties of less note than those mentioned scattered through the Ymir district, especially in the vicinity of Sheep Creek.

#### EAST KOOTENAY.

The chief developments of East Kootenay during the year have been those connected with the St. Eugene, Sullivan and North Star mines. The St. Eugene has been easily the largest shipper of any of the silver-lead mines. Its workings have been extensive during the year with the development up to the normal or nearly so. Considerable quantities of concentrates have been shipped to Europe, but in face of the low prices now offering, shipments have altogether ceased. The product of the St. Eugene is now sent entirely to Trail, the Hall Mines smelter at Nelson, which treated a part, having closed down under the adverse conditions prevailing in the late summer.

In connection with the St. Eugene may be mentioned a new scheme which is of some note in East Kootenay. This is the undertaking of the Cambrian Company. The St. Eugene lead is found on one side of Moyie Lake, and what is thought to be the same lead, with the same general strike, is found on the other side of Moyie Lake. It is thought, therefore, that the vein is continuous between these two points, and a mineral location has been made upon Moyie Lake itself, with a view of sublacustrine mining. A caisson is being sunk very nearly upon the vein itself, and on sufficient depth being gained the workings will be driven along the strike, under the bed of the lake.

The Sullivan has also been a large shipper during the year, about the middle of which a new strike of some importance was made on the property. It was supposed that this would have led to an increase in the capacity of the Marysville smelter, belonging to the Sullivan Company, but the management decided to thoroughly prospect and open up the new find before making any such enlargement. An enlargement of the smelter would mean more economical working, but on the other hand, if the supply of ore for any larger works were not continuous, the expenses of operation would be increased by it rather than decreased.

The North Star has also had considerable work done and a profitable future is predicted for this property.

There are two portions of this district, both of which contain properties which the owners declare to be second to none in the Kootenays, which at present are practically lying idle. These are the Windermere and the St. Mary's districts. With the building

of the Kootenay Central railway, now seemingly certain, the Windermere mines, such as the Paradise, Red Line, Ptarmigan and others, will be opened up and worked. The properties named have more or less development work already done and are simply quiescent until such time as transportation facilities shall be provided and give them an opportunity for economical working. The St. Mary's country is not as well developed, although it is known to possess properties which have been well thought of for years past but most of which, however, are still mere prospects, the difficulties of transportation being far too great to admit of any serious expenditure. The opening up of the St. Mary's country will depend upon the building of a railway, already projected, which would connect Cranbrook or Fort Steele with Crawford Bay, immediately facing the opening of the West Arm of Kootenay Lake.

#### GOLDEN.

An interesting development is taking place at the present time about 50 miles south of Golden, upon the upper reaches of the Columbia River. This is the purchase of an undeveloped property by the Elmore people. The property is called the Giant and has a very large surface showing of galena ore, the vein or blow-out being 75 ft. wide. Last August H. H. Claudet, who is looking after the interests of the company in western Canada and the western States, commenced the erection of a small mill on the property. This is now nearing completion. Mr. Claudet says that of recent years there has been a big change made in the modelling of the Elmore oil process for the reduction of ore. The weaknesses which were shown in the first plants devised have been got rid of. Practically the whole thing has been remodelled. The machinery is now being made by Fraser-Chalmers, and many units have been introduced in various portions of Europe and in Australia, especially in the Broken Hill mine in the latter place. Mr. Claudet is of the opinion that successful demonstration at the Giant will mean the introduction of this cheap method of reducing ores in many mining camps.

Reports have appeared in the Newfoundland newspapers of the discovery of a very valuable deposit of copper ore on the Exploits River, in the vicinity of Red Indian Lake, within easy access to the railway, and not very far from good shipping facilities by water.

At a recent meeting of the agriculturists comprising the amalgamated Dominion Grange and Farmers' Associations of Ontario, among other resolutions adopted was one protesting against members of the legislature holding interests in Cobalt mining enterprises.

Japan is rich in zinc, but it is a large importer of the metal from foreign countries—it is said because the Japanese cannot refine it. It is now said that a Japanese has invented a method of refining the metal, and the work will be started on a large scale.

## THE BOUNDARY DISTRICT IN 1907.

### Progress and Results at Mines and Smelters.

**B**OUNDARY DISTRICT MINES produced a large tonnage of ore in 1907, and its smelters kept pace with their production, treating practically the whole of their big output of ore. The *Phoenix Pioneer*, with characteristic enterprise, gives much detailed information concerning the progress made by the mines and smelting works of the district, and the important results they achieved. The following review of the year is from that journal:

In spite of the many drawbacks of the year just closed, the tonnage of ore produced in 1907 at the mines of the Boundary lacks but a few thousands of tons of that sent out in the previous year, that for 1906 being 1,161,000 tons, and for 1907 amounting to a trifle less than 1,150,000 tons of copper-gold ore—most of which was reduced at the three Boundary smelters. Proof of progress, shown by plain figures, is the best evidence of advancement. This is available, for in spite of fuel and car shortages, and notwithstanding the mines being non-productive for practically one-quarter of the year, the product very nearly equals that of 1906.

When the year 1907 opened, the entire West was experiencing the worst storms known for many years, these completely paralyzing traffic of every kind. This cut very largely into the expected figures of the Boundary output, to commence with. Then there was a shortage of coke at the smelters, which was intensified when the labour troubles of the Crow's Nest Pass country came on in April. Coupled with this was the demand made by the Boundary miners for an increase in the wage scale, which was eventually granted, in view of the high price of copper then prevailing.

An excellent summer ensued, however, and the average tonnage of the combined mines sometimes ran over 100,000 tons per month, which was constantly growing. Meantime, however, the price of copper in the world's markets was turning somersaults, and before it stopped was cut squarely in half—from 26½ cents to 13 cents per lb.; a condition that gave cause for alarm to both the officials of the large mining concerns and the employees, who had received an increase of wages on a high copper market.

This uncertainty gave way to certainty in October, when the Dominion Copper Company closed both mines and smelter, being followed by the three other large producers—the Granby, B. C. Copper and the Consolidated companies—on November 11, when everything was closed tight. This was said to be due to the high cost of production and the low price of the red metal. So things stood till early in December, when the Granby Company gave notice that it was willing to resume at both mines and smelter if the employees would accept similar wages to those of a year ago, being an average of about 50 cents per day



less than the high scale. For three weeks the matter was held in abeyance by the men, but finally on Christmas Eve a vote was taken by which the men decided to go to work on December 26 on the scale offered, based at the mines on \$3.50 per day for miners and \$3 per day for common labour. This was widely hailed as a most satisfactory outcome of the matter, as the largest mining enterprise in the Province was thus enabled to resume operations and give employment to some 900 men.

#### PRODUCTION OF ORE.

For purposes of comparison, the following table gives the production of ore, in tons, in the Boundary for the last eight years:

1900 (six months only) . . . . .	96,600
1901 . . . . .	390,800
1902 . . . . .	508,876
1903 . . . . .	690,419
1904 . . . . .	829,808
1905 . . . . .	933,548
1906 . . . . .	1,161,537
1907 . . . . .	1,148,237
Total . . . . .	5,759,825

It will be seen that each year up to 1907 has been one of steady advancement in the ore output, and despite drawbacks, 1907 very nearly equals that of 1906, the grand total being well up towards 6,000,000 tons. In the absence of definite returns as to values, and allowing about \$5 per ton, this gives a gross return of about \$30,000,000 in the eight years from the mines of the Boundary, and this is a fair indication of what may be expected in the future in this district, even if only a moderate rate of increase be allowed for.

In detail, ore shipment returns from the several producing mines of the Boundary district for 1907, as far as they could be ascertained and figures secured from those interested, were as follows, in dry tons:

Granby mines . . . . .	613,537
Snowshoe . . . . .	135,001
B. C. Copper Co.'s mines—	
Mother Lode . . . . .	208,321
Emma . . . . .	18,274
Oro Denoro . . . . .	14,481
B. C. Mine . . . . .	1,712
Dominion Copper Co.'s mines—	
Brooklyn-Idaho . . . . .	55,548
Rawhide . . . . .	64,173
Sunset . . . . .	31,258
Mountain Rose . . . . .	3,999
Riverside . . . . .	90
Morrison . . . . .	649
Sally . . . . .	65
Duncan . . . . .	40
Providence . . . . .	700
Elkhorn . . . . .	20
Strathmore . . . . .	55

Skylark . . . . .	224
Bay . . . . .	30
Golden Eagle . . . . .	60
Total . . . . .	1,148,237

It will be observed that out of the total of more than 1,000,000 tons shipped and smelted in the Boundary in 1907, some mines had a smaller record than in 1906, due directly to the causes heretofore mentioned, while others did better than in the previous year. Granby would have sent out over 1,000,000 tons alone, had the mines shipped the year through instead of about nine months. As it was, Granby fell down by nearly 200,000 tons as compared with 1906. On the other hand, British Columbia Copper, which had its new and complete smelter in operation, nearly doubled its output, while again Dominion Copper fell behind. The total value of the output, however, for 1907 was probably worth at least \$500,000 more than that of 1906, owing to the high price of copper obtained during the first half of the year.

#### AT THE CAMPS—PHOENIX.

In the early days of the Boundary, for convenience among the trailblazers and prospectors, the community growing up around a mine of importance was given a name, which names have stuck to the localities, although prosperous towns and cities have also grown up in this section, notably, Greenwood, Phoenix and Grand Forks.

Phoenix camp, originally known as Greenwood camp, is the most important of the camps, both by reason of having the largest output of ore by several times over, and, in consequence, the largest number of men employed. There are about 1,000 men employed directly in mining in Phoenix when the large producers are all in steady swing. Of these the Granby Company has more than half, the others being employed by the mines of the Dominion Copper and Snowshoe companies.

Granby Mines.—In the last year advancement has been the constant rule at the Granby mines, in every respect. Without going into details, it may be said that the equipment at the Granby mines is now one of the most complete in British Columbia. Its 60-drill electrically-driven air compressor furnishes the power needed for drilling, pumping, hoisting, and many other uses at the properties, including diamond drilling and machine shop purposes. The ore is broken down in the immense stopes, run into chutes, thence into mine cars, thence to the crushers and ore bins, and so to the smelter—never being handled by hand or shovel from the time it is blasted till it comes out in the shape of marketable blister copper at the smelter—gravity being used in all operations for handling, as far as possible.

Nothing but stoping is going on at the No. 1 level of the Granby mines, where formerly two steam shovels were at work, it being found more economical to break and drop the ore in chutes to the lower

levels. The No. 2 tunnel or level is still used for a big output of ore, the 10-ton steel ore dumps being operated by a steam locomotive for feeding one of the giant rock breakers, which in turn drops the ore to the No. 3 level.

On the No. 3 level electricity is the motive power, two 75-h.p. motors handling the long strings of mine ore dumps. The terminal for this level is on the Great Northern railway tracks and is splendidly equipped for handling a large tonnage—3,000 tons per day if necessary—including ore crusher, elevating machinery and ample ore bin capacity, with the

estimated to have cost the railway company about \$100,000.

At the Granby Company's Gold Drop-Curlew mines (part of the Granby group) development has been steady during the year, resulting in the opening up of ore bodies of increasing size and importance. The shipments have been about 300 tons daily from this outlet, but arrangements have been made for materially increasing this, a huge ore crusher—the fifth of this mammoth size ordered for the Granby mines—now being in process of installation, with ore bins, conveyor, etc., so that this will soon afford the com-



THE DOMINION COPPER COMPANY'S SUNSET MINE, NEAR GREENWOOD.

This view shows the surface as it was several years ago. The big knob (which was practically all ore), behind the power house and above the railway track, has since been quarried out and sent to the company's smelter at Boundary Falls.

usual economical railway dump-car loading facilities common to low-grade mines.

During the past year what is known as the Victoria shaft outlet has been brought into use, costing upwards of \$100,000, with its 250-h.p. electric hoist, three-compartment shaft, ore crusher, conveyor, ore bins, etc. A feature of this outlet is that railway cars of both the Canadian Pacific and Great Northern railways can be loaded from the ore bins, thus making it useful for both railways. This outlet also can handle 3,000 tons of ore daily, if required, both railways having ample trackage facilities. The Great Northern spur to the Victoria shaft headworks is

pany another outlet of large capacity. The C. P. R. has already built a new spur to serve the Gold Drop. Ultimately, the Gold Drop workings and those of the Granby mines proper will undoubtedly be connected underground, as the ore bodies are believed to be one and the same at depth.

There is little doubt but that the Granby mines to-day could regularly furnish 5,000 tons of ore every 24 hours, if called upon to do so. The company is in the unique position, so different in the experience of many mining properties in other districts, of not being able to increase the smelting capacity fast enough to keep up with the possible output of the

mines. As it is, the production and shipment of from 3,000 to 3,500 tons per day is an easy accomplishment for the Granby, with literally its millions of tons of ore opened up and blocked out, and which is being increased each year, notwithstanding the heavy drafts of 600,000 to 1,000,000 tons per annum made on the reserves.

The Victoria shaft is finished and equipped to a depth of 400 ft. The skips when loaded weigh about seven tons each, running in counterbalance. At the 400-ft. level electricity is being substituted for horsepower, a lot of specially constructed 7-ton steel ore dumps for use at that level having recently arrived here from Pittsburg. The electric equipment is now being installed and in a short time will be in running order.

While the heavy shipments have been going on steadily all these years, development at the Granby has not been overlooked, there being many miles of underground workings in the properties, and the ore reserves constantly increasing with development, an elaborate system of diamond drilling having given great satisfaction to the management in the results attained.

Granby's ore shipments for the past year have been as follows by months, in dry tons, being for nine months in reality, and then not always at fullest capacity, due to the causes mentioned:

January .....	31,162
February .....	32,465
March .....	63,826
April .....	70,518
May .....	5,072
June .....	72,820
July .....	80,216
August .....	54,077
September .....	74,667
October .....	86,711
November .....	39,003
December .....	.....

Total tons ..... 613,537

**Dominion Copper Mines.**—The second most important copper producers in Phoenix camp are the mines of the Dominion Copper Company, Limited, which ship to the company's own smelter at Boundary Falls, some 20 miles distant by rail. These mines adjoin those of the Granby Company and have been extensively developed this last year, especially the Idaho and Rawhide, while the Brooklyn mine of the company has been shipping steadily.

When operating at normal capacity the Dominion Copper Company employs from 200 to 300 men in Phoenix camp alone, and ships from 750 to 1,000 tons of ore daily. The Brooklyn-Idaho group is in the heart of the camp, while the Rawhide is about half a mile distant, adjoining the Snowshoe and Gold Drop mines. Altogether the Brooklyn mine has sent out close to 300,000 tons of ore since shipments were

commenced, and there is reason to believe that it can maintain shipments for a long time to come. The ore is all hoisted through a 350-ft. shaft from this mine and sent out over the C. P. R. The Stenwinder, adjoining the Brooklyn, is also well equipped with machinery, but has not been operated much this year, attention having been concentrated on the company's other mines.

The Idaho mine has been extensively opened up by tunnels and open-cast or glory-hole work, making the breaking down of ore an easy and economical matter. This mine is served by a spur from the Great Northern, which connects with the C. P. R. about eight miles distant.

The largest producer of the Dominion Copper Company is the Rawhide mine, which, like many others in the Boundary, is a veritable mountain of low-grade ore. This property has six tunnels at different levels, and is opened up so as to be able to maintain a large output, up to 1,000 tons daily if need be, for years to come. This year the C. P. R. constructed additional trackage facilities for the Rawhide at a cost of some \$20,000.

To supply power for its several mines in Phoenix camp, the Dominion Copper Company has installed an up-to-date machinery and air-compressing plant, electrically driven. An air-pipe line was constructed nearly a mile to the Rawhide mine, and the 30-drill compressor supplies all the power needed for the several mines. The Idaho mine also has a shaft and a good electric equipment for use at the lower levels when needed, this mine being connected with the Brooklyn mine by a drift at the 250-ft. level, under the city of Phoenix. Owing to high working costs and the low price of copper, none of the Dominion Copper Company's mines have been operated since October, but a resumption is looked for early in 1908.

**Consolidated Company's Snowshoe Mine.**—One of the large copper shippers in Phoenix camp is the Snowshoe group, operated under lease by the Consolidated Mining and Smelting Company of Canada, Limited, the company operating extensively at Rossland, Trail and Moyie. At the Snowshoe mine a particularly aggressive campaign has been carried on this year, the ore shipments having been about 135,000 tons in the nine months of active operations. Thousands of dollars have been spent in equipment and development, and the property is to-day in shape to maintain a heavier output than ever before. In addition to the extensive workings underground, reached by a well-equipped 350-ft. shaft, and the main working tunnel, a large area of glory-hole work has been opened up, giving many thousands of tons of additional ore yet available.

The machinery plant has been completely electrified, and steam discarded. An electric locomotive now operates the mine cars at the tunnel level.

The Consolidated Company this year purchased outright, partly for cash and partly for shares, the assets of the Phoenix Amalgamated Copper Mines, Limited, which owned a dozen claims south of and

adjoining the Granby group, the nucleus of the former being the War Eagle group. In addition, options were obtained on some score of other mineral claims in the camp, near or adjoining the present holdings of the company, thus giving the Consolidated Company an extensive acreage in Phoenix camp. A comprehensive system of development was also inaugurated at the War Eagle group last summer, and arrangements made for electric power, the service line being now built. Diamond-drilling was also done on a considerable scale.

Up to the present the ores from the Snowshoe mine have been shipped to either the smelter of the British Columbia Copper Company at Greenwood, under contract, or to the company's own smelter at Trail, about 120 miles distant. The latter entailed a long railway haul over a range of mountains. From the extensive acquirements made by the company during the past year, it is believed by many that, in the not distant future, the company will have its own smelting works at some convenient point in the Boundary district, and so avoid either sending to a custom smelter or having the long railway haul. The company is one of the largest, most progressive and at the same time most successful, of those operating in British Columbia.

#### DEADWOOD CAMP.

**Mother Lode.**—The second most important camp in the Boundary is Deadwood, located about three miles west of Greenwood city, and the leading property in this camp is the Mother Lode group, owned and extensively operated by the British Columbia Copper Company, Limited. The Mother Lode mine is one of the oldest mineral locations in the Boundary, and has been steadily operated for years on an increasingly large scale. The mine is the company's chief producer, supplying the bulk of the tonnage for its smelting works at Greenwood. It is excellently equipped with modern machinery. Recently electricity was substituted for steam, and the 35-drill air compressor is being augmented by another machine of similar size, which is now *en route* to the property. Another ore crusher, with jaws opening 42x36 in., being the same size as the large crushers used at the Granby mines, is being installed at the Mother Lode.

During 1907, with the last two months omitted when the mine was not shipping, the Mother Lode shipped 205,321 tons of ore—double the amount that was sent out in the year 1906—the increased smelting capacity of the company's works calling for a larger tonnage. The mine is served by the C. P. R., and the haul being short, barely four miles, transportation is cheap and expeditious.

Normally about 200 men are employed at the Mother Lode, the company having an excellent boarding house, bunk-house and a number of commodious cottages.

For a number of years the Mother Lode was worked to a large extent on the open-cast or glory-hole system, but during the last year or two the development and shipping has nearly all been from the

underground levels. The four-compartment shaft has been deepened and the 400-ft. level extensively opened up, showing a large additional tonnage of copper ore.

**Sunset Group.**—In Deadwood camp is also located the Sunset group of mines, owned by the Dominion Copper Company. For a number of years the Sunset was owned and operated successively by several different companies, which were eventually consolidated in the present company. The ore of the Sunset has a large percentage of iron, which is useful in fluxing at the smelter of the company. A deep shaft was sunk on the property by the former owners, and a large machinery plant installed. This plant, however, being much larger than needed, was moved to the Idaho mine of the same company in Phoenix camp. A smaller plant operated by electricity was put in at the Sunset in 1907, this doing excellent service.

During the last year the management has been agreeably surprised at the results obtained from the Sunset ore and, whereas the mine was formerly valued chiefly for the iron contents of the ore, copper values have come in that give it no little added value. The mine shipped 31,258 tons in 1907.

**General.**—In Deadwood camp the Sudbury is a promising property that was acquired during the year by Spokane capitalists, a machinery plant installed and a shaft sunk some 200 ft., with a promising showing in copper ore.

Several hundred feet of work were done during 1907 on the Golconda group in Deadwood camp, owned largely by Quebec men, and which promises to be a mine of importance with sufficient development.

The Moreen is another Deadwood camp mine, with electric equipment, and owned by Minneapolis capitalists, who have had considerable work done thereon this year, with promise of the mine turning out well when more work shall have been done on it.

On the Greyhound, in the same camp, a deal of work was done under bond, with encouraging results, as far as heard from.

#### SUMMIT CAMP.

In Summit camp the most important mines are now owned and operated by the British Columbia Copper Company. Chief among these is the Emma, in the same group being the Oro Denoro and the B. C. mine. The Emma has been worked steadily. The Hall Mining & Smelting Company of Nelson owns a one-quarter interest in it. The ore has always been chiefly valuable for its iron contents, and is gladly received by the smelters on this account. When the owners of the property do not need the ore for their own smelters a ready market is found for it at the other reduction works.

Latterly, in the last two or three years, better copper values have been found in the ores of the Emma, greatly increasing the mine's value. Extensive development, through an incline shaft, has proved the ore bodies to be much larger and more

valuable than at first supposed. The mine has therefore been equipped with a new 12-drill electric-driven air compressor.

Adjoining the Emma is the Oro Denoro, which is essentially a quarrying property, the ore being easily handled and shipped by either Great Northern or C. P. R. The Emma vein is believed to extend into the Oro Denoro. A new crushing and conveying plant has been installed at the Oro Denoro, about 200-h.p. being used here altogether.

The B. C. mine, in Summit camp, located about a mile from the Emma and Oro Denoro, and served by a spur of the C. P. R., was one of the earliest shipping properties in the Boundary, having sent out more than 100,000 tons of copper ore and having also gold values. In fact, the Montreal people who owned the mine are understood to have got all their money back, and then declined to prospect for more ore. Some time since the British Columbia Copper Company purchased the group of about a dozen claims outright for about \$20,000, the property having machinery, etc., worth nearly that sum. Since then it is said that nearly enough ore has been taken out by the present owners to pay their purchase price for the property—and they still have several hundred acres of mineralized ground to prospect whenever it shall be deemed advisable to do so.

The Mountain Rose mine, in Summit camp, is owned by the Dominion Copper Company. It is largely an iron property, being used as a flux at the company's smelter. It is served by the C. P. R., the ore being easily quarried and shipped to the smelter.

#### ACROSS THE BOUNDARY LINE.

In addition to the British Columbia Copper Company's Summit camp mines, it has a valuable property in the Napoleon, located near Marcus, Washington, which is chiefly valuable for its sulphur contents. An aerial tramway, with rock crusher and bunker at the mine terminal, and loading bunkers at the Great Northern railway terminal, were installed in 1907.

The same company is also operating the Lone Star and Washington, located just across the British Columbia boundary line, in the State of Washington, where development has been in progress throughout the year. Some 1,500 tons of high-grade copper ore have been sent out during the year, the ore shipped being taken out in development, it being the idea to place the mine on a permanent shipping basis.

#### BOUNDARY SMELTING RESULTS.

As with mining, the three smelters of the Boundary have not been able to operate full time during the year. The British Columbia Copper Company's smelter has been out of commission nearly two months, that of the Granby nearly three months, and the Dominion Copper Company's works more than three months, due to various causes, lack of ore being certainly not one of them. When this is taken into consideration, the result of the year, as compared with the previous year, is certainly encouraging. The following is a summary of the tonnage treated at the

three district plants for 1907, the figures being official:

B. C. Copper Company's smelter.....	341,952
Granby Company's smelter .....	637,626
Dom. Copper Company's smelter....	153,439

Total tons .....1,133,017

At the Granby smelter, little was done during May, November and December, so the results were confined to about nine months' operations. Therefore the smelter had but a short time in which it could get its recently enlarged battery of eight furnaces in fullest operation. During the year many improvements were made about this plant, including new steel furnace buildings, steel flue-dust chamber, greatly enlarged ore and coke bunkers, etc. The plant is now in condition to maintain a steady tonnage of 3,000 tons or more per day, even when allowing for some minor delays for repairs. The following was the tonnage treated in 1907, by months:

January .....	31,128
February .....	34,064
March .....	67,525
April .....	72,170
May .....	5,072
June .....	75,934
July .....	84,261
August .....	55,295
September .....	79,167
October .....	91,690
November .....	41,320

Total, tons .....637,626

Of the above amount only 21,118 tons consisted of custom ore, the balance, 616,508 tons, being ore received from the company's Phoenix mines during the year.

At the smelter of the British Columbia Copper Company the year, while not up to expectations, showed a gain of more than 100 per cent. over 1906 in point of tonnage treated. A new crushing plant, with additional ore bins and conveyor, were installed during the year, with electric drive, and the water system was duplicated. Additional slag hauling equipment was also installed, and additions were made to the machine shop. The following is the tonnage treatment by months for the year:

January .....	21,133
February .....	15,427
March .....	23,678
April .....	34,127
May .....	29,969
June .....	44,316
July .....	47,768
August .....	38,161
September .....	35,567
October .....	31,334
November .....	20,472
December .....	.....

Total tons ..... 341,952

The above tonnage consisted of the following: Ore from Mother Lode, 213,301; Emma, 3,113 tons; Oro Denoro, 16,499 tons; Snowshoe, 84,337 tons; Lone Star and Washington, 1,584 tons; B. C. mine, 1,712 tons; other material from British Columbia, 5,870 tons; other material from the United States, 15,536 tons. Besides the above, the Emma sent out during the year 727 tons to the Nelson smelter; 15,455 tons to the Granby, and 240 to the Trail smelter.

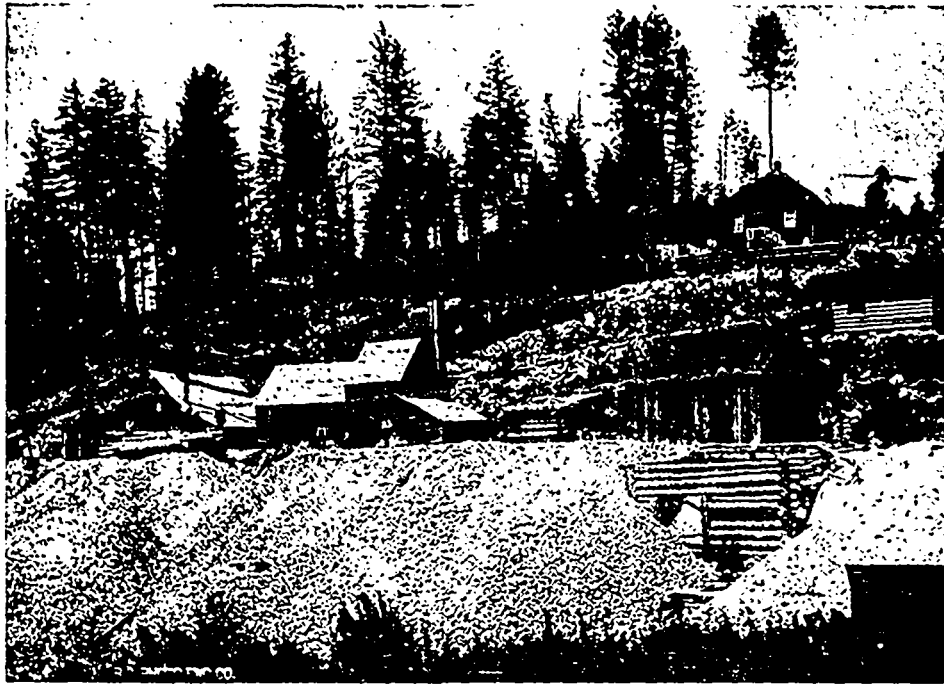
At the Boundary Falls smelting works of the Dominion Copper Company the tonnage treated fell off

As the Dominion Copper Company has had plans prepared for the still further enlargement of the smelter, and as the company's mines can maintain a large output, there is reason to think good results will follow when it shall resume operations again.

OTHER BOUNDARY CAMPS.

Comparatively little has been done at the several other Boundary camps this year, outside those mentioned below.

Franklin camp, at the headwaters of the north fork of Kettle River, about 40 miles north of Grand Forks, has some excellent prospects. Most of the



SURFACE WORKS OF THE JEWEL MINE, BOUNDARY DISTRICT.

The Jewel is the largest gold-quartz mine in this district. While it has not shipped ore of late years, much development work has been done and tests are being made with the object of determining the most advantageous method by which to treat the ore.

considerably from that of 1906. This was due, not only to the fact that nearly four months were lost, but also that the enlarged plant was in commission only part of the operating year. No custom ore was treated. The monthly totals were as follows:

January .....	11,935
February .....	7,216
March .....	20,315
April .....	13,962
May .....	1,207
June .....	17,309
July .....	23,052
August .....	28,577
September .....	22,197
October .....	7,669
November .....	.....
December .....	.....

Total tons ..... 153,439

work done in 1907 has been on the Maple Leaf group, where some machinery has been installed; but this property and the well-known McKinley, Gloucester and others are all handicapped by being so far from transportation. This, however, is gradually being remedied, the Kettle Valley railway having a charter to build to and through Franklin camp, and this year having actually completed 20 miles of construction and tracklaying. When the road shall be completed it will be a great stimulus to this camp.

The Golden Eagle mine, on the north fork of Kettle River, is being developed by a small force, after having been idle for some years, and recently made test shipments to the Granby smelter. The Little Bertha, in the same part of the district, has also been developed.

A number of other properties of no little promise in this district have had considerable work done thereon, but as yet none of them have reached the

regular shipping stage. Nevertheless, there can be but little doubt that some good mines will be developed in the north fork section.

Long Lake camp has one mine at work—the Jewel, where a small force is kept busy, there being an adequate machinery plant. It is understood that the Scottish owners of the property will make some shipments of the gold ore this winter over the snow, the mine being located only about six miles from Eholt, the nearest railway point.

Camp McKinney was more active than for several years, the Cariboo having been operated under lease by a syndicate of residents of Phoenix. This mine had paid more than \$500,000 in dividends in the past, having been a free-gold producer, with a full equipment of machinery, stamp mill, etc., and having extensive underground workings. The present lessees have sent out some gold bricks and a car of concentrates. It is yet hoped that the property will redeem the good name it had for many years.

Nothing has been done this year in Wellington camp, which in the early days of the Boundary had several shipping mines. It is understood, however, that the Dominion Copper Company, which owns the Athlestan group in this camp, will once more, in the not distant future, operate the property, it being a gold producer with good values, and having already shipped over 10,000 tons of ore, even though distant two miles from the nearest railway siding of the C. P. R.

On the west fork of Kettle River a number of high-grade mines have been worked to some extent during the year, and some shipments made, notwithstanding the 40-mile wagon haul to the railway at Midway. The Sally and Duncan were among these, and are said to be looking well with development. They are close to the surveyed route of the Midway & Vernon railway, confidence in the ultimate building of which is still strong, notwithstanding the many delays in getting the project on its feet. When it shall be built, it will open up a rich mineralized territory, and some good mines will undoubtedly be on the shipping list, but the ores of few are now able to stand the heavy expense of a long wagon haul. The Riverside mine, near Rock Creek, has also shipped a few carloads of ore this year.

On each side of Greenwood is a high-grade ore belt, which in past years has given good results, the gold and silver ore yielding all the way from \$60 to \$200 per ton by the carload. Not as much was accomplished in 1907 as previously, from one cause or another.

The Providence mine shipped some 700 tons of high-grade ore, but has not been in operation for some months. It is understood to be the intention of the Chicago owners to sink the present 600-ft. shaft to the 1,000-ft. level and equip the property with larger machinery.

The Skylark is another mine that has also made a good record in the past, being owned by a Phoenix company, and having practically been paid for by

ore taken from the mine. The coming year should also see this mine in operation once more.

In Skylark camp the Crescent mine has been idle most of the year, awaiting a long-delayed shipment of machinery. This is now installed and the property is being worked with the best electrical equipment of any mine in the high-grade class in the Boundary. The property is a silver and gold producer.

During the year the Strathmore has been operated almost continuously, the results having been quite satisfactory to the Chicago owners of the property.

Considerable work has been done on the Bay, the Elkhorn, the E. P. U. and a number of others that are well known in the high-grade section.

During the year the Le Roi mine, located about five miles from Camp McKinney, was bonded by a syndicate from Phoenix, and considerable development was done, giving a most encouraging showing.

#### GENERAL NOTES.

In past years some of the drawbacks to mining and smelting in the Boundary on a large scale, have been lack of adequate power and of sufficient coke for the smelters.

Originally the Cascade Water, Power & Light Company, with its 3,000 h.p. hydro-electric plant at Cascade, furnished the electric power used in district mines and smelters, but the plant was not sufficient for their requirements, so a couple of years ago the West Kootenay Power & Light Company, with extensive water power development at Bonnington Falls, on Kootenay River, near Nelson, was induced to build 70 or 80 miles of double high-tension power lines into the Boundary. Last summer, the West Kootenay Company bought out the Cascade concern, and it now supplies practically all the electric power used in the Boundary. This company has ample power at its command for years to come, even though the industry in this section should expand much faster than anticipated by the most optimistic resident of this district. So there is no further any apprehension whatever on that score.

Intermittently, for the last three years or more, there has been a shortage of coke at the local smelters, the coke coming from the Crow's Nest Pass country in East Kootenay. Over and over again have operations been stopped or seriously curtailed at the smelters because of lack of coke, sometimes caused by labour troubles at the coal mines and again because the coke could not be produced in sufficient quantities. Last summer the matter came to a head, when the Granby Company, the largest consumer of coke, settled things by purchasing a large block of stock in the Crow's Nest Pass Coal Company. This gave the Granby representation on the board of the coal company, and since then there has not been a shortage of coke.

Summing up the situation in the Boundary, it may be said that, while the year 1907 has not been as productive as anticipated when the year began, still certain problems have been worked out in a satisfactory manner, and the close of the year finds that

the tonnage produced has reached a satisfactory figure, the 1,000,000-ton mark per annum having been passed by the shipping mines of this section last year. There is every reason to believe that this will be largely exceeded in the future. Mines and smelters, while still being improved with more and larger machinery, are now in such a shape that increasingly large tonnages may confidently be expected, and while last year gave employment to about 2,000 men in the mines and smelters of the Boundary, the year 1908 should see an increase above that number.

### THE LE ROI MINING COMPANY, LIMITED.

#### Eighth Ordinary General Meeting.

**L**E ROI MINING COMPANY shareholders held their eighth ordinary general meeting in London, England, on December 23, instant. T. D. Grimke-Drayton, J.P., chairman of the company, presided. The report of the directors, together with the audited accounts for the financial year ended June 30, 1907; also the reports of the managing director and the mine superintendent, respectively, were submitted, as follows:

#### DIRECTORS' REPORT.

"The directors herewith submit their report, together with the audited accounts of the company, for the year ended June 30, 1907, and also the annual report by A. J. McMillan, managing director, dated September 28, 1907, and the report by A. G. Larson, mine superintendent, dated September 12, 1907.

"The accounts show a balance in favour of profit and loss of £3,582 4s. 5d. on the operations of the company for the year under review. This result is arrived at after writing off £22,690 15s. 5d. in respect of exploration and development, and £7,766 13s. 7d. on account of depreciations of machinery and plant, surface improvements, etc., at the mine and smelter. The profits for the year have been lessened by the heavy fall in the price of copper, which seriously affected the realization of stocks in transit and on hand June 30.

"From the accounts it will be seen that the liabilities of the company at June 30, 1907, amounted to £45,329 12s. 7d., and the liquid assets, as exhibited in detail on the balance sheet, to £119,589 11s. 11d., showing a surplus of liquid assets over liabilities of £74,259 19s. 4d.

"Reference to the attached reports will show that during the fiscal year 131,696 tons of ore, of an average value of \$10.49 per ton, were mined and shipped to the smelters at Northport and Trail. The metallic contents of the ore showed a falling off during the latter part of the year, which is particularly noticeable in regard to the gold values in certain portions of the mine; the reduction in values for the whole year having been equivalent to about one-tenth of an ounce of gold per ton of ore mined. Fluctuating values in ores of apparent similarity have been frequently experienced in the Le Roi mine. The follow-

ing table shows the shipments and value of the ore in recent years:

	Tons.	Value per ton.
1904 .....	160,110	\$10.94
1905 .....	114,960	12.41
1906 .....	110,042	12.37
1907 .....	131,696	10.49

"During the year the sinking of the main working shaft was continued from the 1,350-ft. level to the 1,650-ft. level of the mine. This should prove of great value for years to come, as by means of it the lower levels can be thoroughly explored and opened up. Extensive development has been carried on during the year, as a result of which large bodies of ore have been exposed. Whilst much of this ore, so far as at present developed, is low grade, bodies of higher grade ore are encountered from time to time, and now that the further sinking of the main shaft has made it possible to thoroughly explore the lower levels of the mine, it is hoped there will be an improvement in this direction.

"By reference to the managing director's report it will be seen that owing to unsettled labour conditions prevailing generally throughout the country during the greater part of the year, not only at the metalliferous mines, but in connection with the collieries and railways, there have been many difficulties to contend with. Notwithstanding that there has been a considerable increase in the cost of labour and supplies, the operating expenses have been kept at a very low level.

"The Trail smelter contract of October, 1905, entered into by the late board of directors, was cancelled during the year and shipments to Trail ceased in April last. The Northport smelter, after having been closed down for about 15 months, recommenced operations towards the end of December last, and continued running until January 25, when it was closed until February 28 on account of transportation difficulties and fuel shortage. During the period under review there was, therefore, only a continuous run of four months at the smelter.

"The directors propose that in future the financial year shall end on September 30, instead of June 30 as at present. It is felt that this arrangement will enable the report and accounts to be presented to the shareholders nearer the end of the financial year than has been the case in the past, and it will also enable the officials of the company at Rossland and Northport to give full attention to the ordinary work of the company at the busiest time of the year. This change, too, will do away with the inconvenience at present caused by the managing director having to leave Rossland to attend the annual meeting at a time when it would be advantageous for him to be at the mine.

"T. D. Grimke-Drayton, chairman of the company, spent about three months during the autumn of 1906 visiting the mine and smelter, and looking into the affairs of the company in British Columbia and at



Northport. Last spring, Charles Dunderdale, another of the directors, also visited the mine and smelter. As Mr. Wilson was at Rossland and Northport in 1905, all the members of the board are now personally familiar with the property of the company.

"G. W. Wilson retires from the board in conformity with the articles of association, and being eligible, offers himself for re-election. The auditors, Price, Waterhouse & Co., of London, and Clarkson, Cross & Helliwell, of Vancouver, British Columbia, also retire, and offer themselves for re-election."

#### REPORT FROM MANAGING DIRECTOR.

"Throughout the fiscal year ended June 30, 1907, now under review, there have been many difficulties to contend with, chiefly in regard to smelting matters, shortage of fuel, and unsettled labour conditions.

"As you are aware, a contract was entered into by the directors of this company with the owners of the Trail smelter, dated October 10, 1905, providing for the shipment of the whole output of the Le Roi mine to the Trail smelter for three years from that date. After lengthy negotiations this contract was cancelled, and a new one substituted therefor, dated

during the year received an increase of wages amounting in many cases to an advance of 75 cents per day. The working hours were also shortened in certain departments of labour. In the latter part of 1906 and again in the spring of 1907 there was serious trouble in the Crow's Nest coalfields, whence our fuel is obtained, causing a cessation of labour there and a shortage of coal and coke supplies.

"General Review.—At the end of the fiscal year the mining and other properties owned by the company remained the same as at June 30, 1906, with the addition of three mineral claims, viz., the Durham, the Tat Fraction, and the Treadwell, covering an area of about 50 acres. It was deemed advisable to acquire these on account of their contiguity to the Black Bear claim.

"The report of our mine superintendent, A. G. Larson, which is appended hereto, deals with the mining operations of the company. Mainly owing to unsettled conditions at the collieries interfering with our fuel supply, the mine was only operated 324 days, as against 336 days in the preceding year.

"The following table gives the comparative costs for operating expenses at mine and smelter, realization charges, and depreciation for the last four years:

	1904.	1905.	1906.	1907.
Tons of ore shipped .....	160,110	114,960	110,042	131,696
Ore production .....	\$2.65	\$2.78	\$2.84	\$3.30
Exploration and development (amount written off)...	0.94	0.90	1.26	0.84
Depreciation on mine account .....	0.21	0.34	0.36	0.20
Smelting and realization (direct and indirect), including freight, interest, depreciation, etc.....	6.77	6.06	6.04	5.98
	<u>\$10.57</u>	<u>\$10.08</u>	<u>\$10.50</u>	<u>\$10.02</u>

August 23, 1906, under the terms of which it was agreed that a certain stipulated tonnage was to be accepted in full settlement. This left about 50,000 tons to be delivered at the date of the arrangement referred to. Toward the end of last year the owners of the Trail smelter declined to accept such deliveries of ore as we were prepared to make under the contract, claiming that they were unable to do so on account of shortage of cars and motive power on the railway, and inability to secure adequate supplies of fuel for smelting operations. For nearly two months from October 13, 1906, the Trail smelter failed to take any of our ore. Under these circumstances, in order to avoid shutting down the mine, we commenced, early in October, 1906, to ship ore to the Northport smelter, placing it in the yards there until such time as we could arrange to start the works. This involved considerable expense in re-handling the ore, but was less costly than it would have been to suspend operations at the mine. Shipments to the Trail smelter ceased on April 11 last.

"Labour conditions during the year were very unsettled, not only in Rossland but generally throughout the mining districts of British Columbia and the United States. The men employed at the mines

"During the year \$164,468.99 was expended on the exploration and development of the mine, of which \$49,544.83 was incurred in connection with the sinking of the five-compartment main working shaft of the Le Roi mine from the 1,350- to the 1,650-ft. level. A winze was also sunk from the 1,650- to the 1,750-ft. level of the mine. The amount written off capital on account of development expenditure incurred during 1907 and previous years was \$110,050.30.

"The Northport Smelting Works.—The plant, which was closed down by order of the late board on October 17, 1905, was restarted and commenced smelting ore on December 26, 1906, and continued until January 25, 1907, when it was closed on account of fuel shortage, caused to some extent by the extreme severity of the weather. On February 28 smelting operations were resumed and continued for the balance of the fiscal year. During the period under review the smelter was operated for 154 days.

"The ore smelted at Northport during the year ended June 30, 1907, amounted to 51,582 dry tons. The matte shipped was 753 tons, of the net value of \$339,036.30, equal to \$449.98 per ton.

"Various lawsuits, which have been pending for

some years past, and one of which affected the water rights connected with the Northport smelter, were settled during the year. In connection with the settlement of this water suit we secured an interest in certain lands over which our water right passes, and also secured a right of way for our water flume, which should prove to be of great value in the future.

"The company's holdings in the name of the Northport Smelting and Refining Company, remain the same as on June 30, 1906, with the additions referred to.

"General Remarks.—During August and September, 1906, our chairman, T. D. Grimke-Drayton, visited Rossland for the purpose of looking into the affairs of the company. Mr. Drayton, who is a mining engineer of long experience, spent a great deal of time inspecting the mine and looking into matters connected with the smelter and with the general business of the company. I received much valuable assistance from him in negotiations leading to the cancellation of the Trail smelter contract, and also in straightening out disputes of many years' standing affecting our water rights at the Northport smelter.

"In April last we had a visit from Charles Dunderdale, another of the directors, who, being in Eastern Canada, came specially to British Columbia, spending several weeks here, looking into the business of the company.

"It will be noticed by reference to Mr. Larson's report, that there has been a falling off in the metallic contents of the ore as compared with the previous two years. This is particularly so in the case of the gold values in some of the newer ore bodies in the mine, but judging from past experience in the Le Roi, it may reasonably be expected that this condition will be changed as other ore bodies are opened up. Fluctuating values in ores of apparent similarity has always been characteristic of our ore, a fact to which attention has frequently been called by managers in past years. Development work has been well kept up, and operating costs were low when the conditions referred to in this report are taken into consideration."

REPORT BY MINE SUPERINTENDENT.

"I have the honour to submit my report on the mining operations of your company for the year ending June 30, 1907.

"Review of Mining Operations.—During the year under review, ore was extracted from the main, north and south veins, and from the Black Bear claim, the tonnage being made up as follows:

	Tons.
Main vein . . . . .	15,330
North vein . . . . .	5,339
South vein . . . . .	82,620
Black Bear claim . . . . .	28,407
	131,696

"Main Vein.—The ore extracted from this vein was of a good grade, and came chiefly from the 100- and 900-ft. levels. Now that the main working shaft

is sunk to the 1,650-ft. level, development work will be undertaken in the hope of finding at depth the continuation of the ore bodies that existed in the upper levels of the mine, and which yielded a large tonnage in past years. The prospects for the future I consider encouraging.

"North Vein.—We are still extracting a limited tonnage from this vein. The downward continuation of the ore shoot on the 450-ft. level has been discovered on the 600-ft. level. Development is being pushed in this part of the mine with satisfactory results.

"South Vein.—About 60 per cent. of the total tonnage of ore extracted during the year came from this vein, on which a large amount of development has been done, particularly towards the west. I propose to carry on considerable development work towards the east, with the idea of proving the continuation of the vein in that direction, where there is still a large extent of virgin ground.

"On the 1,200-ft. level various ore shoots of good grade have been opened up, and exploration work is being carried on with a view to further discoveries.

"Black Bear Claim.—In my report for last year I mentioned that an important ore body had been discovered on the 800-ft. level, west of the Josie dyke, and I called attention to the fact that, as this was the first discovery of ore on the property, it was of great importance. During the year extensive exploration was carried on, and ore bodies of good grade were opened up on the 900- and 1,050-ft. levels. Work is under way with a view to connecting up with the 1,200-ft. level. The total tonnage shipped from this part of the mine amounted to 1,441 tons during the year ended June 30, 1906, and 28,407 tons during the year ended June 30, 1907, and there is good reason to think that the output for the present year will be still larger.

"Ore Production.—The ore mined and shipped to the smelters at Northport and Trail during the past year amounted to 131,696 tons, its metal values averaging: Gold, 0.29 oz. per ton; silver, 0.44 oz.; and copper, 0.98 per cent., together equal to an average value of \$10.49 per ton.

"Development.—The details of development work during the year are as follows:

Work	Footage.	Total Cost.	Cost per ft.
Raising . . . . .	47.5	\$1,994.58	\$41.99
Winzing . . . . .	97.0	4,010.05	41.34
Cross-cutting . . . . .	1,517.5	22,570.57	14.88
Drifting . . . . .	4,429	69,560.22	15.71
Station cutting . . . . .	—	494.16	—
Pocket cutting . . . . .	—	3,381.58	—
	6,091	\$102,011.16	
Combination shaft (including stations and pockets) . . . . .	306.5	49,544.83	—
Diamond drilling . . . . .	4,605	12,913.00	2.79
		\$164,468.99	

"Sinking of the Main Shaft.—The large five-compartment main working shaft was sunk a distance of 306.5 ft. to the 1,650-ft. level, at a cost of \$49,544.83, including the cutting of pockets and stations. This work should prove of the greatest value for many years to come, as it will enable us to open up the ore bodies which were shown to exist in the lower levels of the mine, by work carried on in connection with the winze, as referred to in previous reports. Connection is now being made from the main shaft on the 1,650-ft. level with the winze workings on the same level, and exploration work will be vigorously carried on.

"Diamond Drilling.—During the year 4,605 ft. of diamond drilling was done with satisfactory results. This work was successful in locating various ore bodies of importance, and in giving us much valuable information.

"General.—Owing to conditions prevailing throughout the country generally, a higher scale of wages is being paid than formerly, the cost of supplies has materially increased, and we have been hampered at times by the inability of smelters and railways to handle our ore, all of which has tended to increase the cost of production."

<i>Dr.</i>		BALANCE SHEET AT JUNE 30, 1907.					
To Capital authorized							
200,000 shares of £5 each .....		1,000,000	0	0			
Less—Calls in arrear .....		38	0	0			
						999,962	0 0
To Sundry creditors—							
London .....		109	11	5			
Rosslund .....		21,155	10	7			
						21,265	2 0
To Unclaimed dividends .....						143	8 3
To Reserve against sundry claims.....						4,782	2 4
To Profit and loss account—							
Balance brought forward from last year .....		171,927	9	8			
Less Final dividend of 2s. per share paid December, 1906, for year ended June 30, 1906.....	£20,000	0	0				
Directors' percentage on dividend .....	1,000	0	0				
		21,900	0	0			
		150,927	9	8			
Add Profit for year ended June 30, 1907, as per account. ....		3,582	4	5			
						154,509	14 1
Subject upon distribution to the percentage payable to the directors under special resolution of Dec. 2, 1898						£1,180,662	6 8
<i>Cr.</i>							
By Property account—							
Balance at June 30, 1906.....		977,596	18	4			
Add—Expenditure during year and further property acquired .....		1,901	19	7			
						979,498	17 11
By Expenditure in connection with sundry options.....						4,924	16 10
*By Machinery and plant, at June 30, 1906.....		19,266	17	0			
Add—Expenditure during year .....		673	9	4			
		19,940	6	4			
Less—Machinery sold .....	£ 239	3	9				
Depreciation .....	2,927	9	7				
		3,166	13	4			
						16,773	13 0
*By Mine equipment, at June 30, 1906.....		5,354	18	9			
Add—Expenditure during year .....		2,148	19	2			
Less—Sales .....	£ 71	10	1				
Depreciation .....	528	13	7				
		600	3	8			
						6,903	14 3
*By Surface improvements and buildings, at June 30, 1906.....		9,715	8	9			
Add—Expenditure during year .....		218	8	6			
		9,931	17	3			
Less—Depreciation .....		1,923	16	6			
						8,008	0 9
*By Smelter plant and buildings, at June 30, 1906.....		20,665	5	8			
Add—Expenditure during year .....		6,878	7	10			
		27,543	13	6			
Less—Depreciation .....		2,215	17	9			
						25,327	15 9

\*These are balances of expenditure made since the property was acquired.

*By Mine exploration and development, at June 30, 1906.....	25,174	0	3			
Add—Expenditure during year .....	33,911	2	7			
	<u>59,085</u>	<u>2</u>	<u>10</u>			
Less—Amount written off .....	22,690	15	8			
				36,394	7	2
*By Furniture, fixtures, etc., at London and Rosslund, at June 30, 1906.....	1,815	13	3			
Add—Expenditure during year .....	185	4	8			
	<u>2,000</u>	<u>17</u>	<u>11</u>			
Less—Depreciation—						
London .....	£ 64	8	1			
Rosslund .....	135	13	8			
	<u>200</u>	<u>1</u>	<u>9</u>			
				1,800	16	2
*By Horses, vehicle and harness .....	267	1	8			
Less—Sales .....	£ 25	15	6			
Depreciation .....	35	2	6			
	<u>60</u>	<u>18</u>	<u>0</u>			
				206	3	8
By Ores and matte at smelter, in hand and in transit, as estimated by the company's officials .....	71,880	16	10			
Less—Advances on matte in transit .....	19,139	0	0			
				52,741	16	10
By Stores in hand at mine and smelter .....				18,334	4	0
By Ores on dump at mine .....				17,886	6	8
By Unexpired insurance .....				373	9	3
By Sundry debtors—						
London .....	316	15	7			
Rosslund .....	811	4	5			
				1,128	0	0
By Cash at bankers and in hand—						
London .....	8,596	4	11			
Rosslund .....	1,763	19	6			
				10,360	4	5
				<u>£1,180,662</u>	<u>6</u>	<u>8</u>

\*These are balances of expenditure made since the property was acquired.

PROFIT AND LOSS ACCOUNT.

<i>Dr.</i>	£	s.	d.	£	s.	d.
To Ore production—						
Mining, including management and general expenditure in Rosslund .....	81,420	19	5			
Amount written off mine development .....	22,690	15	8			
Depreciation on machinery and plant surface improvements and buildings, mine equipment, and furniture, fixtures, etc., at Rosslund.....	5,525	17	6			
				109,637	12	7
To Smelting—						
Working expenses at smelter, including freight, and ores purchased from public.	60,397	16	9			
Depreciation on smelter plant and buildings, and furniture.....	2,240	16	1			
Reserve against sundry claims .....	1,400	0	0			
				64,038	12	10
To London expenditure—						
Office rent, lighting, etc. ....	£1,091	10	8			
Office salaries .....	895	5	9			
	<u>£1,986</u>	<u>16</u>	<u>5</u>			
Less Rents receivable for providing office accommodation and clerical assistance to other companies .....	885	8	4			
				1,101	8	1
Printing and stationery .....	85	11	0			
Postages, telegrams and cables .....	149	9	3			
Legal expenses .....	21	10	6			
Expenses of general meeting .....	146	12	6			
General expenses .....	151	14	0			
				554	17	3
Depreciation on office furniture .....	64	8	1			
				1,720	13	5
To Audit fees in London and Rosslund .....				162	5	5
To Exchange .....				206	7	10
To Balance carried to balance sheet.....				3,582	4	5
				<u>£179,347</u>	<u>16</u>	<u>6</u>

<i>Cr.</i>	£	s.	d.
By Matte and ore sales (net proceeds) .....	105,217	18	9
By Rents received from Rossland properties .....	491	3	0
By Ores and matte at smelter, in hand and in transit at June 30, 1907, as estimated by the company's officials .....	71,880	16	10
By Interest account .....	1,671	5	3
By Transfer fees .....	86	12	8
	£179,347	15	6

#### THE GENERAL MEETING.

The secretary (Harold A. Wesson) having read the notice convening the meeting, and the auditors' certificate and report, the chairman said: "Doubtless all of you have received our report and statement of accounts for the year ending June 30, 1907, and I suppose we may take these as read. I beg to move 'That the report and accounts for the year ending June 30, 1907, now submitted, be received and adopted.'

"It is a matter of great regret to your board that the profits have not been greater, but when we take into consideration the heavy fall in the price of copper realized in the later months of the year: the frequent stopping of work owing to the want of fuel and other causes; together with the high cost of wages, you will see how many difficulties we have had to face. Taking the Northport smelter, for instance, it only had a continuous run of four months, and the Trail smelter was unable for a long period, owing to being closed down, to take our ore which was contracted to it. During the year there has been a considerable increase in wages and in the cost of nearly all materials. Despite this, more has been spent on development than for several years past. The main shaft has been sunk to the 1,650-ft. level, and development pushed far into the Black Bear claim. You will, perhaps, remember that last year I told you that the pushing of development was absolutely necessary for the good working of our mine. Our ore, as you know, varies in quality, and it was unfortunate that the grade of ore showed a lower value just when we wanted all the help we could get. This variation in value has always been found in our ore, and I do not think it is so serious a matter as might appear, when we look back at the past experience of the mine.

"You will see from Mr. Larson's report that our expectations of finding ore in the Black Bear have been realized.

"There is one item on the debit side of the balance sheet which, I think, calls for some explanation. At June 30, 1906, the balance sheet showed a credit balance in profit and loss account of £171,927 9s. 8d., of which £90,097 1s. 7d. was in cash. This was to some extent the result of the closing down of the smelter, and the incidental cleaning up and realization of ore and matte. This item, as it has always stood in our balance sheet, is, I think, to some extent misleading. It would be impossible to ever distribute in dividends a considerable part of this credit balance, for the reason that it is invested in plant, improvement, development, and the like, owing to the

company having started with far too little working capital. I mention this, as I believe there is some doubt in the minds of the shareholders as to what it really represents. Your directors propose to give this matter their serious attention, and to deal with it in the next balance sheet.

"We propose to alter the financial year, as mentioned in our printed report, so that in future it shall end on September 30. Several shareholders have asked why there is so long a time between the end of our year and the holding of the annual meeting. The reason is, that from April to September is the busiest time at Rossland, and this year the meeting was delayed because, time after time, Mr. McMillan had to put off his sailing for England, as matters of serious moment required his presence and attention in Rossland. You will see, I am sure, that this applies equally to all our staff at the mine and smelter, who, just when their ordinary work is heaviest, have to turn their attention to closing the accounts and making the necessary reports in preparation for the annual meeting.

"You will also notice in the last monthly postcard you were told that we had appointed Mr. W. A. Carlyle, late general manager of the Rio Tinto Company, as consulting engineer to this company. This question has had considerable thought expended upon it. We wanted to get three things: Firstly, a man who had, if possible, previous experience of the peculiarities of Rossland mines; secondly, who was not connected in any way with companies whose interests might clash with our own; and, thirdly, whose name and great and varied experience would command the confidence of the shareholders and the general public. I believe that in the choice of Mr. Carlyle, we have met all these requirements. I may say that Mr. Carlyle has arranged to go out early in January, and will meet Mr. McMillan at the mine."

Mr. G. W. Wilson: "I beg to second the resolution for the adoption of the report and accounts."

The chairman: "I daresay some of you would like to make some remarks on the report, but I think it will be better to allow Mr. McMillan first to address you, because there are several points to which I have not referred, and upon which he himself would like to speak to you."

Mr. A. J. McMillan (managing director): "Before proceeding to deal with the details of our annual business, I should like to say a few words with reference to the date at which this meeting is being held—a date much nearer Christmas than the directors like to see you called together. As the chairman has

explained, I was detained in getting over here from Canada. We arranged for the meeting to be held on the 20th inst., but finding that the report and accounts could not be prepared, audited, printed, and placed in your hands in time for this, we had to alter the date of the meeting to the 23rd—the alternative being the 30th or 31st of this month, which are not the most desirable days for the purpose. With the financial year ending at September 30, as we propose it shall do in future, we hope to hold the meeting nearer to the end of our year than has been the case in the past.

“With reference to the year ended June 30 last, the business of which we are here to consider, I join the chairman—and for that matter all of my colleagues—in regretting that the profits have not been larger. My interest as a shareholder in this company is so great, that if it had been possible to earn and pay a dividend this year, you may be quite sure one would have been forthcoming. Everything possible has been done to achieve satisfactory results. Owing to many difficulties, some of which have been referred to in the annual report, and by the chairman in his speech to-day, we have had a most worrying and trying year, notwithstanding which we have managed to keep working expenses down to a very low level. As you will have noticed from the report, the grade of the ore has this year shown a falling off as compared with the two former years, amounting to nearly \$2 per ton, which on our output of last year represents a difference of about £50,000 in value, an amount sufficient to furnish the wherewithal with which to pay a substantial dividend. This falling away in values we cannot prevent, much as we may regret it. It is an experience we have often passed through before, and the fact that Le Roi ore bodies are very irregular both as regards size and value—as indeed are most of the ore bodies in Rossland—is one to which the attention of shareholders has frequently been called in years gone by. Development work has been well kept up, and we have been successful in locating large ore bodies on the lower levels. Much of this ore, so far as at present shown up, is too low in value to yield a profit, though small bodies of pay ore are met with from time to time associated with the larger bodies of low grade ore. We are vigorously pushing exploration work on the lower levels and in other parts of the mine, and hope yet to come into larger bodies of payable ore. In certain parts of our property we have had an opposite and much more satisfactory experience. The development on the Black Bear, which has resulted in opening up an ore body of excellent grade, is a case in point. In 1906 ore was discovered there for the first time, and the assay value of the ore already taken out from this one body alone amounts to about £90,000.

“During the year we spent on exploration and development a larger sum than had been expended for years past. Included in this item is the cost of sinking the main shaft from the 1,350- to the 1,650-ft.

level, amounting to between £10,000 and £11,000. It was necessary that this work should be done in order that we could thoroughly explore the lower levels of the mine, upon which so much depends. As the sinking of the shaft was not finished until the end of the financial year, and we were therefore unable to derive any benefit from it during that period, the amount expended in connection therewith was carried forward, and this chiefly explains how it is that, as shown by the balance sheet, £33,911 was expended during the year under the head of ‘mine exploration and development’—whereas only £22,690 was written off.

“You will notice in the annual report reference is made to the fact that the profits for the year have been lessened by the heavy fall in the price of copper. This, perhaps, calls for explanation. Whilst it is quite true that copper was upon the average at a higher price during the year ended June 30, 1907, than it was during the preceding year, yet we have not benefited to the extent that might be supposed, owing to the fact that under the smelting contract made by the late directors we were compelled to ship our ore to the Trail smelter at a period when there was a rising copper market, and as the Trail people paid us for the ore a few days after it was shipped, we did not benefit by any subsequent rise in the price of copper, the profits from this source enuring to the benefit of the Trail smelter; whereas, shortly after the Trail contract came to an end, our copper which, under an old contract, was shipped to the Tacoma refinery and not paid for until nearly three months after being marketed, was to a large extent sold on a falling market. At June 30 last we had in transit and on hand nearly 900,000 lb. of copper, the whole of which was seriously affected by the subsequent fall in price, which occurred before payment was made. This depreciation in value, to the extent of more than £7,000, we have provided for in the accounts you have in your hands. The fall in the price of metals—copper, silver and lead—has been very great during the last few months. We have but a small amount of silver in our ores, and the fall in this metal does not materially affect us—whilst the fall in lead does not directly concern us at all, though many mines in British Columbia are seriously affected by it. As regards the fall in the price of copper, that is a matter of great importance to us. Practically all the copper producing mines in British Columbia, outside of Rossland, have been closed down, whilst many of the large copper mines in the United States and Mexico have either been closed down altogether or their output greatly reduced.

“The question you are no doubt asking yourselves—as indeed we all are—is this: What has the future in store for us? The monetary stringency in the United States has caused a great falling off in the demand for copper, and until this demand improves, the price will probably not rise to any great extent. The decrease in the output of copper should result in higher prices immediately there is any considerable

demand for the metal. Though the year just closed has not been as successful as we could have wished, we are entitled to remember that it is considerably better than some of its predecessors. Looking forward, there is a satisfactory feature to be noted in connection with labour, in this respect; that in view of the well-known difficulties we, in common with others, have to contend with, and are doing our best to overcome in carrying on mining and smelting operations, the men employed at our mine and smelter have agreed to accept as from the first of this month, a substantial reduction in wages.

"It may be of interest, perhaps, if I call your attention to the fact that one-half, or thereabouts, of Le Roi ground is virgin territory, not yet developed, and that we are pushing exploration work in this new ground, as also in different parts of the older portions of the mine.

"Mr. W. A. Carlyle, for a number of years and until recently general manager of the Rio Tinto mine in Spain, prior to which he was resident manager at Rossland of the Le Roi mine, having this year established himself as a consulting engineer in London, has been appointed consulting engineer to this company. I am glad to see Mr. Carlyle on the platform with us to-day, and to be able to state that he is leaving for Rossland within a week or two, there to confer with me and other officials of the company in regard to many important matters in which we are interested.

"Though the present days are not quite so bright as some that have gone before, I look forward with hope to the future, trusting that better times are in store, and assuring you that at any rate nothing will be left undone to bring about that improvement you and I, and all of us, so earnestly desire. I have much pleasure in supporting the resolution."

The chairman: "If any shareholders have any remarks to make, I shall now be glad to hear them."

Colonel Banks said "he thought it was extremely unfortunate that they should have to meet so near Christmas, and he suggested that the meeting should be held at a more convenient time in future."

The chairman: "I entirely agree with you. We tried all we could to push the meeting forward, and I think you will agree with the proposition that has been made for changing the period of the financial year in order that the meeting may be held within a more reasonable time after the close of the year."

Mr. Joseph Horton said "he would like to ask, seeing that the accounts were made up to June 30, and the meeting was being held six months subsequently, when, if the accounts were closed in September, the meeting would be held. He presumed it would be held within a few weeks."

The chairman said "it would be impossible to get to London, within three or four weeks of the closing of the books, as had been suggested, the annual accounts of any company such as this, whose operations were carried on 6,000 miles away. What would happen in the future would be that the accounts

would be closed on September 30, and the annual meeting would probably be called early in January, and the benefit would be that the shareholders would have all the information up to the end of September, whereas now the information they had was nearly six months old."

Mr. Horton said "he did not see why, if the accounts were closed on June 30, the meeting should not have been held in September."

The chairman said "he thought he had made that clear in his speech. The period from April to September was the chief time during which the work went on at Rossland; that was the time when Mr. McMillan and his staff were up to their eyes in the practical business of the company. He had had several telegrams from Mr. McMillan during that period, announcing his intention to sail, and then something important came along, and he was obliged to stay. The busy season continued until the end of September, and until he could come over and get all this information together they could not hold a meeting."

Mr. Horton said: "Mr. McMillan had referred to the fall in the price of copper. As far as he had been able to follow the papers, the price of copper up to July had been phenomenally good, and the fall in the price was only quite recent; therefore they ought to have had the benefit of the high price of copper in this year's accounts. He thought, also, they ought to have an income and expenditure account, giving more details. He saw that the profit on the year's work was £3,000 odd, and the clerical staff for London alone cost over £2,000. This seemed abnormally large. Then, as regarded the low grade of ore, he had followed the monthly reports, and reckoned it out as being worth £2 per ton. In some companies they could treat the ore at 16s. per ton, and therefore he thought they had had ample margin to make a decent profit."

The chairman said, "with regard to the fall in the price of copper, he did not think the shareholder who had just spoken had followed what had been said. The copper mined up to the last day of June was sent on later to the refinery, and was not paid for until nearly three months afterwards. It was quite true that in the month of June copper prices ruled high, but the price they were paid was the price ruling two or three months later. With regard to an income and expenditure account, the board would take the suggestion into consideration, and see if they could make the matter a little clearer."

The managing director, in answer to a question, said "the operating costs per ton amounted to \$10.02 on 131,696 tons, and there was a reduction at the refinery for losses in dealing with the matte."

The resolution was put to the meeting and carried unanimously.

The chairman: "The next business is the election of a director. Mr. G. W. Wilson retires in accordance with the articles of association, and offers himself for re-election. I have much pleasure in pro-

posing that he be re-elected as a director of this company. I have had the pleasure of knowing him for some time, and I can assure you his great financial knowledge has been of extreme assistance to the board. He has also a personal knowledge of the mine and smelter, and, curiously enough, every other member of the board has a knowledge of them also. I am sure I cannot put before you a better name than his for the position of a director."

Mr. Charles Dunderdale: "I have great pleasure in seconding the resolution. There is no doubt that Mr. Wilson is a most valuable ally in this small board that you have in Le Roi, and his large business experience and the able way in which he tackles the financial work of the company—the balance sheet particularly, when it comes up for discussion—makes me confident in asking you to re-elect him.

"I should like, before I sit down, to say a word or two with regard to a visit I made to Rosslund to see the mine and smelter this year. Business took me to Eastern Canada, and naturally I thought I should like to take a trip across the continent and see something of the property in which we are all interested. I spent about a month altogether on my journey, and I am bound to tell you that I consider the mine is in every respect managed most excellently. I hope, if any of you go to America, you will take the opportunity of running over to Rosslund to see for yourselves how harmoniously everything is working. It is unfortunate we are here to-day to discuss a position which does not satisfy you any more than it does ourselves; but we cannot make 'a silk purse out of a sow's ear,' and when we have ore showing a diminution of 15 per cent. in value, it is difficult to earn dividends. All I can tell you with regard to my visit to Rosslund and Northport is that all the people connected with the mine—from Mr. McMillan down to the poorest miner—are doing their utmost to get us the dividends we all want so much. Whether we can get them remains to be seen; but you may be sure that Mr. McMillan and his staff are doing their best to get them for you."

Colonel Banks suggested that there was no necessity for four directors.

Sir Frank Crisp (the solicitor to the company) pointed out that if they had only three directors, one of whom was Mr. McMillan, they would only have two in London when Mr. McMillan was at the mine.

Mr. Horton asked Mr. Wilson to give some further information as to the clerical expenses in connection with the London office.

The resolution was then put to the meeting and carried unanimously.

Mr. Wilson said: "I am very much obliged to you for this proof of your confidence. Of course, I know that in good times directors have an easy task in getting re-elected; but when times are bad it is difficult for shareholders to understand that it is not the fault of the directors, and then their path is not such a pleasant one. I can assure you that the results of the year are not in any sense due to any

slackness on the part of the directors in attending to the work. It has had every attention from them. It comes back, as you have been told, to the fact of the depreciation in the values of the ore, which the directors cannot possibly help. Your mine is being managed as well as it is possible to manage it; but no management can improve the ore. But I think the step we have just taken in appointing Mr. Carlyle as engineer is a good one. He is going out there, and I believe we shall, before very long, benefit by adopting that course. I cannot promise that your directors can do anything better for you than they have done; but I can assure you the business of the company has been attended to as assiduously as it possibly could be by them. With reference to the question of expenditure, I would point out that the expenses in connection with the London office are smaller this year than they have ever been in the history of the company, and we are today fortunate in making certain arrangements by which we get a reduction amounting to about £300."

A shareholder: "What is the life of the mine?"

The Chairman: "It is impossible for any man to tell you. I happen to be a mining engineer, but I should not like to make any statement as to the life of the mine. We will now proceed with the appointment of the auditors. I will ask some shareholder to move a resolution on the subject."

Mr. A. W. Taylor, J.P.: "I beg to propose that Messrs. Price, Waterhouse & Co., of London, and Messrs. Clarkson, Cross & Helliwell, of Vancouver, British Columbia, be re-elected auditors, at the same remuneration as before."

The resolution was seconded, put to the meeting, and carried unanimously.

Mr. A. J. McMillan (managing director): "I rise to move the following resolution: That article 105 of the articles of association be cancelled and the following article substituted: 'The directors shall be entitled to receive for the year ended June 30, 1907, and for each succeeding year, by way of remuneration, the sum of £100 for each director, with an additional £50 for the chairman, and also such further sum as shall make the total remuneration payable to the directors equal to 5 per cent. of the dividends paid to the members of the company for the year. Such further sum to be divisible equally among the directors, except that the chairman shall be entitled to 50 per cent. more than any other director. The directors shall be repaid such reasonable expenses as they may incur in attending meetings of the board or of committees of the board, or general meetings.'

"In the notice sent to the shareholders convening this meeting you will have observed that notice was given that this resolution would be proposed to-day. I have received a letter from a shareholder who intended to have been here and to move the resolution just read to you, and in that letter he expresses regret that he is unable to be present and do so himself. The duty therefore devolves upon me to move the resolution. I may say that I was consulted about



this question, and that I have discussed the matter with some of the largest shareholders, who approve of the step proposed to be taken. To make quite clear the object in bringing forward this resolution, I may point out that, with the exception of the managing director, not one of the directors receives anything for his services or on account of out-of-pocket expenses incurred in attending meetings and looking after the business of the company, unless a dividend is paid. Put into practice, this means that for six years out of the eight during which the company has been in existence, Le Roi directors have worked without fee or reward. When this company was formed the articles provided for a yearly payment of £200 to each director, the chairman to receive £300. On December 2, 1898, that article was cancelled and the following substituted therefor: "That article 105 of the articles of association be cancelled, and the following article substituted: The directors shall be entitled to receive out of the net profits in each year, the following remuneration, namely: A sum equal to five per cent. of all dividends distributed among the members of the company, divisible equally among such directors, except that in such division the chairman shall be entitled to 50 per cent. more than any other director."

"It is obvious that when there are no dividends the directors under existing arrangements do not receive any remuneration, and any man who knows anything about business matters connected with large companies knows there is far less work in connection with the management of a company when everything is going well, than there is when difficulties have to be dealt with. I invited my three colleagues to join the board some three years since, and you were good enough to elect them; but I must say I do not like to ask men of standing and of large business experience to come here and spend hours and days looking after the interests of some 3,000 shareholders in the company unless they receive some small remuneration for the time and attention they give to our business. Our directors spend a great deal of time—frequently several days a week—attending to this business, and, in addition, the chairman in particular devotes a good deal of time to its affairs when at his own home. It is not intended that this remuneration shall be in addition to the 5 per cent. In years when a dividend is payable, the amount will be merged in the sum to which the directors would then be entitled."

Mr. Davis: "I have very great pleasure in seconding the resolution. I have had a great deal of experience in limited companies and attending meetings, and I do not think I have seen a resolution more absolutely fair to the shareholders than this one. I think what Mr. McMillan has said must appeal to the shareholders. It is not fair we should have a board of directors devoting a great deal of their time to the business of the company without having some remuneration. The remuneration proposed is very

small, and I think this resolution ought to be passed unanimously."

Colonel Banks said "he did not believe in directors working for nothing, but considering that the company was not now in a flourishing condition, he thought it would be a gracious act on their part to forego fees for the present."

Mr. Horton said "he should not vote against the resolution because he did not believe in men working for nothing, but he thought it would be rather nice if the directors were to waive their fees and be content with their out-of-pocket expenses."

Mr. A. W. Taylor said that "as the directors received payment last year by way of percentage on the dividends paid, he thought they should be satisfied if this year they received their out-of-pocket expenses and something more as a recognition of their services, though he would suggest a smaller sum than that named in the resolution. He would not, however, vote against the resolution."

On a show of hands, the resolution was lost, but on the poll which was subsequently taken the result was: For the resolution, 69,350; against, 1094. The chairman thereupon declared the resolution carried.

A vote of thanks having been passed to the chairman, the proceedings then terminated.

Mr. A. H. Brooks, chief of the United States Geological Survey's Alaskan division, reports that various unfortunate conditions have led to a material reduction in the gold output of Alaska in 1907 as compared with that of 1906. Preliminary estimates indicate that the gold production for 1907 will be between \$17,000,000 and \$18,000,000, as against more than \$21,000,000 in 1906.

"Gold production in the far north," writes Mr. H. Mortimer Lamb in *Mines and Minerals*, "is not expected to exceed \$3,000,000 in value this year, the lowest in ten years; but this is no gauge of the real activity and development of the past season. Individual effort has, of course, ceased and most of the gold won this year was the result of dredging; but the chief feature has been the enormous expenditure of capital in providing equipment for future hydraulic working, by the completion of an elaborate system of fluming and ditching covering a distance of approximately 70 miles. It is stated that water will be available for the commencement of extensive hydraulicking early next season by this system, while some half a dozen more dredges will be in operation. Hence, in 1908 will be inaugurated a new era for the Yukon, a beginning of mining on a colossal scale, of concentrated effort and the application of the most modern and scientific methods. The most recent intelligence from the Yukon is that another large area, including some 300 to 400 claims on Dominion Creek, has been acquired by corporate interests, and it is to be expected that ere long all remaining productive areas in the vicinity of Dawson will be thus absorbed and consolidated."

CONSOLIDATED MINING AND SMELTING  
COMPANY OF CANADA, LIMITED.

Second Annual General Meeting.

THE SECOND ANNUAL MEETING of shareholders in the Consolidated Mining and Smelting Company of Canada, Limited, was held in Toronto, Ontario, on November 28. The report of the Directors and of the general manager, and the statement of accounts follow:

DIRECTORS' REPORT.

"Your directors have pleasure in submitting the second annual report of the company, also the managing director's report, and the audited financial statement for the year ending June 30, 1907.

"The result of the year's business is not up to our expectations, as operations were handicapped by the strikes of the coal miners, which curtailed our supply of coal and coke; the unsettled labour conditions at

our own mines, and the severity of the weather during the winter months, which prevented a satisfactory railway service.

"The development of the company's mines has proceeded satisfactorily during the year, resulting in a large increase in the ore reserves.

"The following properties have been purchased during the year, namely, the Iron Mask, Idaho, and Enterprise claims adjoining the company's properties at Rossland, the payments for which have been made partly in cash and partly in stock.

"Since the close of the year negotiations have also been completed for the purchase of the properties of the Phoenix Amalgamated Copper Mines, Limited, at Phoenix, B.C.; also for the purchase of the Keystone and Four Ace claims adjoining the Phoenix group.

"Important additions and improvements have been made at the mines, smelter and refinery, which are fully described in the report of the managing director."

FINANCIAL STATEMENT.

Liabilities.

Capital authorized \$5,500,000		
Issued 48,338 shares of \$100 each.....		\$4,833,800 00
Sundry Banks—		
Bank of Montreal, Rossland—		
Loan and overdraft .....	\$1,563,589 73	
Accrued interest .....	1,364 09	
Snowshoe account .....	46,196 07	
Canadian Metal Co. account .....	109,483 34	
		<u>\$1,720,633 23</u>
Contingent liability at June 30, 1907, on drafts made against matte shipments .....	\$18,037.79.	
Bank of British North America:		
Payroll account .....		2,974 40
Imperial Bank, Cranbrook .....		101 50
		<u>1,723,709 13</u>
Sundry accounts payable .....		31,915 97
Balance to be expended under agreement with Canadian Metal Company .....		15,516 66
Payments on account of lead purchased .....		9,778 08
		<u>57,210 71</u>
Reserve for claims awaiting adjustment .....		20,000 00
Appropriation for Dividend No. 6:		
Payable August 1, 1907 .....		120,845 00
Profit and loss account—		
Balance June 30, 1906 .....	70,914 93	
As per Statement for year ending June 30, 1907.....	484,676 07	
		<u>555,591 00</u>
Less:		
Reserve as above .....	20,000 00	
Dividend No. 3, paid Nov. 1, 1906 .....	117,470 00	
Dividend No. 4, paid Feb. 1, 1907.....	120,845 00	
Dividend No. 5, paid May 1, 1907.....	120,845 00	
Dividend No. 6, payable Aug. 1, 1907.....	120,845 00	
		<u>500,005 00</u>
		55,586 00
		<u>\$6,811,150 81</u>

Assets.			
Mines, mineral claims, shares in other companies, etc.		\$3,326,685 05	
Expenditure on Richmond-Eureka group		2,266 51	
Options on mineral claims		15,438 18	
Lease of Snowshoe mine		46,196 07	
			<u>\$3,390,585 81</u>
Mining, smelting, concentrating, and refining plants:			
Balance at June 30, 1906		969,086 83	
Add Construction account, June 30, 1906, to June 30, 1907		408,730 81	
			<u>1,377,817 64</u>
Less:			
Sales of machinery		3,995 79	
Depreciation		91,705 50	
			<u>95,701 29</u>
			1,282,116 35
Smelter product on hand and in transit to refineries: Pig lead, bullion, matte, bluestone and antimony			
		466,176 20	
Ores and metals on hand and in transit to smelter at June 30, 1907; at cost or less estimate for refining cost:			
Ores on hand at smelter		591,990 95	
Ores in transit to smelter		11,947 80	
Refinery metals on hand		479,841 34	
			<u>1,083,780 09</u>
			1,549,956 29
Mine and smelter stores and materials			
			313,549 27
Sundry accounts receivable			
		115,309 18	
Loan to Canadian Metal Company:			
Secured by first mortgage on assets:			
Disbursed to June 30, 1907		109,483 34	
To be disbursed under agreement		15,516 66	
			<u>125,000 00</u>
			240,309 18
Insurance and taxes paid in advance			
			23,918 35
Cash: Head Office, Toronto			
		6,215 59	
Eastern Township's Bank, Phoenix			
		1,500 00	
Bank of British North America, Kaslo			
		3,000 00	
			<u>10,715 59</u>
			<u>\$6,811,150 84</u>

## PROFIT AND LOSS ACCOUNT.

To Smelter product on hand June 30, 1906, and in transit from smelter to refiners		\$ 397,320 69
" Ore in transit to smelter, June 30, 1906, and in process of treatment		750,912 81
" Custom ore, lead and bullion purchased		2,384,180 80
" Freight on ore from company's mines		59,530 93
" Mining, smelting and general expenses:		
St. Eugene mines	389,832 59	
Centre Star "	266,955 29	
Snowshoe "	71,059 30	
Trail smelter and refinery	934,883 83	
		<u>1,662,731 01</u>
To Development expenses:		
St. Eugene mines	220,729 71	
Centre Star "	297,473 52	
Richmond Eureka mines	3,305 47	
Snowshoe mines	9,870 58	
		<u>531,379 28</u>
To Royalty on Snowshoe ore		53,230 81
" Depreciation: General plant and equipment		91,705 50
" Directors' fees		8,600 00
" Depreciation of stores, bad debts, etc.		3,685 47
" Balance, profit		484,676 07
		<u>\$6,427,953 37</u>

By Sales of smelter product, profit on refining, etc. ....	\$4,062,129 26
" Sales of ores .....	812,262 90
" Smelter product on hand June 30, 1907, and in transit from smelters to refiners: Pig lead, matte, bullion, bluestone and antimony .....	436,176 20
" Ores and metals on hand and in transit to smelter at June 30, 1907; at cost or less estimate for refining cost, viz.:	
Ores on hand at smelter .....	\$ 591,990 95
Ores in transit to smelter .....	11,947 80
Refinery metals on hand .....	479,841 34
	1,083,780 09
" Rents and sundry revenue .....	3,275 74
" Amount reserved at June 30, 1906, in excess of claims paid.....	329 18
	\$6,427,953 37
To Appropriations:	
Reserve: Held for claims of this company awaiting adjustment .....	\$ 20,000 00
Dividend No. 3, paid Nov. 1, 1906.....	117,470 00
" No. 4, paid Feb. 1, 1907.....	120,845 00
" No. 5, paid May 1, 1907 .....	120,845 00
" No. 6, payable Aug. 1, 1907.....	120,845 00
Balance carried down .....	55,586 00
	\$ 555,591 00
By Balance from June 30, 1906 .....	\$ 70,914 93
" Balance brought down .....	484,676 07
	\$ 555,591 00
June 30, 1907—By balance .....	\$ 55,586 00

## MANAGING DIRECTOR'S REPORT.

"I beg to submit the results of the Consolidated Company's operations for the year ending June 30, 1907, including balance sheet, profit and loss account, production, and general report, with maps and photographs showing the groups of claims controlled and operated by the Consolidated Company, and vertical projections of the principal producing properties.

## "Financial Statement.

"After writing off \$91,705.50 depreciation upon plant and equipment, the operating profit shown is \$484,676.07. The special reserve of \$20,000 provided for June 30, 1906, has been used in settling claims for damages resulting from the explosion of the powder thaw-house at the Centre Star mine. A new reserve fund of \$20,000 for claims on other accounts has been established. After providing for the above and the payment of four dividends, numbered 3 to 6 inclusive, amounting to \$480,005, the balance at the credit of profit and loss account is \$55,586. In determining the values of the metals and products on hand, quotations lower than the market prices of June 30, 1907, have been used, in order to provide against declines in the metal markets.

"The profits of the company for the year have been unfavourably affected by two strikes in the coal fields, which shut off the fuel supply for the mines and smelters; the very severe winter of 1906 and 1907, and the unsettled and unsatisfactory labour conditions, all of which greatly restricted the mining, smelting and refining operations, and resulted in increased costs as compared to the previous years. As an illustration of the effect of the above-mentioned adverse conditions, the tonnage mined in Rosland

and smelted at Trail for the year only slightly exceeded the tonnage mined and smelted during the six months ending June 30, 1906.

"In place of disposing of treasury stock to secure cash with which to purchase new properties and to pay for new construction equipment and improvements, a portion of the company's cash working capital has been used. Treasury stock was also issued in part payment for some of the properties acquired.

"Due to unavoidable circumstances the stock of ores, by-products, and metals on hand June 30, 1907, was very large. Indications are that smelter and refinery supplies will be delivered with greater regularity, and that this large stock will be reduced before the first of the year.

"The Snowshoe overdraft guaranteed by the Consolidated Company was reduced from \$78,000 to \$46,196.07.

"The Consolidated Company have advanced the Canadian Metal Company \$109,483.34, and have agreed to advance a total of \$125,000, which is secured by a first mortgage upon the Blue Bell mine and Frank zinc smelter.

## "Production.

"Following are the productions of the different properties controlled and operated by the Consolidated Mining and Smelting Company of Canada, Limited, for the year ending June 30, 1907, and the total production to date, as far as can be ascertained. It will be noted that the gross value of metals produced at the company's smelting works has been over \$25,800,231, and that during the year the gross value was about \$3,786,146, of which \$1,657,365 came from the company's own properties:

## "Year Ending June 30, 1907.

	Tons Ore.	Oz. Gold.	Oz. Silver.	Lb. Lead.	Lb. Copper.	Total value
Centre Star and War Eagle	81,788	32,306	27,808	.....	1,030,529	\$ 893,249
St. Eugene, ore.....	127,645	.....	675,959	29,391,389	.....	1,713,933
"    concentrates..	24,737	.....	.....	.....	.....	.....
Snowshoe .....	49,002	2,989	16,171	.....	1,372,056	397,141
Trail smelter (smelted)...	222,573	69,168	1,100,271	20,383,083	3,443,310	3,786,146
"Total Production Since Commencement of Operations in 1894.						
	Tons Ore.	Oz. Gold.	Oz. Silver.	Lb. Lead.	Lb. Copper.	Total value
Centre Star and War Eagle	924,472	489,188	687,902	.....	21,083,914	\$13,724,282
St. Eugene, ore.....	525,127	.....	.....	.....	.....	.....
"    concentrates..	113,668	.....	3,358,232	134,851,109	.....	6,203,275
Snowshoe .....	141,332	11,391	42,946	.....	3,772,636	1,203,141
Trail smelter (smelted)...	1,291,186	578,142	10,179,104	102,671,523	28,836,756	25,800,231

NOTE—Trail smelter production does not cover period the smelter was operated by the British Columbia Smelting and Refining Company, which was previous to March, 1898.

## "Development.

"There are about 16 miles of underground development or narrow work in the Centre Star and War Eagle group, and about 10 miles in the St. Eugene. During the year the following development work has been driven in the three principal producing properties:

	Centre Star.	War Eagle.	St. Eugene.
Drifting .....	4,186.5	2,599.5	9,186
Cross-cutting .....	1,526	1,298.5	1,619
Raising .....	811	574	2,417
Sinking .....	337.5	131.5	339
	6,861	4,603.5	13,852
Diamond drilling ...	6,287.5	1,749.4	4,697

"In the Centre Star a large tonnage has been developed in the east ore bodies above the 5th level. The 11th level has developed in a most encouraging manner, there having been found six ore shoots, the largest having a width approaching 40 ft. Several of these have yielded ore of a considerably better grade than the average mine-run from the Centre Star group. The east ore shoot which started at the 6th level was found to be of greater length on the 11th level than at first supposed, and although it is not wide, yet it is of excellent grade. Three ore shoots west of the shaft have turned out satisfactorily. The 12th level has been extended the full length of the property, and only two pay ore bodies have as yet been located, one being the continuation of the main east ore shoot, which was small but in places contained very high values. There is still a large amount of cross-cutting to be done upon this level, and there are a number of places where sufficient values have been found to justify starting raises. The main Centre Star shaft is down below the 14th level, and stations have been cut on the 13th and 14th levels and cross-cutting for the vein started.

"A fair tonnage of ore is being found in the upper levels of the War Eagle, particularly around the 4th,

5th and 6th levels, where in some cases the ore bodies had faulted. In the lower workings, the chief feature has been the development between the 10th and 12th levels, where a tonnage of high-grade silicious ore is being developed. A small shoot of heavy sulphide carrying high copper values has also been found. There still remains a large area of country to prospect between the 8th and 12th levels, as the old War Eagle drifts below the 8th level were run in the foot-wall of the vein.

"Nearly all of the shipments from the Iron Mask have come from new ore, the old ore reserves, which had been developed at the time of purchase, not having yet been materially drawn upon. The Iron Mask ore bodies are for the most part small, but in cases, quite long and yield a good grade of ore. There are fair prospects of continuations of the old veins being found, and a possibility of new ones located.

"On the Idaho property, which has recently been acquired, a vein about 30 ft. wide has been discovered near the middle of the claim. A small prospecting shaft is being sunk, and at the start yielded fair values, but recently has been in a fault, since which time the values have been low. The 4th, 7th, 8th and 12th Centre Star levels have been extended into the Idaho ground. A large part of the distance driven was through the large dyke which forms the Centre Star gulch. The assays in the lower levels have been somewhat discouraging, but on the 4th level there are good prospects of locating ore bodies containing pay values. At several points mineralized ground was encountered, which will require more thorough prospecting.

"Development at the Snowshoe has been satisfactory. The main increase in ore reserves since leasing the property has been due to the opening up of the Gold Drop branch ore vein. Diamond drilling below the main fault has not located any ore.

"At the St. Eugene mine, Moyie, large ore bodies in the cross veins have been found. These are known as 3rd and 4th avenues. The 3rd avenue ore shoot, found by diamond drilling, has been located on the

1,700-, 1,800-, 1,900- and 2,000-ft. levels. The 2,000-ft. level does not promise to yield nearly so large a tonnage as did the 1,900-ft. level, but this level is not thoroughly prospected. In the south vein, just above the 2,000-ft. level, an ore shoot 30 ft. wide of fair grade of ore has been found. The 2,100-ft. level has not shown up any large ore bodies, but it will require some months to prospect. There are indications that the south vein may in the future prove to be more productive than the main vein, and there is every reason to hope that other cross fissures containing ore will be found.

"The Richmond-Eureka group at Sandon promises to yield a small tonnage of high-grade ore. Tunnels Nos. 2, 3, 4 and 5 have been driven, and in cases small rich ore bodies located. One carload of ore encountered in development was shipped which yielded \$3,305.47, and there is more ore on the dump. Before other shipments are made an aerial tramway will be built.

"The ore reserves in Rosslund have been materially increased since the last report, while the developed tonnage at the St. Eugene is about the same as that of June 30, 1906. The probable Snowshoe tonnage has been increased.

"At Rosslund, all the underground workings between the Centre Star, War Eagle and Iron Mask have been connected by the driving of several long cross-cuts on the different levels, in order that all of the ore from these properties might be handled through the main Centre Star shaft. All this work has been charged off to development account. Electric haulage has been installed on the 350, 4th and 9th levels, the 350 and 9th being for the handling of all War Eagle and Iron Mask ore below the second level.

"All costs of development in the company's producing mines, amounting to \$531,379.28, have been charged against profits.

#### "Construction and Improvements.

"During the year a large amount of new construction and improvements at the various properties was completed or nearly completed, the amount expended upon this account having been \$408,730.81. The main items have been as follows:

"At Rosslund mines, the enlargement of the Centre Star compressor plant, and the purchase of an electric motor for driving the old Centre Star compressor (to replace steam): a Nordberg hoist (with new head works) for handling the ore from the Centre Star, War Eagle, Iron Mask and Idaho mines; an ore conveyor, sorting and complete sampling plant; electric haulage on several levels underground and on the surface; additional fire and water systems; additional equipment for shops.

"At the St. Eugene, numerous improvements and additions to the concentrating mill; additional fire protection; additional machinery for shops; improvements in power plant and boiler house; improvements to hoisting plant.

"At the Snowshoe, additional fire and water systems; installation of electric haulage; new compressor

drive; enlargements and new equipment for shops; additional buildings.

"At Trail, enlargements of copper furnaces and lead furnaces; installation of the Huntington-Heberlein plant; construction of new copper mill bins and trestles; additional electric locomotives and electric haulage; additions to the refinery lead plant; the building of the acid plant; the additions of an anti-mony plant.

#### "New Properties.

"During the year the Iron Mask property at Rosslund, referred to in the previous report, was purchased for cash.

"On account of the large ore bodies located in the eastern part of the Centre Star mine, next the Idaho claim, the surface showing, which indicated a continuation of the main Le Roi-Centre Star vein through the Idaho claim, and because of the cheapness with which this property could be developed from the various Centre Star levels which had been driven to the Idaho line, the Consolidated Company acquired the Idaho claim for part cash and part shares in the Consolidated Company.

"As the main Le Roi-Centre Star vein can be traced through not only the Idaho claim, but also through the Enterprise property, joining the Idaho on the east end line, it was decided to purchase this property for cash. This gives the Consolidated Company 4,500 ft. on the main Le Roi-Centre Star vein.

"In view of the recent favourable developments on the Snowshoe, Gold Drop and Rawhide properties, all in Phoenix camp, it was considered advisable to purchase, partly for cash and partly for shares of the Consolidated Company, the Phoenix Amalgamated Company's properties, and negotiations for the acquisition of these interests were completed June 30, since which time the actual purchase has been made. The Phoenix Amalgamated Company's properties comprise the following claims: War Eagle, Missing Link Number 2, Dandy, Bald Eagle, Pin Hook, Red Rock, Lulu and some fractions, the total acreage being about 210.3. These properties adjoin the Granby Consolidated Company's properties upon the south.

"Negotiations were also completed June 30 for the purchase of the Four Ace and Keystone properties, adjoining the Phoenix Amalgamated Group on the south. Several options have been taken on other properties near Phoenix.

"To provide a sufficient supply of lead ore for the furnaces and refinery at Trail and to insure a sufficient lead tonnage to enable the company to retain its strong position in the Canadian, Chinese, and Japanese lead markets, an agreement was made with the Canadian Metal Company, by which the Consolidated Company is to advance \$125,000 for development and the construction of a lead concentrator at the Blue Bell mine (said advance being secured by mortgage upon the Blue Bell mine and concentrator and Frank zinc smelter), and in consideration of the above the Consolidated Company has secured the

Canadian Metal Company's entire output of lead and zinc concentrates for a period of years.

"Management and Staff.

"The excellent condition of the company's mines is largely due to their manager, Mr. R. H. Stewart, and the favourable results, considering the adverse conditions previously referred to, are due to Messrs. Jules Labarthe, manager of the Trail smelter and refinery; T. W. Bingay, comptroller; William Chambers, superintendent of the smelter; John F. Miller, superintendent of the refinery; A. J. McNab, metallurgist; R. Purcell, superintendent of Rossland mines; W. P. White, superintendent of St. Eugene mines; Charles Biesel, superintendent of Phoenix mines; and John M. Turnbull, mining engineer."

#### DE LAVAL'S ZINC PROCESS.

**A** ZINC PROCESS stated to be effective in the treatment of zinc and iron ores of low grade was referred to by the Stockholm correspondent of the *London Mining Journal* a few weeks ago in the following terms:

For some time important experiments have been conducted at the Sala zinc and silver mines in central Sweden, with the object of extracting zinc from zinc tailings by means of Dr. De Laval's well-known electric (so-called cyclon) furnaces. The experiments have been conducted at Sala, as this mine contains an enormous quantity of zinc tailings, the accumulation of several hundreds of years' mining. The more recent experiments here have proved a decided success. The oxide of zinc, obtained from the tailings, contains about 15 to 20 per cent. of zinc, which is considered a very good result for a beginning.

As regards the commercial side of the new process, it is yet too early to give any definite information, since the experiments made at the Sala mines have, up to the present, been of a purely tentative and not of a commercial nature. But as far as one is able to judge from the product obtained from the cyclon furnaces (*viz.*, the zinc oxide), this new process promises good results. It is also expected that it will ultimately be profitable, as soon as it comes into general use. Now that the initial experiments have proved so satisfactory, all that is needed is to organize the work on a large scale, so that it may be of practical and commercial utility.

The "Svenska Dagbladet," in an article on Sweden's foreign trade, writes: "A metal of great importance for Sweden's foreign trade is zinc. Hitherto our export in this direction has principally consisted of Ammesby roasted zinc blende and of ore from the Rylls Wytlang zinc mines, but it seems as if we are on the threshold of an important new departure. Should the experiments now being carried on on a large scale at Sala, with the help of De Laval's so-called 'cyclon furnaces,' prove to be a definite success, a large proportion of Sweden's now

worthless or useless zinc ores will, with certainty, in a short time be extracted in the country itself—thanks to which our annual export will be increased by several millions crowns."

It thus seems that—thanks to the genius of De Laval and other scientists—in this direction, the hitherto worthless and low grade zinc and iron ores of Sweden, Norway, and other countries, will soon become of great value in the mining industry.

An advantageous arrangement of rails and rail joints is thus described in an English trade journal: When laying underground tramroad or railway it is exceedingly difficult in the semi-darkness of the mine, with the ordinary bridge rail laid on the sleepers with a butt joint, to secure its proper alignment, and considerable care has to be exercised in getting an even joint, which is necessary if a tub is to run over it without any chance of its being derailed. It frequently happens that the nails split the sleeper, allowing a rail to get loose and out of place, and the adjacent rail, remaining rigid, produces a projection against the wheels of the trams or tubs as they pass along, causing them to get off the rails and dislocate the traffic until the defect has been remedied. To prevent this derailment, by constructing the rails at their ends in such a manner as will prevent one rail moving from its adjacent rail, has been accomplished in several ways, one being as follows: A piece of the arch or top of one end of a bridge rail is cut out so as to form a groove or a gap about one inch long and one-half inch wide, vertically down through the arched portion of the bridge. The opposite end of the rail has a projection formed by cutting away a portion of its end side flanges and welding or squeezing together by suitable means the remaining portion of its side ends to form such projection. When placed in position the projection or tongue of one rail fits in the groove of its adjacent rail, thus forming a smooth and almost rigid joint. A great advantage is that one nail in each rail will suffice instead of two in the ordinary method, each rail receiving the benefit of the nail in its adjacent rail. A further point to be considered is the preservation of sleepers, for by this method they may be used several times, while under the ordinary system it seldom occurs that a sleeper which has had four nails driven in each of its ends and taken out if of any use for relaying.

In Western Australia a new agreement entered into between the Miners' Union and the Chamber of Mines provides for a renewal of the old agreement for another two years from date of expiry, with an increase in the minimum rate of pay for underground work from 10s. to 11s. per shift, the union giving a guarantee of industrial peace during the period mentioned.

It is stated that deposits of gypsum at Grand Prairie, in Kamloops District, are to be developed.

## COMPANY CABLES AND NOTES.

## CABLES.

*British Columbia—*

*Le Roi*—November: Shipped to Northport during the month 9,100 tons, containing 2,528 oz. gold, 3,700 oz. silver and 190,700 lb. copper. Expenditure on development work during the month, \$8,250. (Office note—Mr. W. A. Carlyle of 62, London-Wall, E.C., has been appointed consulting engineer to the company. Mr. Carlyle was until recently general manager of the Rio Tinto Mining Company, prior to which he was resident engineer at Rosslund of the *Le Roi* mine.)

*Le Roi No. 2*—November: Josie mine report—Shipped 2,500 tons. The net receipts are \$21,250, being payment for 2,000 tons shipped, and \$1,575 for \$9 tons concentrates. In all, \$22,825. Still to be paid for, 1,750 tons. (Office note—The miners have voluntarily agreed for a reduction of wages amounting to 50 cents for skilled labour and 25 cents for unskilled labour. This will make a difference to the company of something over \$1,000 per month.)

*Le Roi No. 2*—November: Vancouver mine report—Shipped 120 tons. The net receipts are \$7,814, being payment of 80 per cent. for 101 tons concentrates shipped.

*Tyce*—November: Smelted in 24 days, 115 tons of *Tyce* ore (value after deducting refining charges, \$1,586), and 5,273 tons of custom ore—5,388 tons, producing a total of 478 tons of matte.

*U. S. A.—*

*Alaska Consolidated*—November: 50-stamp mill ran 349 hours and crushed 3,200 tons of ore for 555 oz. of gold, valued at \$8,700. Saved by amalgamation and concentrates, valued at \$1,800. Total, 3,200 tons of ore for \$10,500. Amount recovered per ton, \$3.28. Assay value of tailings, \$0.28. No. 3 east drift from Alexander tunnel advanced 62 ft. and cross-cut 30 ft., No. 3 west drift from Alexander tunnel 53 ft., No. 4 west drift from Alexander tunnel advanced 70 ft. and intermediate level 20 ft.

*Alaska Mexican*—November: 120-stamp mill ran 30½ days, crushed 20,818 tons ore; estimated realizable value of bullion, \$31,610. Saved 275 tons sulphurets; estimated realizable value, \$18,725. Working expenses, \$25,460.

*Alaska Treadwell*—November: 240-stamp mill ran 30½ days, 300-stamp mill ran 30½ days, crushed 85,326 tons ore; estimated realizable value of bullion, \$88,509. Saved 1,610 tons sulphurets; estimated realizable value, \$75,951. Working expenses, \$84,267.

*Alaska United*—November: Ready Bullion Claim: 120 stamp mill ran 30 days, crushed 19,800 tons ore; estimated realizable value of bullion, \$24,889. Saved 300 tons sulphurets; estimated realizable value, \$10,635. Working expenses, \$27,191.

## NOTES.

At a meeting of directors of the Granby Consolidated Mining, Smelting and Power Company, Limited, held in New York early in December, it was decided to postpone declaration of the dividend which, had the company's mines and smelting works been in operation, would have been declared.

At a meeting of the Alberta Railway and Irrigation Company (which owns and operates coal mines at Lethbridge, Alberta), held in London, England, on November 7, the chairman said that the position of the company was satisfactory and he hoped its common shares would be placed on a dividend paying basis in 1908.

The Supreme Court has ordered the winding up of the Metropolitan Gold and Silver Mining Company, of Lardeau, B.C., Limited, and has constituted Edward Blake McDerimid of Nelson, accountant, official liquidator. The liabilities of the company, which has been operating the Triune mine, situated about ten miles from Ferguson, are stated to be about \$160,000.

The adjourned meeting of the Revelstoke & McCullough Creek Hydraulic Mining Company took place at Revelstoke on December 12. The balance sheet for the past year was submitted and the election of officers for the ensuing year took place. The officers are Chas. F. Lindmark, president;

John D. Sibbald, managing director; C. M. Field, J. P. Sutherland, J. A. Stone, all of Revelstoke; I. G. Harris, Morris Thomas, W. J. Bates, Duluth, Minn., and Gus Carlson, Hibbing, Minn., directors.

## COMPANIES INCORPORATED.

*B. C. Pressed Brick Company, Limited*, with a capital of \$100,000, divided into 1,000 shares of \$100.

*Stewart Mining & Development Company, Limited*, with a capital of \$100,000, divided into 100,000 shares of \$1 each. Objects, to acquire and operate the Ben Hur, George E., Sunbeam and Sundown mineral claims, situated on Glacier Creek, near Bear River, Portland Canal district of Skeena mining division.

*The International Potzer Company, Limited*, with a capital of \$250,000, divided into 2,500 shares of \$100 each.

*The Victoria, B.C. King Solomon Mines, Limited*, with a capital of \$15,000, in 15,000 shares of \$1 each.

## REGISTRATION OF EXTRA-PROVINCIAL COMPANY.

*Sphinx Mountain Mining Company, Limited*.—Head office at Spokane, Washington, U.S.A. Capital, \$100,000, divided into 1,000,000 shares of ten cents each. Head office in British Columbia at Victoria. Attorney, (not empowered to transfer and issue stock) Alexander Scott Innes, barrister, Victoria.

## COMPANY REGISTERED IN ENGLAND.

*Ymir Gold Mines, Limited*.—Registered November 5, by H. C. Godfray, 42 Finsbury Square, E.C. Capital £50,000, in 5s. shares. Objects. To acquire the business of the Ymir Gold Mines, Limited (in voluntary liquidation), and to carry on the business of gold, silver, and general miners, etc. No initial public issue. The first directors (to number not less than three nor more than nine) are to be appointed by the signatories. Qualification, £150. Remuneration, £600 per annum and 5 per cent. of the dividends in excess of 10 per cent., divisible. Registered office: 6 Laurence Pountney Hill, E.C.

## TRADE NOTES AND CATALOGUES.

Mussens Limited, of Montreal, Quebec, sole Canadian agents for Fraser & Chalmers, Limited, the well known British machinery manufacturers, have received a supply of the latter company's new catalogues, any of which they will be pleased to send to those applying for same. The list comprises the following:

- A—7. Rateau Patent Steam Turbine.
- C—5. Whitmore Patent Governor for Air Compressors and Pumps.
- D—7. Parnell Steam Stamp.
- D—10. Two Stamp Mills.
- D—11. The Nelson Patent Automatic Feeder.
- D—12. Bremner's Patent Rapid Discharge Mortar Box, for Stamp Batteries.
- E—6. Evans-Waddell Chilean Mill.
- F—3. Picking Belts and Tables.
- F—14. The Callow Screen.
- G—1. Copper Smelting Furnaces.
- J—3. Cages, Skips, etc.
- J—5. Pithead Gears.
- J—6. The Ross-Browne Baling Tank.
- L—6. Continuous Filtration.
- M—10. Gold Dredges.
- M—11. Gold Collecting Tables (Turners' Patent.)
- M—16. The "Gutermuth" Patent Valve for Air Compressors and Pumps.
- M—18. The Yabsley & Atkinson Meter for measuring Liquids, especially useful for pump, dam and engine tests.
- N—9. Mr. Walter McDermott's Notes on Screening and Concentration.



The Jeffrey Manufacturing Company, of Columbus, Ohio, U.S.A., have sent an illustrated bulletin descriptive of the Jeffrey Centrifugal Fan for mine ventilation. This fan is of the highest efficiency and best mechanical construction; it develops large volumes at low speeds, large capacity against high gauges. For testing and show purposes, the company has installed at its works at Columbus a complete 10x5-ft. fan, and with this tests are made for interested parties.

A timely publication is the booklet issued by the Canadian Westinghouse Company, Limited, of Hamilton, Ontario, describing the Westinghouse Pipe-Thawing Apparatus. The text deals with outfits for two classes of service—light service such as thawing out the pipes of a dwelling house, and heavy service such as thawing out large underground mains. Other publications received from this company are the following circulars: No. 1097, Westinghouse Types K and KG Motors, direct-current series wound for use on cranes, hoisting machinery and similar service; No. 1107, Westinghouse Automatic Circuit Breakers, carbon break; No. 1147, Westinghouse Relays for alternating and direct-current service.

Peacock Brothers, engineers, of Montreal, Quebec, who are sole Canadian representatives of Hathorn, Davey & Company, Limited, of Leeds, England, are inviting the attention of Canadian buyers to the especial merits of the Hathorn-Davey pumping machinery for waterworks and mines. In their publications appears one striking illustration showing three sets of geared three-throw horizontal ram pumps, 9 runs each 10 in. diameter by 20 in. stroke, while another illustrates the triple expansion engines of the Leeds Waterworks, the official trial of which indicated steam per pump horse-power per hour 13.051 lb. and per indicated horse-power per hour 11.91 lb., with a mechanical efficiency of 91 per cent.

#### BOOK REVIEWED.

*Mining, Mineral and Geological Laws of the United States.*

By Charles H. Shamel. Pp. 627; illustrated, 6x9 in.; cloth, \$5. New York, 1907; Hill Publishing Company.

Contents: Geology and allied sciences—definitions. Property in minerals. Legal definitions of mineral and ore. Theories of ore formation and classification. Right of extralateral pursuit of vein. Public domain and mining laws applying. Acquisition of mining rights. Scientific definition of vein, etc. Legal definition of vein or lode. Legal definitions of apex, strike, dip, etc. Extralateral rights. Tunnels, etc. Discussion of proposed repeal of extralateral law. Placers. Water. Miscellaneous uses of geology in law. Forms and procedure for locating mining claims. Forms and procedures for obtaining patents. Appendix. Bibliography. Classification of rocks and geological formations.

Reviewing this book for the *Engineering and Mining Journal*, Dr. R. W. Raymond, who is eminently fitted to pass judgment upon such a work as the one under notice, bears testimony to the fact that the views of the author are "clearly, forcibly and courteously expressed, and constitute a timely contribution to the discussion of a question by no means yet out of date." Dr. Raymond says, in part:

"1. The author disclaims the purpose of supplanting by this treatise either, on the one hand, the classical works on the U. S. mining law, which will remain indispensable to lawyers, or, on the other hand, the books and monographs on geology and ore deposits, which will remain indispensable to experts in those departments of science; but he thinks there is room between these two classes for a useful book, which will enlighten the intelligent layman, interested in mining, as to the legal relations of that industry, and the geological

conditions which (as I think, unnecessarily and most unfortunately), profoundly affect those relations in certain parts of the United States, though nowhere else in the civilized world. In his perception of the probable usefulness of such a book, he may be right, but I cannot help feeling that he has missed the opportunity of supplying a much more pressing general need. For the mining law which he expounds is mainly (apart from certain incidental items, which I will not here stop to enumerate), not mining law at all, but simply the system regulating the disposal of public mineral lands by the United States and the subordinate conditions imposed upon holders of possessory title by the several States and Territories included in the region to which the U. S. law applies. Now, the immensely greater part of our mining industry is carried on in States wholly outside of the region favoured (or cursed) with the U. S. law of mining titles. In all those States, there are real mining laws, *i.e.*, laws governing the operating of mining, apart from the conditions of mining titles. A summary of these statutes which have been much more useful, and would have appealed to a much larger constituency, than any abridged re-statement of the U. S. law for the sale of mineral lands, which entirely ignores the actual subsequent operations of the purchaser.

"2. The method by which the author proposes to carry out his own conception is to give a summary outline of geological theories, and a summary statement of legal principles, legislative enactments, and judicial decisions, to which are added, *passim*, historical and critical comments of his own, which belong in an entirely different class, since they constitute, not declarations of existing science or law, offered for the guidance of the reader, but arguments and explanations which, however suggestive or weighty, cannot be deemed authoritative. It seems to me that nobody can be misled by the intercalated individual opinions of the author, and therefore that they do not impair the practical value of his work. Consequently, I accept his method as entirely legitimate, and worthy of such candid praise as the manner of its execution may deserve.

"3. In the performance of his design, so far as the department of geology is concerned, the author has done about as well as anybody could be expected to do. Geological facts and theories ought not to be involved in the title to real estate; they are not thus involved, outside of certain regions in this country; the U. S. law for the sale of mineral land in those particular regions was framed in total ignorance of geological science as it now exists; nobody can state that science today so as to make it fit the terms of that law; and and statement of it, as a mere auxiliary portion of a manual of U. S. mining law, is likely to take up more room than it is worth, and possibly to do harm by giving the reader that 'little knowledge' which is 'a dangerous thing,' especially as it leads him to feel that it is all he needs to know. Dr. Shamel has guarded against this mischievous result by abundant references to technical literature; and his outline of the subject, though necessarily sketchy, and perhaps somewhat uncritical, is intelligent and suggestive.

"The same may be said of his statement of the law, as expressed in the U. S. Rev. statutes, together with their judicial exposition down to the present date. His statements under this head are always intelligent, generally correct, and very seldom open to hostile criticism from a legal standpoint; and, since he furnishes, for the use of those readers who desire more detailed guidance, ample references to classic authorities and official reports, I do not see how his book can be otherwise than instructive and suggestive, even to those whom it may only stimulate to further research.

"In the third department of the treatment of his subject, namely, that of historical review and critical argument, and especially the author's defence of the 'extralateral right,' as a feature of the 'law of the apex,' statements and opinions are advanced with which I cannot concur, and important facts and conditions are ignored, which, in my judgment ought to be taken into consideration \* \* \*

## CANADIAN MINING INSTITUTE.

At meetings of the council of the Canadian Mining Institute held in Montreal, Quebec, in October and December, respectively, the following gentlemen were elected to membership in the institute:

Elected in October—

Corresponding Members—M. Walton Brown, secretary of the North of England Institute of Mining Engineers; Bennett F. Brough, secretary of the Iron and Steel Institute; Dr. Wm. Campbell, Columbia University, New York; Dr. J. F. Kemp, Columbia University, New York; Dr. A. C. Lane, state geologist, Lansing, Michigan; Dr. C. K. Leith, Madison, Wisconsin; C. McDermid, secretary of the Institution of Mining and Metallurgy; Dr. R. W. Raymond, secretary of the American Institute of Mining Engineers, New York; and Dr. C. R. Van Hise, president of the Wisconsin University, Madison, Wisconsin.

Members—J. W. Astley, Victoria, B.C.; C. S. Baker, Greenwood, B.C.; P. McN. Bennie, Niagara Falls, New York; Charles Biesel, Phoenix, B.C.; W. B. Bishop, Grand Forks, B.C.; L. L. Bolton, Lake Superior Corporation, Sault Ste. Marie, Ont.; Cecil M. Bryant, Vancouver, B.C.; James Buchanan, Trail, B.C.; L. P. Burns, Toronto, Ont.; Lorne A. Campbell, Rossland, B.C.; R. C. Campbell-Johnston, Vancouver, B.C.; N. J. Cavanaugh, Nelson, B.C.; T. W. Cavers, Rossland, B.C.; Andrew Colville, Coal Creek, B.C.; Paul S. Coul-drey, Rossland, B.C.; J. K. Cram, Rossland, B.C.; Dr. Fritz Cremer, South Works, Illinois Steel Company, South Chicago, Ill.; Graham Cruickshank, Rossland, B.C.; W. S. Drewry, Nelson, B.C.; G. W. Dunn, Rossland, B.C.; Jacob M. Eggert, New Liskeard, Ont.; Newton W. Emmens, Trout Lake, B.C.; J. B. Farquhar, Dominion of Canada Assay Office, Vancouver, B.C.; James Findlay, Vancouver, B.C.; Francis N. Flynn, Cobalt, Ont.; A. L. Fowler, Cobalt, Ont.; S. N. Graham, Mina El Favor, Hostotipaquillo, Jalisco, Mexico; R. H. Hewer, Greenwood, B.C.; Lewis Hind, Three Forks, B.C.; A. C. Horton, Cobalt, Ont.; Alexander Kaye, Vancouver, B.C.; A. G. Langley, Vancouver, B.C.; — Le Rocque, Labelle, Quebec; O. E. Le Roy, St. Andrews East, Quebec; James Lockwood, Edmonton, Alta.; Lee J. Lockwood, Cobalt, Ont.; George W. McCaskell, Cobalt, Ont.; C. H. McDougall, Phoenix, B.C.; W. D. McGregor, Victoria, B.C.; M. D. McIntosh, Greenwood, B.C.; A. L. McKillop, Nelson, B.C.; W. St. John Miller, Grand Forks, B.C.; Chas. T. Mitchell, Grand Forks, B.C.; J. O'Sullivan, Vancouver, B.C.; Francis J. Peck, Cleveland, Ohio.; M. E. Purell, Rossland, B.C.; John Redington, Cobalt, Ont.; Fraser D. Reid, Cobalt, Ont.; John F. Robertson, Greenwood, B.C.; Chas. Rundberg, Phoenix, B.C.; James Rutherford, Victoria, B.C.; J. M. Sands, Rossland, B.C.; Chas. D. Smith, Cobalt, Ont.; O. B. Smith, Jr., Phoenix, B.C.; M. H. Sullivan, Trail, B.C.; Clifford Varcoe, Greenwood, B.C.; E. H. Vaughan, Grand Forks, B.C.; Julius H. Warner, Haileybury, Ont.; E. B. Webster, Greenwood, B.C.; E. W. Widdowson, Nelson, B.C.; Wakeley A. Williamson, Grand Forks, B.C.; Franklyn Wilson, Greenwood, B.C.

Associate Members—E. Cave Browne-Cave, Vancouver, B.C.; G. O. Buchanan, Kaslo, B.C.; F. W. Chalmers, Cobalt, Ont.; Gerald Chown, Kingston, Ont.; Martin Cohn, Ottawa, Ont.; J. W. Collis, Vancouver, B.C.; Smith Curtis, Rossland, B.C.; A. C. Flumerfelt, Victoria, B.C.; Harvey D. Graham, Haileybury, Ont.; J. T. Hillis, Vancouver, B.C.; S. H. Logan, Cobalt, Ont.; William Pitkethly, Heaslip, Ont.; Duncan Ross, Greenwood, B.C.; H. E. Wade, Nelson, B.C.; E. W. Monk, Nelson, B.C.

Student Member—John N. Morrison, Glace Bay, N.S.

Elected in December—

Members—Thomas R. Drummond, Cobalt, Ont.; Cosmo T. Cartwright, Trail, B.C.; Geo. H. Barnhart, Nelson, B.C.; Heinrich Ries, Cornell University, Ithaca, N.Y.; W. E. Segsworth, Toronto; Chas. Merry, Ferguson, B.C.; F. N. Flynn, Cobalt, Ont.; R. R. Cormack, Rossland, B.C.; D. J. Browne, Rossland, B.C.; L. P. Silver, Montreal; W. H. Hammy,

## COAL MINES REGULATION ACT

## BOARDS OF EXAMINERS.

**N**OTICE is hereby given that the following constitute the Boards of Examiners for the various Collieries during the year 1908:—

## CUMBERLAND COLLIERY.

Appointed by the Owners—Charles Matthews.  
Alternates—David Walker,  
David Nellist.

Appointed by the Lieut.-Governor in Council—John Kesley.  
Elected by the Miners—Joseph W. Horbury.  
Alternates—Alexander McNeil,  
Thomas Leeman.

All persons interested may obtain full information by applying to the Secretary of the Board, Mr. John Kesley, of Cumberland, B.C.

## EXTENSION COLLIERY.

Appointed by the Owners—Alexander Bryden.  
Alternates—Alexander Shaw,  
William Jones.

Appointed by the Lieut.-Governor in Council—W. G. Simpson.  
Elected by the Miners—James Glen.  
Alternates—Thomas Doherty,  
William Anderson.

All persons interested may obtain full information by applying to the Secretary of the Board, Mr. W. G. Simpson, Ladysmith, B.C.

## NANAIMO COLLIERY.

Appointed by the Owners—George Wilkinson.  
Alternates—Charles Graham,  
John Newton.

Appointed by the Lieut.-Governor in Council—Thomas Budge.  
Elected by the Miners—John Carr.  
Alternates—George Moore,  
Daniel Livingston.

All persons interested may obtain full information by applying to the Secretary of the Board, Mr. Thomas Budge, Nanaimo, B.C.

## MICHEL COLLIERY.

Appointed by the Owners—John Bastian.  
Alternate—Joseph Thomas.

Appointed by Lieut.-Governor in Council—Robert Middleton.  
Elected by the Miners—Thomas George Harries.  
Alternates—Frank Campbell,  
Charles Fuchs.

All persons interested may obtain full information by applying to the Secretary of the Board, Mr. Robert Middleton, Michel, B.C.

## COAL CREEK COLLIERY.

Appointed by the Owners—David Martin.  
Alternates—John Hunt,  
Harry Miard.

Appointed by Lieut.-Governor in Council—John McCliment.  
Elected by the Miners—Robert Adamson.  
Alternates—Joseph Lane,  
Abraham Brown.

All persons interested may obtain full information by applying to the Secretary of the Board, Mr. John McCliment, Coal Creek, B.C.

NOTE.—Alternates act as Members of the Board in the absence of those regularly appointed or elected to act thereon.  
Dated this 23 day of December, 1907.

RICHARD McBRIDE,

Minister of Mines.

Rosslund, B.C.; Robert H. Stewart, Rosslund, B.C.; A. G. Hill, Toronto, Ont.; L. J. Lockwood, Cobalt, Ont.; L. B. Burns, Toronto, Ont.; W. A. Davidson, Blairmore, Alta.; W. R. Askwith, Hatleybury, Ont.; Nicholas Richardson, Port Morien, C.B.; James Hargreaves, Taber, Alta.

Associate Members—Alfred Tarut, Outremont, Quebec; N. P. Bryant, Montreal, Quebec.

Corresponding Members—C. B. Going, editor, *Engineering Magazine*, New York; J. D. Kendall, consulting mining engineer, London, England.

#### MINING MEN AND AFFAIRS.

J. McLellan, formerly resident in the Lardeau district, was in Victoria in December.

Frank B. Smith, of Edmonton, Alberta, lately paid another visit to Victoria.

Louis Pratt, of Sandon; A. D. Wheeler, of Ainsworth; and W. E. Zwick, of Kaslo, were in Spokane in December.

W. R. Rust, general manager of the smelter at Tacoma, Washington, has gone to Europe on a three months' visit.

W. J. Elmendorf lately left Whitehorse, Yukon Territory, for his home in Spokane, Washington, where he is spending the winter.

John M. Harris, of the Star and Reco mining companies, returned to the Slocan from Spokane about the end of December.

Robert Smart, Dominion Government assayer at Whitehorse, Yukon Territory, was a visitor to Seattle, Washington, about the close of the year.

John F. Miller, of Trail, superintendent of the Consolidated Mining and Smelting Company's lead refinery, was a visitor to Spokane in December.

J. A. Whittier, manager of the Goodenough mine, Slocan, has suspended work on that property for the winter, which he is spending at Nelson.

G. O. Buchanan, of Kaslo, is again kept busy in connection with the payment of the bounty on lead, the fall in the market price having again brought the Bounty Act into operation.

Bruce White, of Nelson, left that city about the middle of December for one of the Queen Charlotte Islands, to there examine some mineral claims for United States capitalists.

J. F. Silverman, of Frank, Alberta, vice-president of the Canadian-American Coal and Coke Company, went to Great Falls, Montana, early in December on a visit.

*Mining Science*, of Denver, Colorado, U.S.A., says: "Geo. H. Barnhart, of Nelson, B.C., is in charge of operations for the Torpedo-Eclipse Mining Company, Orray, Colorado."

George Leyson, one of the pioneers of the Boundary district, and in 1906 superintendent of the Silver Queen mine, Cobalt, Ontario, lately took charge of the Cobalt Contact property as manager.

E. E. Reynolds, formerly manager of the International Coal and Coke Company's colliery at Coleman, Alberta, and now manager for the Diamond Company at Lethbridge, was in Frank recently.

R. H. Stewart, of Rosslund, manager of the mines of the Consolidated Mining and Smelting Company of Canada, has gone east to be married. He planned to visit Europe with his bride before returning to Rosslund.

Robert R. Hedley has been visiting the coal mining districts of Alberta, prior to proceeding to Ottawa to prepare for publication the mass of mining information he obtained in the West.

R. P. Butchart, manager of the Vancouver Portland Cement Company, left Victoria recently on a trip East. He will visit New York and go thence to Mexico before returning to Victoria.

Neil McL. Curran, manager of the North Star mine at Kimberley, East Kootenay, left for the East on December 10.

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Before returning he will probably spend several weeks with relatives in England. He was accompanied by Mrs. Curran.

During December J. E. McAllister, of Greenwood, manager of the British Columbia Copper Company, paid a visit to Spokane. Frederic Keffer, the company's engineer and geologist, about the same time made a trip to the Similkameen district.

Oleott Payne, manager of the Hewitt Mining Company, has returned from New York. While in the East he made arrangements for the supply of an air compressor for the Hewitt mine, near Silverton, Slocan Lake, and an electric generator for the mill on Four-mile Creek.

Certificates of efficiency as assayers have been issued by the provincial minister of mines to Arnold S. Langley, Leigh Richmond, Stuart S. McDiarmid, and Allan B. Ritchie, all of whom passed the examination for assays held at Victoria on December 2 and following days.

Ernest Mills, formerly of Greenwood, in the Boundary district of British Columbia, where he was an active worker for the Western Federation of Miners, has been appointed secretary of that body in the place of James R. Kirwan, who resigned owing to ill health.

Andrew Colville, who lately resigned the position of superintendent of the Crow's Nest Pass Coal Company's Coal Creek colliery, was given a valedictory smoking concert and presented with a gold watch and other valuable gifts by the miners and others at Coal Creek before he left for the East.

E. Stables, of London, has left British Columbia on his return to England. For several months, until a recent suspension of work, he had charge of the Lenora mine at Mt. Sicker, Vancouver Island, for the Vancouver Copper Company, of London.

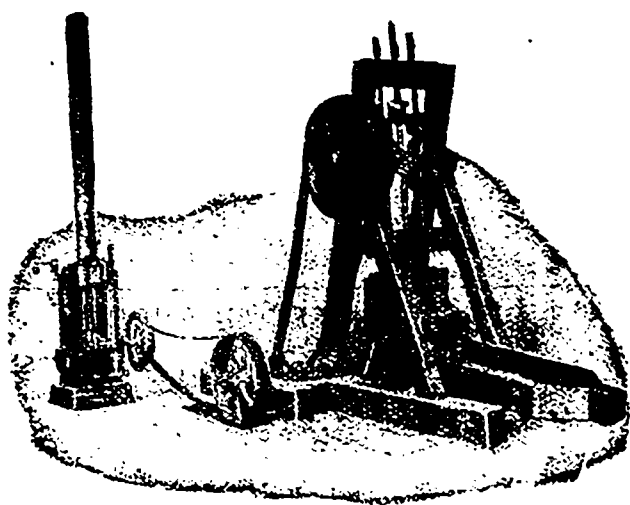
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Milnor Roberts, dean of the school of mines at the University of Washington, Seattle, Washington, U.S.A., after having spent the summer in southeast Alaska, has resumed his duties at the university. The special three-months course for mining men will be commenced at that school of mines on January 6, prox.

Einar Lindeman left Victoria on December 13 for Seattle, Washington, on his return to Ottawa, Ontario. He proposed obtaining at the former city information relative to the iron smelting furnace at Irondale, near Port Townsend, in case he shall find it desirable to include a description of it in his report to the Dominion department of mines, on the iron ore occurrences on Vancouver Island and at other places on the coast which he has examined during the last six months.

Albert I. Goodell on leaving Northport, Wash., to take charge of the Sullivan lead smelter at Marysville, East Kootenay, B.C., was presented by the employees of the Northport smelter, of which he recently resigned the management, with a handsome diamond-set watch charm. The presentation was made by John Barnes, who, on behalf of the smelter men, expressed appreciation of the harmonious relations that had long existed between the manager and men. Mrs. Goodell was also the recipient of a useful present, also from the smelter employees. John Barrett, general foreman at the Northport works, having arranged to go to Marysville with Mr. Goodell, was presented by his fellow workmen with a hunting case gold watch, suitably engraved. Mr. Barrett was shift boss and foreman at Northport for about six years.



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ANY available Dominion Lands within the Railway Belt in British Columbia, may be homesteaded by any person who is the sole head of a family, or any male over 18 years of age, to the extent of one-quarter section of 160 acres, more or less.

Entry must be made personally at the local land office for the district in which the land is situate. Entry by proxy may, however, be made on certain conditions by the father, mother, son, daughter, brother or sister of an intending homesteader.

The homesteader is required to perform the conditions connected therewith under one of the following plans:

(1) At least six months' residence upon and cultivation of the land in each year for three years.

(2) If the father (or mother, if the father is deceased), of the homesteader resides upon a farm in the vicinity of the land entered for, the requirements as to residence may be satisfied by such person residing with the father or mother.

(3) If the settler has his permanent residence upon farming land owned by him in the vicinity of his homestead, the requirements as to residence may be satisfied by residence upon the said land.

Six months' notice in writing should be given to the Commissioner of Dominion Lands at Ottawa of intention to apply for patent.

COAL.—Coal mining rights may be leased for a period of twenty-one years at an annual rental of \$1 per acre. Not more than 2,560 acres shall be leased to one individual or company. A royalty at the rate of five cents per ton shall be collected on the merchantable coal mined.

W. W. CORY,  
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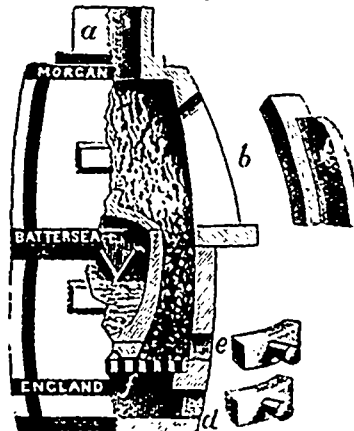
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  - e. Civil Engineering
  - f. Mechanical Engineering.
  - g. Electrical Engineering.
  - h. Biology and Public Health.