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MINING RECORD

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E. JACOBS.....Manager and Editor

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NOTES AND COMMENTS.

The discovery of free gold near Lawn Point, Northern Vancouver Island, has been reported.

Mineral exhibits at the Spokane Exposition from Kootenay and Boundary districts won many prizes.

The Kaslo *Kootenian* states that mining around Sandon, Slocan, is now more active than for years.

The bunk houses lately erected at the Blue Bell mine, near Ainsworth, will accommodate 80 men.

The Lake Shore shaft of the St. Eugene mine, East Kootenay, is being deepened to 600 ft.

A few men are kept at work at the Iron Mask mine, Kamloops, pending a visit from the directors.

The lowest levels of the Queen Bess mine, Slocan, have been leased and the lessees have commenced work in them.

The V. V. and E. railway has been completed to Keremeos. Grading thence to Hedley, Similkameen is in progress.

From Ashcroft comes news that at the Tamarac a well-mineralized vein about 8 ft. in width has lately been discovered.

Considerable quantities of marble are being shipped from the quarry near Kaslo for use in buildings being erected in Nelson.

District newspapers state that the St. Eugene mine disbursed a total of \$44,000 as pay on August account.

James Cronin, of Spokane, Washington, is reported to have bonded Dibble and Brewer's mineral claims, situated in the Babine Mountains, Skeena mining division, for \$40,000.

A third instalment of the purchase money for the Queen Victoria mining property near Nelson has been paid to the seller by the Cronin syndicate.

Coke is being obtained from Australia for the Britannia Smelting Company's smelter at Crofton, Vancouver Island. It was found impossible to get sufficient British Columbia coke to keep the works regularly supplied.

In many ways, observes the Cranbrook *Prospector*, the mining industry of southeast Kootenay during the past year has shown vitality and displayed great progress and promise. The outlook for 1908 is exceedingly bright.

A mining class will meet on two evenings a week at Nanaimo during the winter months. The *Herald* says that B. Browitt, who will conduct it, is well qualified to do so as he holds first-class certificates as mine manager for British Columbia, England, and Illinois, U.S.A.

Some bars of silver bullion, from Silver Gance ore, reduced by Jas. A. McFarlane, assayer, were among the miscellaneous exhibits at the Kaslo fair. The Silver Gance claim is a high-grade silver property.

A cake of gold, value \$3,300, was received in Nelson recently from the Kootenay Belle mine, situated in the Salmo section of Nelson mining division. This was recovered from rather more than 200 tons of ore, which therefore averaged between \$16 and \$17 per ton.

Satisfactory progress at the Cambrian Mining Company's property at Moyie Lake is reported. About 35 ft. of the caisson shaft has been constructed and lowered into the lake. A steam boiler and 4-drill air compressor have been installed and buildings are being erected for the protection of the plant.

The manager of the Fern mine informed the Nelson *Daily News* about the middle of September that he had two carloads of concentrate ready for shipment to a smelter whenever he shall have made suitable arrangements for its treatment. There is plenty of ore in sight, and about 100 tons per week are being put through the 10-stamp mill at the mine.

We have to acknowledge the courtesy of the editor of the *Mining and Scientific Press*, of San Francisco, in acceding to our request for the use of the engraving block showing, on p. 357 of this issue, part of the smelting works of the British Columbia Copper Company, at Greenwood, Boundary district.

On September 14 the Grand Forks *Gazette* said: During the past week the Granby smelter has been

running eight furnaces and making a splendid average of about 3,000 tons a day. This is the first time since the enlargement of the furnaces that the whole battery has been in commission steadily.

The Barkerville correspondent of the Ashcroft *Journal* lately wrote: "The air locks in the main tunnel at Slough Creek were closed the second week of September to keep the bulk of the water from the shaft and pumping was discontinued. In the meantime a comprehensive development scheme for this property is under consideration."

The Fernie *Free Press* says: John Brown, manager of the Pacific Coal Company's mines at Hosmer, Crow's Nest Pass, went up the Elk River the first week in September to inspect progress on the new wagon road. Bridges are badly needed on this route and the Provincial Government should do something to assist development in the Upper Elk. It is impossible to get up during high water.

"It is a difficult matter to forecast the fortunes of a mining camp, more particularly an old one, but it is truly believed that Camp McKinney offers as good a prospect as any mining camp in the Province, to give a good return for the investment of capital, provided always that such capital shall be intelligently expended." The foregoing is the opinion of one who knows that camp well.

The Rossland *Miner* appears to be gradually recovering from the insidious malady it has had the misfortune to have suffered from for several weeks, viz., shortage-of-coke hysteria. Now that the Boundary doctors have correctly diagnosed its case and agreed upon "isolation" treatment rather than "arbitration," its own family physician, following his discovery that the disease had not proved nearly so "ketchin'" as he had expected it would, has reviewed its symptoms, changed its medicine, and varied its diet. As a result its early convalescence may be looked for. It is not likely to suffer a relapse until such time as demoralizing conditions shall be general rather than merely local—if they shall ever be.

A correspondent writing from Beaverdell, a mining camp on the west fork of Kettle River, Boundary district, sends the following information: Things are quiet here, but a number of mineral claims on Wallace Mountain are looking well. I have been doing some work on a claim called the Buster, located just above the Rambler, and have a fine showing on it. I had an assay of ore from 8 ft. down in the shift which ran \$153.38. I have sunk 15 ft. and the ledge at that depth has widened to 2 ft. 6 in. The Rambler has shipped five cars of ore, which ranged from \$80 to \$179 per ton. I understand the Sally group looks well and the owners have shipped a lot of ore. The Duncan is looking fine and so is the Kocomo, which is taking out ore.

The Nelson *Daily News* on September 21 published the following: H. Mortimer Lamb, formerly editor of the B. C. MINING RECORD, published at Victoria, and now secretary of the Canadian Mining Institute, is making a tour of the Province for the purpose of organizing a British Columbia branch of the Institute. He has been very successful so far in eliciting the support of the mining men of the Province and on January 15 next a general meeting will be held in Nelson at which officers will be elected and papers read.

Says the *Kaslo Kootenian*, "Keep your eye on the Duncan, the scene of the next great mining stampede." The Duncan country is in the northern part of Ainsworth mining division, over the divide from Ferguson camp. It can be reached from the south *via* Kootenay and Howser Lakes and thence up the Duncan River, or from the north *via* Arrowhead, Trout Lake City and Ferguson, by train, steamer and stage, and thence by trail. There are known to occur on the Duncan slope many excellent mineral showings, but the absence of wagon roads and other transportation facilities has prevented the development to any considerable extent of the mineral resources of what has long been regarded as one of the most promising mining sections of northern Kootenay.

Newspaper reports indicate that D. R. Young, now of Victoria, well-known in the Kootenay and Boundary districts in connection with questionable mining ventures, has turned his attention to Queen Charlotte Island mining schemes. The MINING RECORD suggests to all concerned that before putting money into any new mining "proposition" of Mr. Young's they make careful enquiries at Nelson and elsewhere concerning the experience of those who in past years were induced to buy stock in the Similkameen Valley Coal and Ashnola Smelter schemes, so persistently "boosted" by this man. Then there were the Monashee Mountain and British Empire gold mining failures. May this "word to the wise" be sufficient.

"There has been a deal of dissatisfaction in the past," observes the Nelson *Daily News*, "over the fact that Michel was a closed town, that no lots could be bought therein and that the Crow's Nest Pass Coal Company could, in effect, dictate who should or who should not live and do business there. The Michel townsite having now been placed on the market, this cause of complaint will be removed. But more important in our opinion than the throwing open of the townsite is the fact that the company is apparently prepared to facilitate the securing of homes by its employees. We have always believed that one of the most effective means of securing stable conditions in any industry where large numbers of men are employed is to encourage them to secure homes of their own."

A circular letter has been mailed to members of the Canadian Mining Institute intimating to them that those contemplating contributing papers to the Proceedings, these to be presented at the next annual meeting (which will be held during the first week in March, 1908), will greatly oblige the secretary by filling in and returning to him as promptly as possible the form accompanying the letter. It is desirable that the manuscripts of all papers shall reach the secretary not later than December 1, next, to admit of the papers being printed and advance proofs distributed among members for purposes of discussion. No mention is made in the circular under notice of the place of meeting, but it is probable either the ordinary annual meeting or a special meeting will be held in British Columbia next year.

Shipment of ore from the Queen Victoria mine, situated a few miles from Nelson, West Kootenay, has been stopped. N. J. Cavanaugh, resident manager, has been reported by the Nelson *Canadian* to have said: "It is not true that we are closing down the mine. It is true, however, that we have stopped shipping ore, and have let three-fourths of our muckers go. We have six men and are going ahead with development work. I can't say how long it will be before we shall resume shipments. The reason is fairly simple and definite. With the present cost of labour and price of copper there is very little profit in mining. It is only worth while to mine the best ore, and rejection of all the rest involves a waste of labour and values. It is sacrificing a property to operate under the circumstances." The Queen Victoria has since the middle of last winter employed a force varying from 20 to 25 men, and has been, with one brief intermission, a steady shipper to the Trail smelter.

Ore shipments from Kootenay and Boundary district mines during the week ended September 21 reached a total which is the highest on record for those districts. The Nelson *Daily News* published particulars; the following are the district totals:

	Tons.
From Boundary mines	41,493
" Rossland mines	7,112
" Nelson and Ymir mines	1,131
" Ainsworth and Slooan mines	777
" Lardean mines	230
" East Kootenay mines	734
	51,477

As the greater part of this comparatively large production was from Boundary mines, it is not expected there will be any considerable reduction in total output result from the fall in the price of copper, for those mines can produce copper at a profit even with the price as low as at present.

Will the self-constituted authority on Crow's Nest Pass Coal Company matters who last July asserted that "some months ago he was credibly informed that the company would be reorganized and that the passing of the concern into American hands would involve a total change of management," now turn his inventive powers in some other direction. The president, vice-president, and at least two other directors of the company have lately each given a separate and specific denial to newspaper reports to the effect that G. G. S. Lindsey was to be retired from the position of managing director or general manager. And will he now act on his own suggestion and transfer his "slanderous comments" to the one "who openly made the above statement" and "had the courage" to publish what was utterly untrue.

It is not generally known that a few weeks ago there was discovered in the Le Roi mine at Rosslund a shoot of ore carrying a higher value in gold than that of the average grade of ore for some time past shipped from the mine. This ore was encountered in a cross-cut from the Black Bear tunnel, on the 300-ft. level. It was regarded at the time as probably important, for the reason that it occurs farther south than any other shoot of ore previously met with in the mine. While not a very large ore body, it has been opened along a distance of about 80 ft. and found to maintain its generally higher grade throughout. A cross-cut is being driven at the 500-ft. level with the object of finding this ore shoot at that depth also. Developments continue to be satisfactory in the deeper workings of the mine. The winze has been deepened from 1,650 ft. to 1,750 ft. and is still in ore. The work of connecting the big main shaft with the winze at the 1,650-ft. level has been completed, the connecting drive being about 280 ft. in length.

We have learned that in the mail lost when the steamer *Northwestern* was wrecked in the Skeena River a short time ago, was a letter addressed to the *Mining Record*, in which a strong protest was made against the alleged action of the *Bulkley Pioneer*—if that be the correct name of the small newspaper published in the upper Skeena country—in publishing as an editorial such parts of the official report of W. W. Leach of the Geological Survey of Canada as appeared to be favourable to the district and leaving out others not so. This manipulation of an official report our informant took strong exception to. While the newspaper named is by no means alone in doing such a thing, others having set the example in their respective districts, the course taken is none the less reprehensible. However, the person claiming to own the offending publication here complained against probably acted according to his lights. Perhaps they are dim as viewed from the standpoint of those who try to tell the whole truth. If so, it may be that he is to be pitied more than blamed.

We have pleasure in calling attention to the mining enterprise of the Portland Canal Mining and Development Company, Limited, an illustrated description of the property of which is printed on pp. 337-43 of this issue. The company is a local organization, with head office at Duncan, Vancouver Island, and its directors men of good repute and well known there and in Victoria. In addition, we have been informed, we believe reliably, that the mining property being developed on Glacier Creek is showing up well, in fact is regarded as one of the most promising known in the Portland Canal district. Not infrequently it seems desirable that we warn our readers against company flotations which in themselves, or by reason of evident objections to either the promoters or the property, or both, do not in our judgment merit commendation. In the case of the Portland Canal Mining and Development Company, though, we believe we are justified in taking a favourable view, for we think it is a case where honest men have set about developing a promising prospect into a payable mine. Of course we cannot guarantee they will succeed, but we have no hesitation in expressing the opinion that if they fail it will not be for lack of honest and persistent endeavour. We wish them a full measure of success. Some of the engraving blocks used to illustrate the article under notice have been kindly lent to us by the Provincial Bureau of Mines, the courtesy of whose officials we here acknowledge.

At the Tyee Copper Company's smelter at Ladysmith, Vancouver Island, the furnace was in blast every day throughout August. Whilst we have no official assurance that such was the case, we believe we are correct in stating that this was the first full month's furnace run the company has made. For several years the supply of ore was hardly sufficient to keep the furnace running half of each successive month. Latterly, partly as a result of the company's long persistence in keeping its ore buyer in the field seeking fresh supplies of ore, custom ore receipts have steadily increased until now there is not only ample to keep the furnace continuously in blast, but the matter of installing a second furnace has been receiving the serious consideration of the board of directors. This is an eminently gratifying condition of affairs in connection with the company's smelting business, the more so since it is the direct outcome of years of honourable dealing with, and prompt returns to, those who have sent custom ore to the Tyee smelter, so that full confidence in the officials of the company is general, and of the long-continued policy of keeping in close touch with developments in new mining camps in the Coast districts, particularly those in southeast Alaska. No company seeking custom smelting business north of the International Boundary line is better informed than the

Tyce concerning what copper ore deposits have been discovered in northeast Pacific coast districts, and their ore-producing capabilities so far as shown by developments to date; nor has any other company been so energetic or enterprising in effort to secure whatever smelting business was obtainable on terms that would leave a small margin of profit to the smelter. The company's position is also singularly advantageous in this respect—its smelter stands alone among those of Vancouver Island and Alaska in being assured of a regular supply of coke from the Wellington Colliery Company's ovens on the Island, its fuel supply being provided for under contract. Add to this considerable advantage that of the company's strong position financially, as exhibited by the balance sheet printed elsewhere in this issue of the *MINING RECORD*, and it will be readily seen that not only are there excellent grounds for satisfaction with the substantial progress it has made in establishing a smelting business mutually advantageous to mine owners and itself, but that it may be reasonably expected its operations will be steadily enlarged and beneficial results be increased to both ore shippers dealing with it and its own shareholders.

The *Mining and Scientific Press* of San Francisco included in the "Special Correspondence" it published on September 14 a letter dated from Vancouver, B.C., the burden of which was the alleged grievance of the coke shortage. As this was the first letter from Vancouver we had seen in that journal this year, we asked ourselves the reason for its appearance and when we detected in it one particular error in figures we had previously seen in the *Rosslund Miner* we at once suspected that the "inspiration" which led to its having been written and sent to San Francisco may have been identical with that which so suddenly galvanized the *Rosslund* journal into active hostility to the Crow's Nest Pass Coal Company. It is not with this "special correspondence" we wish to now briefly deal, though, but with the comment it apparently prompted the editor of the *Mining and Scientific Press* to make. Now we have for the editor of that journal a strong personal regard and a high appreciation of his ability. We have never met the gentleman, but as a result of several years' observation of his forceful style and what we have been impelled to believe to be his strict sense of justice, he has been in marked degree an example whom in our humble way, if he will pardon our saying so, we have not hesitated to follow. He will, we have confidence, therefore accept the following comment in the kindly spirit in which it is made. We think the editor of the *Mining and Scientific Press* was misinformed upon certain salient points when, in his editorial criticism, he made it appear that Mr. J. J. Hill of the Great Northern Railway had "got the coking coal of the Northwest under his thumb." Shortly, we may point out that the places in the northwest at which coke-making has been carried on last year and this are Fernie, Michel

(both with Crow's Nest Pass Coal Company's plants), Lille and Coleman. The latter two are in southwest Alberta, and supply the smelters of the British Columbia Copper and Dominion Copper Companies, neither of which had been obtaining coke from the Crow's Nest Pass Coal Company for a long while prior to the recent trouble. The Great Northern Railway has rail connection with Fernie only, while the Canadian Pacific has with all four places. Again, it is not a fact, as asserted, that "other deposits of coking coal than those now being exploited are not available for the Canadian Pacific Railway or the Government of Canada, because Mr. Hill owns blocks of land commanding access to them." Neither the Dominion Government's coal lands near Morrissey nor the mines the C.P.R. Company's auxiliary organization, the Pacific Coal Company, is opening at Hosmer—not to say anything of C.P.R. coal lands in the upper Elk district now being prospected, and all the coal properties in the eastern foothills of the Rocky Mountains—is inaccessible to the Government or the C.P.R. as stated. On the contrary, there is no insurmountable obstacle we know of to either or both obtaining access to such of these points as are not already reached by the C.P.R. It does not appear necessary to further show that the editorial comments under notice were made under a misapprehension as to the actual facts of the situation. We must, though, here express our emphatic disapproval of the disingenuousness of the *Rosslund Miner* in reprinting in its editorial columns, without fair explanatory comment, statements made by the editor of the *Mining and Scientific Press*, albeit in perfect good faith, yet upon incorrect information. It is not inconceivable, though, that occasionally the *Miner* finds out that "when the devil drives needs must."

We regret that we are unable to congratulate Mr. A. C. Flumerfelt on the result of his efforts to obtain for wide publicity valuable information concerning the mining and smelting industries of British Columbia apart from that given in the "Annual Report of the Minister of Mines" for 1906. In that gentleman's announcement of the object he had in view in offering seven prizes of a value of \$50 each for "the most complete answers" regarding the seven stated subjects he had chosen, the following occurred: "Mining and Smelting.—Give a description, by districts of the various coal and mineral areas; an account of the work now proceeding; detail production for 1906; value of same; average number of hands engaged; practical suggestions for developing and increasing this most important industry." On pp. 344-350 of this number of the *MINING RECORD* we reprint the first prize essay. No information has reached us as to the number of essays there were submitted in this competition, but it seems to us that if there were several others and the one published is the best, the response to Mr. Flumerfelt's invitation to compete was chiefly from those not well

qualified to deal with "this most important industry." It appears also, as if the competition was hardly a fair one, in that it is evident the successful competitor had access to official information that was not available to the public until after the date named for delivering the essays, and which constituted the chief feature of the prize essay. So far as the statistical tables and other official information included in this essay are concerned, they are of course not here subjected to criticism. Most of the information they give was shortly afterwards published as part of the official "Report of the Minister of Mines" for 1906. As to the remainder of the essay, we are of opinion it should have been rejected on account of the inaccuracy of many of its assertions, its faulty literary composition, the want of connection between statements of what are supposed to be the facts it sets forth, the sparseness of its information relative to the smelting industry, and the insufficiency of its practical suggestions. It is, we think, a pity the question of determining the merit of the essays on this particular subject was not left to judges well informed as to the accuracy or otherwise of their details. We will give three instances we could mention a dozen or more of what we have in mind in making this comment. In the prize essay, under the sub-head "Quesnel Division," it is stated that the Cariboo Gold Mining Company (even the name of the company is wrongly quoted) has at Bullion "ten miles of auriferous channel, a face over 350 ft. high, which has averaged 25 cents per cu. yd." Well, assuming that the value given is intended to be that of the gold-bearing gravel (not that of the channel or the face), we refer our readers to p. J 50 of the "Annual Report of the Minister of Mines" for 1905, where Mr. J. B. Hobson, the manager of the Consolidated Cariboo Hydraulic Mining Company, Limited, is quoted as reporting the results of hydraulic mining through seven successive seasons 1899-1905, which show an average value of gold recovered of rather under nine cents per cu. yd. of gravel washed. Again, under the sub-head "Omineca Division," it is stated that "anticipation of railway development has resulted in the location of diggings, said to be rich, on the Peace, Pine and Parsnip Rivers." No reliable information of the finding of gold in payable quantities on these rivers has come under our notice, neither have we met anyone who has any. Once more, the ore from the Brown Alaska Company's mine at Maple Bay is described as "a self-fluxing copper"; on the contrary, it is a highly silicious ore, containing chalcopyrite—an undesirable ore for smelting purposes where there is not plenty of iron to flux it. Numerous other inaccuracies might be pointed out, but it is not our present purpose to go farther into details. We only repeat, in conclusion, that we regret we cannot congratulate Mr. Flumerfelt on the result of his well-meant efforts: we think he has been decidedly unfortunate in this outcome of his public spiritedness so far as this particular subject is concerned.

GOVERNMENT INTERFERENCE UNNECESSARY.

Smelter Managers Think Proposed Arbitration Useless.

THE COKE SHORTAGE DIFFICULTY has been solved and the general feeling is that no useful purpose can be served by proceeding with the proposed arbitration, consequently it is thought the Provincial Government will do well to refrain from going on with it. The Vancouver *News-Advertiser* (which, by the way, at once recognized that there was more behind the agitation of a few weeks ago against the Crow's Nest Pass Coal Company than was permitted to be apparent to the general public, and so would not publish the highly coloured despatches sent out from Rossland by the C.P.R. Company's Associated Press organization) had gauged the situation fairly accurately when, on September 12, it published the following editorial comment:

"THE ALLEGED FUEL SHORTAGE.

"Some of the Provincial newspapers are urging the Provincial Government to take immediate steps to regulate the output of coal by the mines in the Crow's Nest Pass district and to impose such restrictions as may be thought desirable. In view of the improved conditions as regards labour and output which are reported, it would seem advisable for the Government to postpone action at the present time. The Government has the report of the deputy minister of mines on the result of his inquiry at the mines and smelters and will doubtless be guided by that. It is certainly not desirable to interfere with the ordinary course of trade without the fullest justification, and a month's delay in taking action will be better than interference by the Government, which may afterwards be found to have been unnecessary."

The temporary difficulty was in regard to the output of coke rather than coal; with this correction the foregoing view of the conditions and the accompanying advice to the Government were, as later experience showed, just what the occasion called for.

Reviewing the position away from the Trail-Rossland "storm centre" it is now evident that the agitation resulting from the "jumping" of district boards of trade and labour unions when the chief manipulators pulled the strings, was quite uncalled for. A canvass of the views of smelter managers showed that those representing the Boundary district smelters were practically of one mind—they had not asked for arbitration and were satisfied that not only was it unnecessary but no good would result from it that would not be gained by waiting a short time so as to allow of the shortage of labour at the coke ovens, and of railway cars carrying the coke to the smelters, being remedied. The general manager of the Le Roi Company, owning the Northport smelter, held similar views. The smaller smelters at Nelson and

Marysville were not affected to so great an extent as the big copper smelters. As to Trail well Trail at first wanted arbitration and everything else that would aid in confounding those it regards as its enemies and who need not be named here.

Seeing, then, that a majority of those immediately concerned is not in favour of the Government going farther in the direction hastily demanded by certain organizations that were mistaken as to the requirements of the situation, it is hoped that this arbitration movement will be abandoned as unnecessary and futile.

THE VICTORIA EXHIBITION AND THE MINING INDUSTRY.

ON JULY 17 the manager of the *MINING RECORD* made enquiry, by letter, of the secretary-treasurer of the Provincial Exhibition, arranged to be held at Victoria at the end of September under the auspices of the B. C. Agricultural Association, as follows: "Is it intended to have a rock-drilling contest this year? If so, kindly let me know particulars, so that I may call attention to it in our next issue, 'copy' for which will be prepared within a fortnight. Or if nothing has yet been done in that direction, I shall have pleasure in inviting the attention of those interested with a view to their subscribing money for prizes for rock drilling." No reply was received to this communication. We have purposely deferred calling attention to the lack of ordinary courtesy thus experienced until after the exhibition had been held. Throughout some of the mining sections of the interior it has for years been generally accepted that the City of Victoria's interest in the mining industry, at any rate of the Kootenay and Boundary districts, was largely restricted to considerations of how much of their business it could secure. In view of the frequent claims we have seen made in Victoria daily newspapers to the importance of the mining industry of Vancouver Island and neighbouring parts, we had not looked for such seeming complete indifference to matters in which miners, quarrymen, and others are considerably interested. Further, it would appear as if this seeming indifference extends to everything connected with the mining industry, for notwithstanding that the pretentious name of "Provincial Exhibition" was officially used, an hour's careful search on the part of the editor of the *MINING RECORD* failed to disclose the inclusion in the varied display made of a single exhibit directly representative of the mining industry, the products of which in 1906 showed a value nearly as large as that of lumbering, agriculture and the fisheries of the Province combined. We remember that in 1903 the managers of the big annual exposition held in Spokane, Washington, in some measure slighted the mining interests, whereupon W. G. Gaunce of Greenwood wrote in such keenly sarcastic terms of that city's particular encouragement of dog fanciers' fads, as compared with

its inadequate recognition of mining, that the latter has ever since been accorded marked prominence, while the annual rock-drilling contests at the Spokane Exposition have so grown in popularity and widespread interest as to have become practically international in character. We can hardly think it possible the management of the Victoria exhibition intentionally took such a position as this: "We know mining is increasing in importance on the British Columbia coast, but while we wanted a 'bronco busting' exhibition every day of our show, we had absolutely no use for such a display of strength and skill as is required in a well-contested rock drilling contest. You miners of the Coast and Island districts may go to Seattle and spend your money there, as do the Yukon and Alaska men; we will not encourage you to come here. And as to exhibits of mining products, why, we know little about such things, and care less." We shall, therefore, not attempt to use the keen weapon Mr. Gaunce used with such good effect at Spokane. We do, though, earnestly submit to those concerned that it is not, in our opinion, a wise policy to so completely ignore the interests and pleasures of those connected with the chief industry of this Province, upon which, in the stated opinion of the writer of the Prize Essay printed elsewhere in this issue, "at least one-fifth of the total population of British Columbia is directly dependent." Further, we think it very probable the offering of a few prizes of fair value for rock-drilling and exhibits of minerals, respectively, together with systematic advertising of these as important parts of the exhibition, (excursion fares to and from Victoria are already customary) would in the course of a year or two result in a sufficient number of people being induced to come from the interior mining districts, as well as those of the Coast, as to make it well worth while giving these matters prominence as features of Victoria's annual exhibition.

The Dominion Geological Survey party in charge of D. D. Cairnes, which was engaged during several months of the current year in Yukon Territory, spent the greater part of the season in geologically examining the country along, and lying to the west of, the Lewes River between Whitehorse and Tantalus (the latter being situated about half way between Whitehorse and Dawson), and mapping portions of it. The work accomplished is intended to in some degree show the extent and position of the extensive bituminous coal measures crossing the river at Tantalus and extending in a southwesterly direction therefrom. This geological work was curtailed in order that Mr. Cairnes might collect statistical data, for the mines branch of the department, relative chiefly to the Dawson placers, which latter duty was completed before Mr. Cairnes left the Yukon for Ottawa.

A CHICKEN THAT CAME HOME TO ROOST.

EXAGGERATION and even positive untruth are by no means unusual in the so-called mining news published in many newspapers. Time and again the *Mining Record* has directed attention to distortions of facts and misstatements made in print relative to mining. It would appear that at least one person who has belittled the efforts of this journal in that direction has discovered that an ugly chicken will sometimes come home to roost.

A press despatch recently sent out from Vancouver was to the effect that a representative of an English syndicate had purchased the West Wellington coal mine, on Vancouver Island, for the sum of \$375,000 and that a company was to be organized with a capital of \$500,000. This story was published in several newspapers, whereupon Wm. Blakemore, who signed his communication in the capacity of "Consulting Engineer to the Company," wrote to the *Colonist* asserting that the report was untrue and that its circulation had already done considerable harm and was calculated to do more. He added: "I should not ask you to publish anything on this subject but for the fact that *nothing so greatly injures mining prospects as the circulation of exaggerated and incorrect statements.*"

While the statement contained in the words we have just now italicised is only in keeping with what the *Mining Record* has for years contended, we call attention to this endorsement of the wisdom of this journal's characteristic and consistent attitude in this matter as having come from a source quite unexpected by us. It is in strong contrast, though, to Mr. Blakemore's earlier attitude, in his paper *The Week*, in a similar connection. We take the following from the *Mining Record* of April, 1906, making only this suggestion—generally there is safety in taking heed to the displays of his "ignorance" by the "novice" who conducts the *Mining Record*: there may not always be in following the sometimes devious courses of certain pretentious experts. The extract mentioned—which includes the criticism of *The Week* and our comment thereon—follows:

"ANTHRACITE GALORE.

"The *B. C. Mining Record's* unreliability was "never better illustrated than when it undertook to "knock" the coal deposits of Queen Charlotte Island on April 23th, and on May 1st it was "announced that the Western Fuel Co., of Nanaimo, had taken an option on one group of claims for the substantial figure of \$700,000. "This comes of entrusting the conduct of a mining "journal to a novice, who is either unscrupulous "or ignorant, or both."

Now, apart from quoting three lines referring to the Graham Island coal from an article contributed by Mr. Blakemore in October, 1904, to *The Engineering and Mining Journal* of New York, the only reference we then made to "the coal deposits of

Queen Charlotte Island" was contained in the following: "But then, in 1904 it suited him (Blakemore) to 'boost' undeveloped coal measures on one of the Queen Charlotte Islands and depreciate the productive coal mines of Vancouver Island." We now ask: Were not the coal measures of the Queen Charlotte Islands correctly described as "undeveloped?" Undoubtedly they were, as is well and widely known.

Further—on Sunday, April 29, the *Nanaimo Herald* reprinted, under the caption: "IF IT WERE ONLY TRUE WHAT A STORY IT WOULD BE," an article to which it referred as follows: "Appended is an article that appeared in the *Vancouver World* on Friday last, on the front page of that truthful (!) journal, under head lines stretched across three columns, thus:

"ANTHRACITE FOUND IN QUEEN CHARLOTTE IS.

"Western Fuel Co., of Nanaimo, Secures Claims "for \$700,000—General Manager to go North to "Initiate Development Work."

Then followed the article, which was simply a "fairy" tale, as was conclusively shown in the *Herald's* closing paragraph: "Superintendent Stockett, of the Western Fuel Co., on being shown the article by the *Herald* last evening said: 'It reads well, but there is not a shadow of truth in the story. The party who wrote it must possess a very vivid imagination.'"

It is relevant now to add that although more than a year has passed, nothing has since been heard of "the substantial figure of \$700,000" nor the development work that was to be done.

A Boston journal's comment on the management of the Granby Consolidated Mining, Smelting, and Power Company is to the effect that during the past year ended June 30, last, the company has accomplished two things in particular which are bound to result beneficially to stockholders: closed negotiations whereby the West Kootenay Power and Light Company furnishes it additional electric power, and acquired a financial interest in the Crow's Nest Pass Coal Company, which insures a full supply of fuel. The unfavourable features of the annual report are the higher costs of mining and smelting, but, taking into consideration the fuel difficulty and the higher costs of labour, the company did remarkably well, showing net profits for the year, on a considerably smaller production, of \$1,848,019, against \$1,823,617 in the previous year. From the year's operations share earnings of \$13.68 resulted, while stockholders were paid \$12 in dividends. The balance-sheet for the past fiscal year shows cash and copper on hand on June 30, 1907, amounting to \$853,280, against \$1,023,834 on the preceding corresponding date. The stocks, bonds and bills receivable item increased from \$15,429 in 1906 to \$895,675 this year. If the management finally decides, as intimated in the annual report, to issue \$1,500,000 new stock, it will bring the total outstanding stock up to the full authorized amount of \$15,000,000.

PORTLAND CANAL MINING AND DEVELOPMENT COMPANY, LIMITED.

A Vancouver Island Company Operating in the Skeena Mining Division of Cassiar District.

PORTLAND CANAL DISTRICT was briefly described by Herbert Carmichael, provincial assayer, in "Bulletin No. 2, 1906," published by the British Columbia Bureau of Mines about the end of last year, and reprinted in the *Mining Record* for January, 1907, (see pp. 9-13). In order, though, to make more complete the information here given in connection with the properties of the Portland Canal Mining and Development Company,

ages, since the shores on either side are precipitous mountains with, in places, peaks which rise almost perpendicularly to heights of 6,000 ft. About 35 miles from the head of the canal, on the east side, is Maple Bay (marked Maple Point on the chart), a small bay affording good shelter but with rather deep anchorage. The two rivers, the Bear and the Salmon, at the head of Portland Canal, are separated by a high bare ridge of mountain that forms the International boundary line, trending off to the west. On the east side of the valley of Bear River a mountain range extends in an east and west direction, the highest peak of the range, Mount Disraeli, being a snow-clad pinnacle 7,000 ft. high. The valley of the river is about a mile wide, composed of gravel and



View up Portland Canal from below Maple Bay, which is the Small Bay in the Foreground.

Limited, parts of that bulletin are now again reproduced.

GENERAL DESCRIPTION OF THE DISTRICT.

"Portland Canal," said Mr. Carmichael in his report, "is the most northerly inlet on the coast of British Columbia, and forms the boundary between that Province and Alaska. This International boundary, the position of which was definitely decided upon some few years ago, has now, in this portion of it at least, been laid out on the ground, and its position clearly marked by monuments or by a cutting through the forests where such occur. The settlement of this boundary has relieved claim owners of much uncertainty as to which country their claims lie in, and should stimulate development on both sides of the line. The canal, or fiord, communicates with the open sea at Dixon entrance, and from that point runs nearly due north a distance of 55 miles to its head. It possesses few and indifferent anchor-

sand dotted with cottonwood and alder trees. It extends easterly in a straight line, with a gradual rise, for 10 miles, until an elevation of 400 ft. is attained. From this point the river and creeks rise more rapidly, becoming mountain torrents. With very little work a good wagon road could be made up the valley for 10 miles or more. A bridge over the river, near its mouth, is needed, as, without it, it is nearly impossible to cross the river at high water, and all means of communication are cut off.

"Communication up Portland Canal is maintained by the Union Steamship Company every ten days from Vancouver, and every week by a small steamer from Port Simpson. There is a very comfortable hotel at Stewart, at the head of the canal. Attention was first drawn to Portland Canal when, on May 4, 1898, a party of 64 persons from Seattle landed at the head to look for placer diggings at the source of the Nass River. Some 21 of the party went over the

and forms the range referred to as between the Salmon and Bear Rivers.

"On the east side a similar granite extends from the mouth nearly to Maple Bay, where the country rock changes to a schist intersected by dykes, which formation continues to a point about seven miles up Bear River valley, where granitoid rocks again appear."

THE CLAIMS OF THE PORTLAND CANAL MINING AND DEVELOPMENT COMPANY.

The Portland Canal Mining and Development Company, Limited, was formed to acquire, develop and operate a group of 10 mineral claims situated

development, while not extensive, shows a well-defined quartz vein averaging about 8 ft. wide, striking N. W. and S. E. and dipping about 20 deg. southerly into the hill. The hanging-wall is schist and the foot-wall porphyritic dyke. The vein shows marked brecciation, the quartz enclosing and cementing large and small pieces of the schist country rock. The vein is well mineralized throughout, the mineralization, however, varying in places, the prevailing ore being galena with occasional native silver, while at certain points in the vein lead carbonate replaces the galena. A streak of solid, fine-grained pyrites, from 2 to 14 in. wide, occurs with great persistence



Valley of Bear River about two miles from the Head of Portland Canal, Skeena Mining Division. The Bridge shown has been erected by the Provincial Government across the wide channel of Bear River: it is 1,660 ft. in length, with 20-ft. Openings between the Bents. Arrangements have been made to substitute four 60-ft. Openings where necessary, to admit of drift wood passing down stream with as little interruption as practicable. This Bridge will be a great public convenience.

on Glacier Creek, a tributary of Bear River which flows into Portland Canal at its head. This group consists of the following claims: Gipsy, Herbert, Extension, Mayflower, Sadie, Mosquito, Barney, Richard II, Lucky Seven, and Little Joe. The distance from the townsite of Stewart, which is at the head of navigation on the canal, is approximately five miles. Mr. Carmichael's report of several of them was as follows:

Lucky Seven and Little Joe.—These claims are reached by following up the main Bear River trail, 21½ miles from the hotel, where a trail strikes up the south-east slope of Glacier Creek, and rising rapidly until the claims are reached at an altitude of 2,450 ft. and about 11½ miles from the Bear River trail. A short distance above the mine cabin a small creek has exposed a quartz vein: this has been developed on the Little Joe by a tunnel 20 ft. long and a series of shots and open cuts extending through both that claim and the Lucky Seven. The

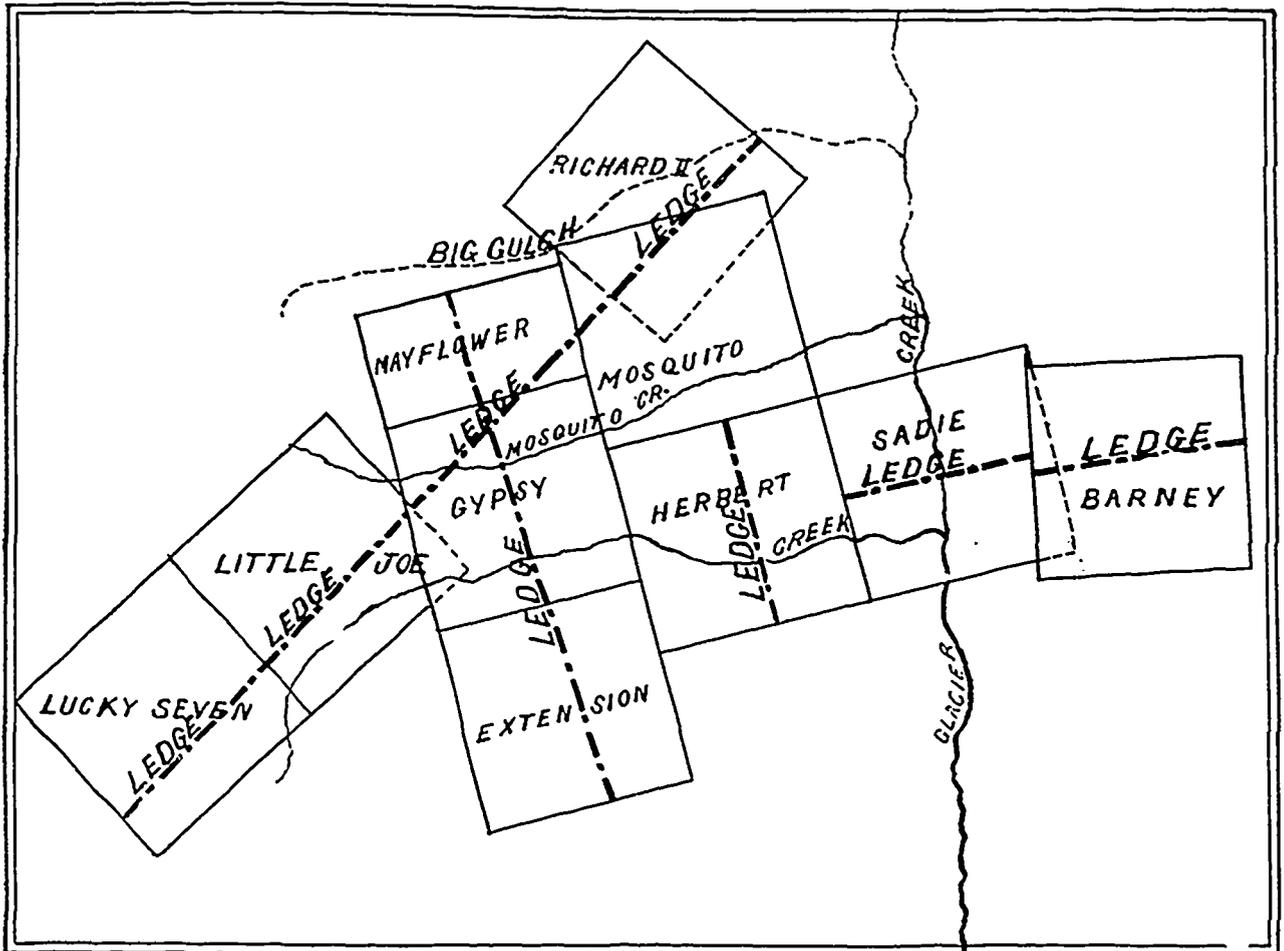
through the lead. This carries about 0.25 oz. of gold per ton. An assay of a fair sample of the ore gave: Gold, 0.1 oz.; silver, 32 oz. per ton; copper, trace; lead, 27.5 per cent.; zinc, 6.3 per cent. The owners state that average ore assays: Gold, \$4; silver, 25 to 30 oz. per ton; lead, 4 to 6 per cent. The vein shows great permanence, having been clearly traced through the Lucky Seven and Little Joe, while extensions have been located at either end of these claims. Another small vein has been located on the claim, but no work has yet been done on it.

"Gipsy.—This claim adjoins the Lucky Seven and Little Joe, farther down the hill, but was not visited, as the shaft was reported partly filled with water. The owners state that they have sunk a shaft 40 ft. on a quartz vein from 2 to 5 ft. wide, in schist, mineralized with galena and pyrites, the values, running \$30 to \$40 in gold, 20 oz. per ton in silver, and 20 per cent. lead. The owners intend to sink farther in the spring."

A RECENT REPORT MADE BY THE DIRECTORS.

"The directors of the company on taking over the claims decided to at once start work on the Little Joe, so the president, accompanied by the foreman and four men, together with all necessary tools and supplies, left Vancouver on June 11 for Stewart. On arrival there, the men were set to work cutting a wagon road to the foot of the mountain on which the claims are situated, and the trail over the mountain was improved. Arrangements were made for the conveyance by wagon of the stores, etc., to foot

"The vein, which dips about 20 deg. southerly into the mountain, has been explored on the Little Joe and Lucky Seven by several open cuts and a tunnel about 20 ft. long, all showing good mineralization. It was decided to continue this tunnel for 100 ft., keeping the foot-wall of the vein as that of the tunnel, and thus gaining depth on the vein foot for foot. This tunnel was in, at last report, 96 ft. The result of the work up to date has been highly encouraging, the values increasing greatly with depth. At 45 ft. strong bands of steel galena were encountered, an



Sketch Plan of Mineral Claims on Glacier Creek and Tributaries, owned by the Portland Canal Mining and Development Company, Limited.

of mountain, then additional men were engaged in Stewart and all were employed packing the goods to the mine. A new bunk house was built and the old cabin was used as a cook house.

"An inspection was made of the claims, and the vein on the Little Joe and Lucky Seven was traced right through to the Richard II where the outcrop is as bold and big as on the Little Joe and Lucky Seven, and exhibited similar characteristics, viz., the brecciated quartz, enclosing and cementing pieces of the country rock, as mentioned in British Columbia Bureau of Mines Bulletin, thus proving the vein continuous through six of the company's claims.

assay of which gave: Gold, 0.1 oz., \$2.00; silver, 113.91 oz., \$72.92; lead, 34.8 per cent., \$31; total, \$105.92. At 60 ft. native silver and argentite (silver glance) occurring in a black quartz appeared both above and below the bands of galena, and the last report to the directors states that the whole face of the tunnel 6 ft. 6 in. x 5 ft., was strongly mineralized with native silver, argentite and galena. Assays from this black quartz ore, brought down by a director, gave: Gold, 3.65 oz., \$73.00; silver, 302 oz., \$193.28; total, \$266.28. Brecciated quartz gave: Gold, 0.21 oz., \$4.20; silver, 130 oz., \$83.20; total, \$87.40. Galena and iron pyrites ore gave:

Gold, 0.25 oz., \$5.00; silver, 25.4 oz., \$16.25; lead, 32.8 per cent., \$29.25; total, \$50.50.

"On the Gipsy claim, which at the outcrop gave high gold values, was found a shaft full of water,

to 75 ft. depth and then cross-cut to the ledge and drift on it. Reports of progress on this work are also very encouraging. The shaft is sunk on a ledge with a well-defined wall dipping at an angle of 75



View in Bear River Valley, Portland Canal District, Skeena Mining Division.



View on Bear River, which flows into Portland Canal at its Head.

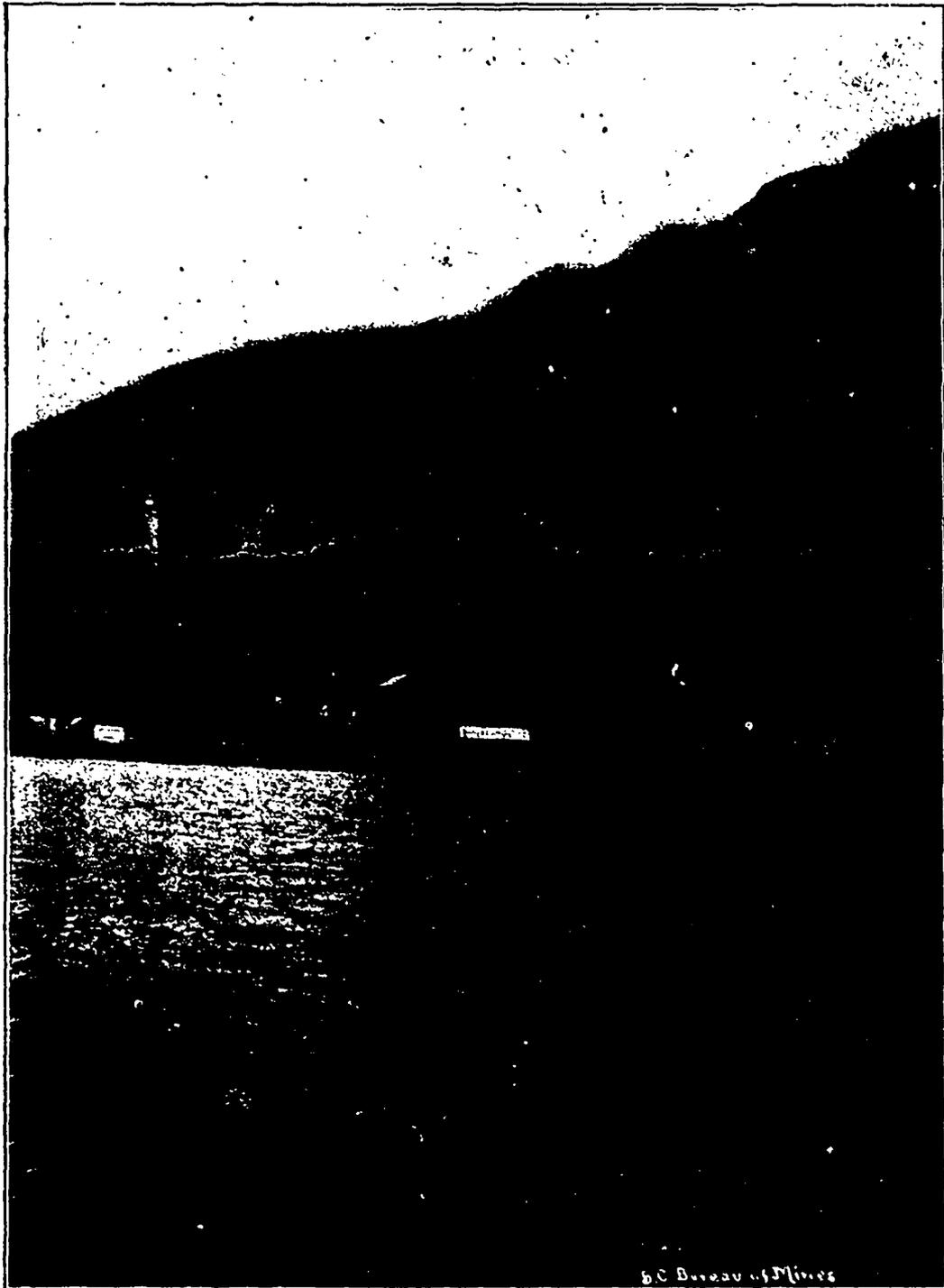
about 38 ft. deep, and as the claim lay too far away to work from the Little Joe cabins, it was decided to let a contract for sinking the shaft from 38 ft.

deg. into the mountain. At 40 ft. the ledge was disappointing, but from later reports a width of 3 ft. of galena ore of good grade now occurs at a depth

of 60 ft. and showing signs of further widening. No samples of this ore yet to hand, they having been mislaid in Stewart.

"A second tunnel has been started on the Little

culty in the way of the transportation of ore by wagon from the foot of the mountain to tide water. From the mines to the foot of the mountain, a distance of about one mile and a half, the ore, if



Lower Terminal of 6,000-ft. Aerial Tramway from the Brown Alaska Company's Outsiders Group Mine to Shipping Place at Maple Bay, Portland Canal. Also showing Ore Bunkers, Wharf, etc.

Joe, lower down the mountain, but not enough work has been done to demonstrate values.

"Now that the Provincial Government has constructed a bridge over Bear River there is no diffi-

shipped, will have to be raw-hided, until tramway facilities shall be provided, which the directors intend doing as soon as sufficient ore shall be blocked out to warrant the expense."

LATEST INFORMATION CONCERNING DEVELOPMENTS.

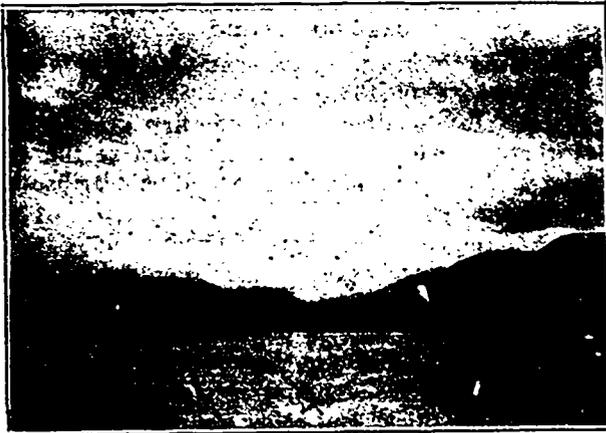
The latest information from the foreman in charge of development work received at the company's office was to the effect that at the time of writing the tunnel was in 110 ft. and that for the last 45 ft. the ore had carried native silver which showed freely all through the paystreak. The ledge ranges from 7 to 9 ft. in width and the paystreak varies from 1 ft. upwards, the whole face, at present nearly 8 ft. in width, being pay ore.

It is the intention of the directors to have two or three tons of high-grade ore shipped for a bulk test. They are also arranging to have the property examined and reported on by a mining engineer familiar with silver-lead mines, who also will be required to advise them as to the best method of working the mine and treating the ore.

Mr. W. J. Elmendorf, of Spokane, Washington, is being communicated with and he will probably proceed to the property within a month.

GENERAL NOTES.

The main ledge known to occur on the company's property shows on the surface for fully a mile. Its width appears to be about 7 ft. and wherever it has



Near Maple Bay, Portland Canal; looking North.
(Photograph taken two hours after Midnight, June, 1906.)

been cut it is well mineralized. While development has shown the existence of a paystreak of high-grade ore, there is of course much ore that it would not pay to ship, consequently the question of concentration to make this also yield a profit will have to be carefully gone into.

Beside its mining property, the company owns a railway charter which the directors regard as a valuable asset, since it covers the whole of the Bear River and subsidiary valleys. There are known to be many mineral claims of much promise in the mountains surrounding the Bear River basin, and when these shall be developed railway transportation facilities will be required for their profitable working.

The capitalization of the Portland Canal Mining and Development Company, Limited, which has been incorporated in British Columbia, is \$100,000.

divided into 475,000 non-assessable shares, of which 150,000 (known as "Flotation Shares"), are of a par value of 12½ cents each, and 325,000 of 25 cents each. The Portland Canal Syndicate, from which eight of the mineral claims were purchased, has been allotted 175,000 of the 25 cent shares, and the remaining 150,000 of this class of shares have been placed in the treasury. Of the 150,000 "Flotation Shares," 105,582 have been sold at par, bringing in to the company \$13,197.75. When the directors' report above quoted from was issued, the expenditure had reached a total of \$11,452.95, leaving a balance of cash in hand of \$1,744.80. All money received by the company is spent on development or payment of balance due on the bond under which the Little Joe and Lucky Seven claims were acquired.

The directors of the company are: T. A. Wood and C. H. Dickie, of Duncans, Vancouver Island; J. H. Hemsworth, of Mt. Sicker; Geo. M. Perdue, Louis Marks, and R. Angus, of Victoria. The company's head office is at Duncans.

Regarding the bond on the Little Joe and Lucky Seven claims the vendor has been paid \$2,000 cash, and there remains to be paid \$6,000 due December 15, 1907, and \$17,000 on December 15, 1908. Payment for the railway charter of the Portland Canal Railway Company is included in the cash and shares the several vendors receive as mentioned above.

The *Mining and Scientific Press*, after mentioning that Alaska in 1906 shipped into the United States \$18,538,702 worth of gold, says further that in the same year "that northern territory took nearly \$4,000,000 worth of iron and steel manufactures, chiefly machinery."

The total pounds of fine copper produced in the United States in 1906, according to a preliminary statement issued by the U. S. Geological Survey, was 906,541,947. Montana was first with 283,485,517 lb., next Arizona with 262,566,103 lb., and then Michigan with 229,695,730 lb. No other state reached a production one-half as large as any one of those above stated, Utah having been nearest with 50,329,119 lb.

Among other large copper companies which are stated to have returned their capitalization since organization are the following: Anaconda of Montana, \$33,000,000 on \$30,000,000 of issued stock; Boston & Montana, \$52,525,000 on \$3,750,000; Montana Ore Purchasing, \$9,443,119 on \$2,025,000; Osceola, Consolidated of Michigan, \$6,362,000 on \$2,403,850; Arizona, \$8,982,043 on \$3,775,000; Parrot of Montana, \$6,807,258 on \$2,298,500; Quiney of Michigan, \$17,270,000 on \$3,751,000; United Verde of Arizona, \$22,270,000 on \$3,000,000; Utah Consolidated, \$6,036,000 on \$1,500,000, and Wolverine of Michigan, \$4,530,000 on \$1,500,000.

PRIZE ESSAY ON MINING IN BRITISH COLUMBIA.

By Rosalind Watson Young.

MINING IN BRITISH COLUMBIA was one of several subjects for competitive essays for which A. C. Flumerfelt of Victoria some time since offered prizes of \$50 each for those that should be adjudged the best in their respective sections. That for mining was awarded to Mrs. Young, wife of Dr. H. E. Young, provincial secretary for British Columbia. It is here reprinted in full from the Vancouver *Province*, which published it with others in its special "Land of Opportunity Number" issued on September 21 inst. On another page the *MINING RECORD* briefly comments on the essay, which follows:

1906, \$25,000,000.

Never before did British Columbia reach such a high and valuable record of production. The past year all but touched the \$25,000,000 mark—falling by less than \$20,000. This shows an increase of \$2,500,000 over 1905, and \$6,000,000 over 1904.

Such wonderful strides have been made in copper mining since the industry began in 1894 that one-third of the total production was derived from copper.

The igneous rock which underlies the greater portion of the province affords unmistakable evidence that violent volcanic action disturbed British Columbia in bygone times. To the infiltrating waters which accompanied this disturbance no doubt the deposit of minerals is due. Ore bodies occur along the contact of coast granite from Windy Arm to Similkameen. The Rossland deposits are on the edge of an extinct volcano. And the Phoenix mines, which have raised the copper output to its present large proportions, are impregnations of volcanic tuffs.

The sedimentary rocks are mainly confined to the cretaceous period. In these lie the coal beds of Vancouver Island, Crow's Nest Pass, Nicola, Similkameen, Ashcroft, Kamloops, North Thompson, Peace River, Toqua, Telqua and Queen Charlotte Islands.

The most important minerals may be subdivided into:

Metalliferous—Gold, silver, copper, iron, lead, zinc, platinum and osmiridium.

Non-metalliferous—Coal, coke, building stone, bricks, lime, petroleum, magnesite and mica—the last three only slightly developed.

Of these the most widely distributed is gold, occurring as it does in pre-glacial and post-glacial gravels, and associated in lodes with quartz or copper.

The total production to date of these minerals follows in order of importance:

Gold (placer)	\$ 68,721,103
Gold (lode)	41,015,697
Coal	72,815,423

Copper	35,546,578
Silver	25,586,008
Lead	17,625,739
Coke	6,519,375
Others	5,813,799

Total\$273,643,722

At least one-fifth of the total population of British Columbia is directly dependent upon mining. Reckoning the miners employed at 12,000, if we multiply by three—not five as is ordinarily the case in census-taking, because so many miners are nomadic and unmarried—we have 36,000 people out of a total population of 178,000 depending for their livelihood upon this most important industry.

A description of coal and mineral areas according to districts, and an account of the work now proceeding, follows:

For mining purposes the province is divided into mineral divisions, which are arranged from time to time as circumstances warrant. At present there are 37 such divisions. These we shall group into the well known, though somewhat arbitrarily selected, districts of Cariboo, Cassiar, Coast, Kootenay East, Kootenay West, Lillooet, Yale.

CARIBOO DISTRICT.

Including Omineca, Cariboo and Quesnel divisions. Total output, \$405,400.

The Cariboo goldfields were the first great attraction that British Columbia dangled before the eyes of the world. For almost half a century Cariboo has been contributing towards the placer output of the province, and shows no signs of exhaustion.

As a rule the early miners worked only the shallow deposits to a depth of 30 or 40 ft., and these gravels of post-glacial age were in places exceedingly rich.

In later days it has been discovered by boring that beneath the surface deposits is a stratum of clay, 70 ft. or more thick; and below the clay gold-bearing gravels which must be of pre-glacial origin. To mine these deep gravels is the problem of present-day miners in the neighbourhood of Barkerville.

Quesnel Division.

Production, 1980 oz. gold, \$39,600.

The decreased output of this division is due to the fact that the mine of the Cariboo Gold Mining Company, situated at Bullion, was not operated.

In everything but water supply this property has been well off. It has 10 miles of auiferous channel, a face over 300 ft. high, which has averaged 25 cents per cu. yd., and the south fork of the Quesnel River, near at hand, as a dumping ground. The one thing lacking was water. Though Polley, Bootjack and Morehead Lakes contributed their supply, it was not sufficient in those years when the precipitation was slight.

With a view to increasing the water supply, Spanish Lake has been dammed during the passed year, and a ditch partly excavated for conveying the water, which will be syphoned across the South Fork.

Another important work undertaken at the same time was a rock sluice-tunnel, rendered necessary in order to procure grade for sluicing the stratum of gravel next to bedrock. So, while 1906 has been a year poor in output for the Bullion camp, it has been important in the improvements undertaken.

Work on Keithley, Snowshoe and adjacent creeks was hampered on account of lack of water; and nothing was done in the Horsefly.

Cariboo Division.

Production, 17,790 oz. gold, \$355,800.

This is the largest output in five years. The principal producer was the La Fontaine mine of the Cariboo Consolidated Company, situated on Lightning Creek. From 6,828 cu. yd. of gravel, 1,451 oz. of gold, value \$26,697, was derived. Forty-eight men were employed.

At Slough Creek and Willow River attempts have been made for upwards of 15 years to work deep gravels. Millions of dollars have been spent. The supreme difficulty is proper drainage. Whenever "pay" gravel is approached, such an inflow of water occurs as to suspend work. In the past year the Willow River Company is reported to have taken 20 to 30 oz. from a 10-ft. set, and to have closed an option on adjacent property. These things would indicate that the tide has "ebbed" on Willow River. But it is still flowing on Slough Creek, where new machinery is being installed in the endeavour to unwater the mine.

On Williams, China, Cunningham and Grouse Creeks, small companies have worked with satisfactory results.

When the white miners came from California in 1859, Chinese accompanied them; and ever since Cariboo has been their stronghold. Not only do they mine the river bars profitably, but they have their hydraulics, building their own flumes and trestles.

Omineca Division.

Anticipation of railway development has resulted in the location of diggings, said to be rich, on the Peace, Pine and Parsnip Rivers. The year's output was small, amounting to 500 oz., or \$10,000.

CASSIAR DISTRICT.

Including Atlin, Liard, Stikine and Skeena divisions. Output \$555,599.

Atlin Division.

While rotten sluice boxes and old caches indicate that Atlin was not overlooked by the early miner of the seventies, he evidently did not find the rich spots. It was in 1898, during the Klondike excitement, that Atlin became known through the discovery of gold on Pine Creek. Subsequent work has demonstrated that the discovery was made on the richest portion of Pine, where the paystreak extends into the benches for an undetermined distance.

The tributaries of Pine, also, are auriferous. To the north are Birch, Boulder and Ruby; to the south Wright, Otter, Gold Run and Spruce Creeks. Other

productive watersheds are O'Donnell and McKee. Only a small area has been thoroughly prospected. From a pan of dirt taken from any creek colours can be obtained.

Though the number of individual operators is decreasing, the output remains about the same, because strong companies occupy the field. Phenomenal values have not been discovered, but wide paystreaks of good average value. This cause, together with a heavy overburden and insufficient water supply, tends to require capital. Fortunately, Atlin is possessed of one fine natural reservoir in Surprise Lake, 15 miles long by two-thirds of a mile wide. In 1906 this was dammed, and the water conserved, as had not previously been done.

While the mineral product so far has been placer gold, deposits of copper, lead and gold-bearing quartz have been located. In the rear of the town of Atlin is a unique deposit of hydro-magnesite, snow-white, of an unknown depth, and extending for acres. A sample shipment was marketed in San Francisco, but high freight rates, coupled with excessive moisture, arrested development.

The Pine Creek Power Company operated two pits in 1906 and employed 25 men throughout the season, which lasted from May to the middle of November. The gold occurs in a yellow gravel on serpentine bedrock. The method of mining pursued is to explode bank-blasts of 2,500 to 3,000 lb of 75 per cent. powder. Tunnels and cross-cuts are run so that the powder is placed every 25 ft. Such a blast so thoroughly disintegrates the gravel that it is easily hydraulicked. Three giants, with 7-in. nozzles, are employed in a pit. Two streams work on the gravel from opposite directions, and the third drives the muddy stream into the sluice. Sometimes a fourth stream is used to trim the tailings pile. The gravel averages 35 cents per cu. yd. Over \$70,000 was recovered.

Adjoining the above company is the steam shovel plant of the Atlin Consolidated Mining Company. The 70-ton Bucyrus 1¾-yd. dipper steam shovel began digging in the middle of July. In spite of delays incidental to the newness of the plant, the shovel fulfilled expectations. Trimming and washing facilities were commensurate with the digging capacity of the shovel, a car a minute being delivered into the sluice.

The height of the face on which the shovel worked was 18 ft. The gravel averaged 50 cents per cu. yd., and 1,500 cu. yd. was the daily delivery. The returns for the season were upwards of \$25,000.

It would seem that the steam shovel is well adapted for handling Atlin gravels. Its chief drawback is the fuel consumed, viz., five to six cords of wood daily.

These two companies are of special interest; one because its output was the largest in the camp, the other because of its new and successful method of operation.

Liard Division.

The principal work done was by the Berry Creek Mining Company, which owns 10 leases, with 15,000 ft. frontage on Thibert Creek. In 150 days this company cleaned up \$63,000. The gold is both coarse and fine. Associated with it is some osmiridium.

A plant has been installed by the Rosella Hydraulic Mining & Development Company on McDame Creek.

The Liard is almost an unknown region, portions of it never having been traversed by a white man.

Stikine Division.

Assessment work is about all that has been done on any of the claims in the Stikine division. Along the Tooya River extensive seams of coal outcrop, one seam being 29 ft. thick. These are valueless, however, in their present isolation.

Skeena Division.

Along the Portland Canal there has been keen prospecting, with the result that many promising claims have been located, some of which have reached the shipping stage.

The principal mine is at Maple Bay, the property of the Brown-Alaska Company. Wharf and bunkers are on the beach, to which aerial tramways transmit the ore from the mine. The ore is a self-fluxing copper, and is taken in hulks to the company's smelter at Hadley, Prince of Wales Island. Some 5,390 tons were shipped, 68 men employed.

The Queen Charlotte Islands embrace an archipelago of 150 islands, of which Graham and Moresby are the largest. Although it has been known for 50 years that one of the largest coalfields on the coast is situated near Skidegate, Graham Island, mining has not been successful. The coal is of anthracite variety, and in places is much shattered by dyke intrusions. The isolated position of these islands has retarded development, but the growth of Prince Rupert, with its prospective transcontinental railway and ocean line of steamships, has stimulated interest in Queen Charlotte, so that much staking has been done. In addition to coal, iron, copper and gold occur.

COAST DISTRICT.

Including Victoria, Alberni, Clayoquot, Quatsino, Nanaimo, New Westminster and Bella Coola divisions. Production \$5,388,146.

The excellent showing made by this district is due to the coal mines, and to the Marble Bay, Britannia and Tye.

Though there are indications of coal elsewhere, the chief measures fringe the east side of Vancouver Island. These are divided into the Comox and Nanaimo areas, from which the Pacific coast has been largely supplied for 50 years.

The coal is of high-grade bituminous variety. The seams are 2 to 8 ft. thick, though owing to faults and overthrusts they may thicken to 15 or 20 ft.

The mining of the coal is in the hands of the

Wellington Colliery Company and the Western Fuel Company. The former operates a mine at Cumberland, of which the shipping port is Union, and also the Extension mine near Ladysmith. The latter has its mine at Nanaimo. Shaftheads, wharves and bunkers are located both at Nanaimo and on Protection Island, for the coal seams run under Nanaimo harbour. Mining is carried on by pillar-and-stall and by long wall methods. Facilities for loading coal are most modern.

Of the 1,768,627 tons of coal mined at the Island collieries, about half was sold for home consumption and half for export. An ever-increasing market is found in Alaska.

Coke amounting to 22,851 tons was manufactured by the Wellington Colliery Company at Union. Owing to the growth of smelting on Vancouver and Prince of Wales Islands, it seems likely that the coke industry will be extended.

In the Strait of Georgia, opposite the Comox area, lies Texada Island, 40 miles long and five miles wide. Only the northern portion of the island has been prospected, but it is wonderfully rich in base and precious metals.

No mine in British Columbia has a better record to present than the Marble Bay, owned by the Tacoma Steel Company. It has paid its purchase price, \$150,000 worth of development and equipment, and over \$200,000 in dividends. The ore, averaging \$15 per ton, consists of bornite and chalcocopyrite, and occurs associated with zoisite (the colourless hornblende), garnet, actinolite, serpentine and other alteration products. Sinking to the 700-ft. level has proved the ore body continuous. There were mined and treated at the Ladysmith smelter 104,742 tons of ore; 63 men were employed.

About half a mile distant are the Van Anda mines, which might have had as fine a record as the Marble Bay, had there not been mismanagement and over-capitalization. After some idle years, the mines have been reopened. Twenty-five men were engaged at the Cornell, and 100 tons of ore shipped.

On the west side of the island is an enormous deposit of iron—three hills of magnetite, which can be mined by quarrying. Occasional shipments have been made for 25 years to the charcoal iron smelter at Irondale, Washington. Veins of gold-bearing quartz occur, but these seem pockety. There is also a lime-stone quarry, worked by the Tacoma Steel Company; and the limestone is calcined in kilns of which the capacity is 120 bbl. per day.

The Britannia mine on Howe Sound is an immense body of low-grade ore. The holdings comprise seven claims, which aggregate 300 acres and cover 9,000 ft. of ledge on the strike. Width of ore body is 300 to 600 ft. The ore is copper and iron pyrites with silicious gangue, and is worked by tunnelling. The present workings are 3,500 ft. above sea level, and four miles by trail from the beach.

The ore is sorted at the mine into first-class, second-class and waste, then run by aerial tramway

a length of 17,000 ft. to the beach, at a rate of 100 tons per hour. First-class ore is run direct to wharf bins; second-class is crushed and concentrated, then placed in storage bins ready for shipment to the company's smelter at Crofton. In 1906, 88,880 tons of ore were shipped. The men employed equalled 175.

The Crofton smelter, originally built for treating Lenora ore, Mount Sicker, was idle two years prior to its purchase by the Britannia Smelting Company, Limited. After some changes had been made, the chief being the addition of a briquetting plant, the smelter was blown in January 4, 1906. Its present capacity is 500 tons. The plant consists of 18 ore bins, each capable of holding 300 tons, a furnace building containing three furnaces, briquetting and converter buildings, power-house and boiler-rooms, machine shop, assay and business offices. The capacity of the briquetting plant is 60,000 bricks a day, the bricks being made of fines, concentrates and flue dust. The combination of Britannia and Prince of Wales Island ore makes a good smelter mixture.

The Tyee mine, situated on Mount Sicker, has endured trying times in the endeavour to locate its ore body at depth.

The ore is copper and iron pyrites, in a gangue composed of barite, silica and calcite. Schist forms the country rock. There is no doubt that it is due to faulting that the ore body was lost sight of below the 300-ft. level. In expectation of finding it again, the shaft was sunk to the 1,000-ft. level, the zone was barren. Indications, however, improved at 1,000 ft. Stringers of barite, which in upper levels, accompany ore, appeared. So sinking to the 1,200-ft. level is in progress. During this development work ore has been obtained from the hitherto unworked portions of the upper levels to the amount of 23,833 tons. This ore was treated in the company's smelter at Ladysmith, mixed with custom ore from Texada, Alaska and Yukon. It is transmitted from the mine by aerial tramway to the E. & N. Railway, which delivers it at the smelter. The cost of mining and delivering is \$3.19 per ton.

EAST KOOTENAY DISTRICT.

Including Fort Steele, Windermere and Golden divisions. Output \$5,171,024.

The deposits worked to any extent are confined to the Fort Steele division. They are chiefly coal and galena.

The coal beds at the Crow's Nest Pass aggregate 200 ft. in thickness, and extend over an area estimated at 230 sq. miles. Like the Vancouver Island measures, they are cretaceous in age and bituminous in quality.

The Crow's Nest Pass Coal Company operated collieries at Coal Creek, Michel and Morrissey—at the last-mentioned for only part of the year. The coal mined amounted to 720,449 tons, of which about half was sold as coal and half made into coke at the Fernie ovens.

The St. Eugene mine at Moyie is the largest silver-

lead mine in Canada, and the second largest on the American continent. During the past year 152,827 tons of ore were mined, and 325 men employed. The ore body is very extensive. It outcrops on the mountain top, and again is tapped by a shaft sunk at the edge of Moyie Lake. Eight miles of underground work have been done. In 1902 this mine was shut down, except for a little development work that was carried on. The concentrating plant lay rusting. But the bounty on lead accorded by the Dominion stimulated the St. Eugene into activity. Its concentrates are shipped to the Trail smelter, which belongs to the same company—the Consolidated Mining and Smelting Company of Canada.

The Sullivan mine, situated two and one-half miles north of Kimberley, shipped 24,385 tons of galena to the Marysville smelter, which has a daily capacity of 125 tons. Forty-one men were employed. Profits amounted to about \$100,000.

The North Star mine was worked to the comparatively limited extent of 2,824 tons. Twelve men employed.

In addition to coal and galena are the copper deposits of St. Mary's district, iron at Bull River and petroleum in the Flathead.

In the Flathead, 15 seepages are known to exist, and oil indications are visible along the creeks. The oil is of a high grade, and free from sulphur. Roads are being built, and drilling machinery and a portable sawmill are being set up. In boring, care must be taken to avoid the overthrust of Cambrian or cretaceous stratum, which forms a thickness of 5,000 to 6,000 ft.

WEST KOOTENAY DISTRICT.

Including Ainsworth, Slocan, Slocan City, Nelson, Trail Creek, Arrow Lake, Trout Lake, Lardeau and Revelstoke divisions. Output \$4,548,253.

In the Ainsworth camp good progress was made, the output being two and a half times greater than last year. The largest producer was the Blue Bell, which shipped 9,128 tons. Until August shipments were made to the Pilot Bay concentrator. Then these were suspended in contemplation of the erection of a concentrator at the mine. Twenty-nine men were employed.

The Cork mine worked 30 men and shipped 7,970 tons of silver-lead ore.

Mining in the Slocan was inactive. Neither the bounty on lead nor the high market prices of lead and silver sufficed to stimulate the industry when a duty was imposed upon zinc going into the United States.

The ores of the Slocan occur either as galena in a slate formation or as argentiferous quartz veins in a granite formation.

Of the 16 mines shipping over 100 tons of ore the largest producer was the Payne, which shipped 8,650 tons. The Payne, as well as many of the other mines, is successfully worked under the lease system.

A discovery of stibnite, running 65 per cent. anti-mony, was made. The ore is to be sent to Scotland for treatment.

The Hall Mining and Smelting Company's smelter at Nelson, originally built for the treatment of Slocan ores, in 1906 showed a deficit, though the volume of business transacted had increased. Notwithstanding this, the plant has been improved by the installation of the Huntington-Heberlein process for desulphurizing galena ores. And smelter charges have been reduced from \$15 to \$12 per ton.

In the Lardeau, the Eva produced 9,028 tons of free-milling ore, with which it supplied its 10-stamp mill.

Rosland Camp.

The principal mines on Red Mountain are Le Roi, Le Roi No. 2, Centre Star and War Eagle.

The Le Roi, with a force of 247 men, produced 127,161 tons of ore from the different levels to a depth of 1,350 ft. In February, 1906, the first dividend in five years was declared.

In Le Roi No. 2, a continuous ore-shoot has been proved 1,200 ft. in length. The value of the ore is \$40 per ton, and mining expenses \$4.22 per ton.

The War Eagle, Centre Star and Iron Mask are the property of the Consolidated Mining and Smelting Company of Canada, Limited, which also operates the St. Eugene and lesser mines and the Trail smelter. At the Centre Star the shaft is 1,800 ft. deep. Here a new and powerful hoist has been installed for handling not only the ore of the Centre Star, but also of the War Eagle and Iron Mask. Underground development work aggregates 14 miles. The total production of these mines since 1894 has been 842,684 tons, valued at \$12,831,033. In 1906 they produced 114,853 tons, with a force of 355 men.

The Trail smelter possesses a complete smelting, refining and industrial plant. It consists of six copper furnaces, two lead stacks, a lead refinery, gold and silver refinery, a copper sulphate manufactory and lead pipe works. So the products are pure lead, pig-lead, lead pipe, copperas, antimony and refined gold and silver. Large quantities of lead are shipped to Montreal to be corroded into paint lead of a high order. In 1906, 257,000 tons of ore were smelted.

LILLOOET DISTRICT.

Including Lillooet and Clinton divisions. Output \$20,314.

The output, consisting of 840 oz. of placer gold and 170 oz. lode gold, shows a decrease of \$12,000 over last year. This is accounted for by the cessation of the Iowa-Lillooet Dredging Company, which closed down on account of internal trouble and litigation, and is now in liquidation.

YALE DISTRICT.

Including Grand Forks, Greenwood, Osoyoos, Similkameen, Yale, Nicola, Kamloops and Ashcroft divisions. Output \$8,674,710.

Yale district stands first in the province, both in tonnage and values. This success is due to the Boundary, where 1,182,517 tons of ore produced, \$8,593,469.

The Boundary ores usually occur in irregular masses, being impregnations of volcanic rocks by vapours and mineral solutions. The walls are usually ill-defined, except when the ore body is in contact with limestone. Average ores contain about 26 lb. of copper to the ton of rock, and gold and silver values amounting to \$1.50. Of that amount the smelters recover 21 to 23 lb. of copper, and practically all the gold and silver. Diamond drills are largely used in prospecting.

The most powerful companies are the Granby Consolidated Mining, Smelting and Power Company, the British Columbia Copper Company and the Dominion Copper Company. Each of these has its own smelter.

The Granby Company had a most successful year, being enabled to pay a 12 per cent. dividend in four instalments of \$405,000 each. The mines are situated at Phoenix and the smelter at Grand Forks, about 15 miles apart. Two railways, Canadian Pacific and Great Northern, are the ore-carriers. At the mines 801,406 tons of ore were mined and 475 men employed. The principal working shaft, the Victoria, is down 400 ft. The smelter contains eight furnaces, and has a capacity of 2,700 tons per day.

The British Columbia Copper Company works the Mother Lode group of mines in the Deadwood camp. The main working shaft, of four compartments, is 475 ft. deep. From the Mother Lode mine 101,173 tons of ore were mined and 141 men were employed. Value of ore \$4.50 to \$6 per ton. The Emma produced 12,304 tons; thirty men employed. The B. C. and Oro Denoro together produced 10,468 tons; 24 men employed. The smelter of this company is at Greenwood. During the year it has been completely remodelled. The old furnaces were discarded and replaced by three new furnaces, which have a combined capacity for treating about 2,000 tons of ore daily. In the converter building matte is blown into blister copper, 98 per cent. fine. Electric power is derived from Bonnington Falls.

The Dominion Copper Company derives most of its ore from its Phoenix mines—Brooklyn, Stemwinder and Idaho. These contributed 142,970 tons; 155 men employed. It also worked the Rawhide mine in the Wellington camp; output 25,568 tons; men, 45. And the Sunset mine in the Deadwood camp; output 41,112 tons; men, 23. The Boundary Falls smelter, owned by this company, has been improved and its capacity increased to about 1,500 tons. Mines and smelter are run by electricity.

In Nicola, two coal companies were getting their plants in readiness. One of these, the Nicola Valley Coal and Coke Company, is ready for shipping.

DETAIL PRODUCTION.

Total value of production \$24,980,546

Production According to Minerals.

Minerals.	Quantity.	Value.
Copper (lb.)	42,990,488	\$8,288,565
Gold, placer		948,400
Gold, lode (oz.)	224,027	4,630,639
Coal (tons)	1,517,303	4,551,909
Lead (lb.)	52,408,217	2,667,578
Silver (oz.)	2,990,262	1,897,320
Coke (tons)	199,227	996,135
Other materials		1,000,000

\$24,980,546

Production According to Districts.

Yale	\$8,779,711
Coast	5,388,146
East Kootenay	5,171,024
West Kootenay	4,600,352
Cassiar	555,599
Cariboo	405,400
Lillooet	20,314

\$24,980,546

Number of Men Employed.

Placer Mining (approximate)	1,500
Coal	4,805
Lode	3,983
Smelting	1,400

11,688

Total tonnage, including coal 3,862,948 tons

Approximate Amount of Ore Smelted in Each Smelter.

	Tons.
Granby	840,000
Trail	257,500
Boundary Falls	218,811
British Columbia Copper Company	121,031
Crofton	65,000
Nelson	37,767
Tyce	29,110
Marysville	25,000

Coal and Coke Output.

	Vanc. I.	Crow's Nest.	Total.
Coal sold in Canada	531,106	150,793	681,899
Coal exported	448,966	230,863	679,829
Totals	980,072	381,656	1,361,728
Coke sold in Canada	14,547	134,646	149,193
Coke exported	8,304	53,400	61,704
Totals	22,851	188,046	210,897

PRACTICAL SUGGESTIONS FOR DEVELOPING AND INCREASING THE INDUSTRY.

No one doubts that British Columbia is possessed of valuable mineral deposits; but, to be worth anything, these must be located and developed.

Mines Shipping Over 5,000 tons.

District.	Mining Division.	Name of Mine.	Tons.	Men Em- ployed.
Cassiar	Skeena	Maple Bay	5,390	68
Coast	Nanaimo	Marble Bay	104,742	63
"	Victoria	Tyce	23,833	122
"	New Westminster	Britannia	88,880	175
East Kootenay	Fort Steele	Sullivan	24,385	41
"	"	St. Eugene	152,827	325
West Kootenay	Trail	Le Roi	127,161	247
"	"	Le Roi No. 2	32,361	95
"	"	Centre Star, War Eagle	114,853	355
"	Lardeau	Eva	7,950	28
"	Ainsworth	Blue Bell	9,028	29
"	"	Cork	7,970	30
"	Nelson	La Plata	8,875	65
"	"	Second Relief	7,000	30
"	"	Queen	7,035	21
"	"	Ymir	15,000	70
"	Slocan	Payne	8,650	21
Yale	Grand Forks	Granby	801,406	475
"	Greenwood	Rawhide	25,568	45
"	"	Idaho, Stenwinder and Brooklyn	142,970	155
"	"	Sunset	41,112	23
"	"	Snowshoe	6,360	50
"	"	Emma	12,304	30
"	"	Mother Lode	101,173	141
"	"	Oro Denoro	8,980	12

The success of the mining industry depends, then, upon three factors: Prospectors, capital and labour. Intelligent prospectors are needed to find the outcrops, and capital is required to work them. But before capital will become interested, it must be satisfied not only with the value of the prospect, but that sufficient labour can be obtained.

To advance the mineral industry is tantamount to increasing immigration. For a greater number of people in British Columbia will mean more of those who instinctively take to the mountains and woods, abhorring city life; more provincial wealth to be invested—and there is no capital so desirable; more labourers, and an increased home market.

Constant advertising promotes success in the business world—then why not in British Columbia immigration? No better advertisement can be found than the present flourishing state of the mining industry. But people of other countries cannot know of this unless means are taken to place information before them.

Mining bulletins, pleasingly illustrated, and containing few but striking facts regarding mining, would be as welcome received as the recent fruit bulletin published by the Bureau of Information. Such bulletins should be distributed throughout the mining districts of England, Wales, Scotland and the United States.

A Bonus on Discoveries.

Every encouragement should be given the prospector. His path at best is hard. The Government, even in its own interest, should make things as easy as possible for him.

If a man discovers gold in a creek, under the Placer Act all he may get out of it is one claim, 500 ft. up and down stream. Suppose that creek produces \$500,000 or \$1,000,000, is it not right that the discoverer should receive a certain commission?

Likewise in mineral locations. Under the Mineral Act, if a man makes a discovery he may stake a claim 1,500 ft. square. Those who follow in his steps may have just as much. If the Government would give the discoverer, who by virtue of his discovery gives rise to a new mineral camp, a free claim for making his discovery, such a generous policy would soon have the effect of increasing exploration.

Prospectors may also be encouraged by the cutting of trails and building of roads.

When a discovery giving promise of future stakings is made, the Government should immediately run a traverse along the principal valley or stream, to serve as a base line for subsequent surveys. Thus would much litigation be obviated.

Crown Grants.

According to the Mineral Act, claims upon which \$500 worth of assessment work has been recorded may be Crown-granted, upon payment of \$25. The Crown grant gives an absolute and perpetual title.

As no proviso is contained therein for forfeiture in case of non-development, mining lands may be

cheaply locked up for an indefinite time. Such should not be.

In every Crown grant issued by the Government there should be a provision of forfeiture at the end of five years, unless *bona fide* development had taken place.

Miners commonly make the mistake of holding too many claims. They do a little scratching on them sufficient for assessment purposes, and that is all. Instead, if they would select one or two of the most promising claims and concentrate their energy in developing them, they would stand a better chance of disposing of them to advantage.

It is desirable that more British capital should be introduced. The British Columbia mines boom of 1896 frightened the English market, and time is needed for it to become reassured.

In the meantime, American investors are taking up the likely prospects. Amongst the heaviest of these are the Messrs. Guggenheim and associates, who have unlimited capital at their disposal, and who have invested largely in the Boundary, Cariboo and Atlin. These Americans deal in mining properties on a business—not a speculative—basis. Before making any purchase they send their experts, the keenest of mining engineers, to make an examination of the property. The experts are unhampered in the amount of money they spend in prospecting, and may examine 50 claims before they make a purchase. But when they do buy, they get full value for their money. If the same course were followed by Old Country capitalists there would be few bad investments; and we should hear less of the "wild-cats" of British Columbia.

Economical management has been the source of success of the Granby company. It is absolutely essential if mines are to pay dividends. Especially in the case of foreign companies, there are more men on the payroll than are necessary. Offices are overstocked with friends of directors. Unless all leaks are stopped, mining cannot be expected to succeed.

Over-capitalization has been the millstone round the neck of too many companies. Something should be done to restrict it, and keep the capitalization proportionate to the money invested. There are many properties that would pay interest on the money actually expended, but are losing propositions when stocked at \$4,000,000 or \$5,000,000.

Too often men expect exorbitant interest on their money which is invested in mines, interest far in excess of that with which they would be satisfied in any other line of business.

Railways are much needed in some sections, especially Cariboo, where machinery has to be freighted in at seven cents a pound.

Although there are valuable deposits of iron at Texada, Port Rupert, Barclay and Quatsino Sounds, they have not been worked because there was no home market, and competition with the eastern product at Sault Ste. Marie or Sydney, N. S., was out of the question.

But the federal bounty of \$2.10 per ton on pig iron manufactured from Canadian ore by the process of electrical smelting, and the export duty of \$2 per ton which the British Columbia Government has intimated is its intention to place on crude iron ore, should have a desirable effect.

The further federal bounty of \$1.65 per ton on steel ingots, together with the market for steel rails created by railway development, should lead to the establishment of steel works and rolling mills on the British Columbia coast.

The establishment of a Provincial School of Mines would have a far-reaching effect. A well-equipped institution, presided over by the most clever and practical of mining experts, could do more than anything else towards uplifting the industry and developing an intelligent body of prospectors and mine men.

How could it be brought within reach of miners? By arranging for night classes and short courses. By the Government, mine-owners, labour unions and private individuals offering scholarships throughout the province. These scholarships might be of a moderate cash value, with free tuition at the School of Mines. Not only would successful candidates be enabled to take a course in mining, but the competitors who fell short of the mark would be sufficiently interested to make an effort to continue their studies at their own expense. Many a man would be glad to exchange the Scranton correspondence course, through which he is trying to improve himself, for practical instruction in a British Columbia mining school.

The research work done by the professors in holiday time would be of inestimable advantage. To appreciate this, consider how much was done for the province by the late Dr. G. M. Dawson. Truly he was a pathfinder!

WILD HORSE CREEK, EAST KOOTENAY.

A Pioneer's Idea of its Gold Production and its Prospects.

EAST KOOTENAY'S GOLD DIGGINGS in past years drew thousands of placer miners from various parts. Fort Steele and the Dewdney Trail were far better known in British Columbia in the days when much gold was being recovered on creeks tributary to the upper Kootenay River than they are today. Various estimates of the gold production of the richest of those creeks—Wild Horse—have been made from time to time, and among them that of the late Robert C. Dore, one of the discoverers of gold on that creek. About three years ago the Cranbrook *Herald* published a special number in which was printed a sketch of Mr. Dore. From that the following extracts from the account of a long talk with Mr. Dore have been taken:

"I was the first man to put in a hydraulic plant

on Wild Horse Creek. By the same token, it was on the site of the nickel property, which we have just seen, that the first nozzle ever stirred dirt in British Columbia. The pipe I used was similar to fire engine hose, but it was 6 in. in diameter. It was reinforced on the outside with heavy rope netting, so that it could resist a pressure of 250 lb. to the sq. in. I never worked at such a pressure, but wanted to make sure of my gear. I had it specially made for me at San Francisco, and I need not say it was terribly expensive between the cost of a special style of plant to turn it out and the freight rates of those times. All the same, it paid for itself ten times over.

"By 1870 the gulch had seen its best days. By that date it had ceased to be a poor man's camp, as the shallow gravel had all been worked out. The general appearance of things has not altered much since then.

* * * * *

"Speaking of what amount of gold came out of Wild Horse Creek, I put it at \$15,000,000.

"I had the means of knowing, because I had water rights to sell, and so had inside information of what was really got out. There was a Government duty imposed, but it was evaded in a thousand different ways. The official figures are nowhere near true, nor do they approximate the truth by millions of dollars. I know that men paid duty on probably a tenth of what they got out of the dirt. Many never paid a cent. It was pretty hard for the Government to keep check on the output when the very owners had more than they could do to prevent wholesale robbery from their claims.

"As for the future, all I can say is that I agree entirely with Dave Griffith in saying that there is as much gold in the gulch as ever came out of it. You see around mountains of untouched gravel. There is the Nip-and-Tuck property on the other side of the creek. They have ground enough to keep the creek busy for the next 40 years. They also have the control of all the water rights from Fisher Creek to Brewery Creek. Amongst the owners are Dave Griffith and Mr. Galbraith, of Fort Steele. I have a fair share of untouched ground, too, but nothing like what I had in early days. The Lily May is a splendid property. The quartz in it runs as high as \$3,000 to the ton in free gold.

"I don't know what is the cause of the dry rot, the death in life, which has infested this wonderful country of ours. It must be that the men of the present day haven't the grip and determination of those men I knew in the early days. What do they do? If they haven't the muscle to get at the gold, then I'm thinking they haven't the brains either, to persuade people with more pluck and more money that the gold is still here for the digging, delving and hydraulicking. I tell you, the men of the old times would get the gold out or else get the money in to win it from the ground."

IN THE MOUNTAINS BETWEEN NICOLA AND HOPE.

A Surveyor's Trip to Coldwater River and Thence to the Fraser.

FROM NICOLA TO HOPE, through the mountains separating the valley of the Fraser River between Hope and Lytton from northwest Similkameen and the Nicola country, travelling is difficult, judging from the official report of a trip made by A. W. Johnson, D.L.S., printed in the lately published "Report of the Surveyor General of Dominion Lands for the year ending June 30, 1906." Mr. Johnson made the trip under notice in the field-work season of 1905—two years ago. The country he then travelled through still remains very much *terra incognita*, though, so information relative to it may be of public interest, especially as the time when it shall be traversed by a railway appears to be drawing near. Whether or not mineral deposits that can be profitably worked will eventually be discovered in it is as yet unknown, but the opening up of the coal measures of the Nicola Valley and the underground prospecting of the copper-gold ore showings in Aspen Grove, Bear Creek, and other mining camps situated eastward from the country explored by Mr. Johnson, now in progress with promising results, suggest the desirability of giving wider publicity to the information contained in his report. In the hope, then, that the following extracts will be found of general interest, they are here reprinted from the official publication above-mentioned.

After narrating his experiences between Lower Nicola and the head of Spius Creek, and thence "to where the line crosses the Coldwater," Mr. Johnson continued:

"The Coldwater is perhaps a 100 ft. wide here, and not as rapid as many British Columbia streams, and I think could be driven without much difficulty at high water. There is a lot of timber in Townships 10 and 9, especially near July Creek, which will be valuable when a railway shall come in. This is a probability in the near future, as the only low pass from Princeton part of the country is down a creek which comes into the Coldwater from the Otter Valley, about on a level with the centre of Township 10. It is proposed to build up the Coldwater into the Coquihalla canyon and so to Hope. By all accounts this is the most feasible route through the mountains. Between the point at which the line crosses the Coldwater and the source of the Coquihalla there are narrow strips of bench land that might be cultivated if a railway be built up the valley, but beyond this there is, in my opinion, no arable land. The Coldwater is very much staked for coal, though mainly in provincial territory.*

*"Provincial territory" as distinguished from Dominion lands within the Railway Belt of British Columbia.—Editor MINING RECORD

"At the headwaters of Spius Creek is a lake nearly two miles long, which I have named Murray Lake, as a man of that name tried to make a home on its shores. There is a large open meadow which looks as though it would grow a great deal of hay, but I believe the snow stays so late in the spring that as a matter of fact nothing grows well. At any rate it has been abandoned, and the cabin is used only by an occasional Indian hunter or trapper.

"The line runs parallel with a range of mountains 6,000 or 7,000 ft. in height, with many rocks and precipices, but at a distance of some three or four miles, so that it is really in the foothills of these mountains and does not rise to a greater altitude than 5,000 ft., until it gets down to Township 5. The hills are not precipitous, but consist of long steep slopes, for the most part covered with scrubby balsam and dense huckleberry undergrowth, though in places there are miles of dead standing trees. A heavy wind would make this country very difficult for a pack train. Both blue and ruffed grouse are numerous, and there are some foolhens. Deer are more plentiful than in any other place I know of in the interior, and had it not been for the law-abiding qualities so well known in a government survey camp we should have had plenty of fresh meat. We were sorely tempted. There are also bears, both black and grizzly, though we did not get better evidence of the latter than through footprints as large as a ham.

"Running south from the Coldwater we came into a country with no trails of any description, and the pack train was dragged through with the line. Fortunately there was at first a large area of dead standing timber with comparatively good footing and not very much undergrowth. We again got into snow, but the summer was so far advanced that we could avoid the deepest of it. The hills get higher and steeper and the timber scrubbiest, where there is any, as along the streams, but from the Coldwater to the south fork of the Tulameen, the tops of the hills are nearly all burnt.

"Working down into Townships 8 and 7 we reached the mineral country. In places where one would think no white man had ever been we came across location stakes. Twenty years ago there was quite a boom at Granite Creek, and it was this excitement that produced the Similkameen pack trail connecting the interior with the coast south of the Fraser.

"Every summer there are parties of prospectors out in this district, though I personally saw only one man in four months, and he was on a rock slide a mile away. Most of the mineral is copper in various forms, exploited for the most part around Princeton and Granite Creek, but found in the railway belt too. The only active work in the belt is at Summit City. This has been done on a galena proposition, and is considered rich, but it will take more than my power of demonstration to persuade

the owners that they are not on provincial land. They had walked in so often from Hope that they were absolutely certain my work was wrong, 'and its impossible to use a theodolite in these mountains anyhow because of the slope.' After that, of course, it was useless to argue.

"Summit City, however, is not as large a place as the name might suggest. In the height of summer its population may be on occasion six men; in winter there is no population whatever, and only a cabin or two and an all-enveloping snow drift mark the spot. Transportation is, of course, what all these places want. Ore that has to be packed on horses 40 miles before shipping must be extraordinarily rich to pay. Wagon roads in the mountains cost almost as much as railways anywhere else, and railway companies regard British Columbia as a huge barrier before their trade with the east, one which must be overcome as cheaply as possible with as few diversions as may be on the way.

"It is not easy to form any definite idea as to the real value of a mineralized country. There is plenty of mineral here on the surface; whether the mineral will be in paying quantities under the surface requires proof, that is to say, capital, and capital appears rather shy of this district. You cannot learn much from ordinary prospectors, because most of them were swinging an axe only a year or two ago, and cannot go much further in their description than the repetition of a few catch names like peacock copper, copper pyrites and quartz ore. When you do meet a mining expert you cannot help thinking of the western description of him in which he figures so prominently in the superlative degree. All mining centres believe that they have a bonanza. One or two out of a thousand have; the others have not; so it is quite possible Summit City is a big thing.

"We get nearer the high mountains all the time as we work south, and after leaving the south fork of the Tulameen the timber is green again and a good deal heavier. On this river we were troubled a great deal by thunder storms. A perfect morning without a cloud, and before night heavy thunder and deluge of rain. Speaking of British Columbia, there is nothing that a surveyor fears so much as rain. If he were in a cleared country rain would make little difference one way or the other as long as he could see through the transit. But in these mountains with their dense undergrowth, a shower of rain means being as wet in ten minutes as if one had been swimming. Note books, watches, and everything else one carries get the same treatment. It is no uncommon thing to see men hanging cheap watches in the sun to dry out after dipping their works in the coal oil can. Some of them bake them in the stove instead of waiting indefinitely for the sun, which is very much surer. And if high up the rain is intensely cold, and is by long odds the greatest hardship here. Nor is it possible to lie off for all wet

days. If one did there would be weeks at a stretch when there would be no work done at all.

"We crossed the watershed near the south boundary of Township 4, Range 23, when we found the old canyon trail. This is from all accounts an easier pack trail than the Similkameen, but is out of repair and very rarely used. This point is on a clearly defined line between upper country and coast climates. On the east are balsam and brule, high steep hills up to 5,000 or 6,000 ft., gradually getting lower towards the Similkameen; on the west, 8,000-ft. mountains with huge precipices, cedar, fir and vine maple in the valleys. More important to us, on the east is feed for the horses anywhere; on the west only in widely scattered swamps or along the shores of small lakes. When we got as far as horse feed lasted, which was on a small pond between Mount Hopeless and Sumas, we moved down to Hope, leaving the tie for next season.

"April, May and June were wetter than I had ever before seen them in this part of the country, but we had fine weather in July, except for the thunder storms already mentioned.

"As an agricultural country the district we traversed must be described as a failure, a very distinct failure. There is not enough timber to warrant its being taken out yet. When the mines shall be working much of it will be used by them, and will be handled by portable mills. On the other hand the climate is bracing and not too wet; the scenery is gorgeous, peak after peak as far as one can see on the west and rounded hills for 60 miles on the east. If this was a Canadian Pacific Railway guide book this district would be called a sportsman's paradise. Never having been in a sportsman's paradise I cannot tell, but deer are numerous, black bear are not uncommon, and grizzly bear can be found also. I have no doubt there are goats in the high rocks, but we were not near enough to come across them. There are plenty of grouse. But it is on minerals that the future will depend."

Bullion and concentrates from ore from the Ymir mine have been sold to a total value of more than £430,000 (about \$2,150,000).

Industrial peace has been secured in the federated mining districts in England and North Wales for a further period of three years by the agreement signed in December by representatives of the coal owners and miners. Under this the men receive 5 per cent. advance in wages from the first making-up day in January. There is a clause in the agreement by which, in the event of the passing into law of the "Mines Eight-hour Bill" by Parliament, either party may terminate the agreement at six months' notice, which is regarded as an indication that in the opinion of both the miners and the coal owners the passage of this bill has become a probable event in the near future.

CAMP MCKINNEY MINING NOTES.

CAMP MCKINNEY is once again receiving attention and several of its mining properties are being worked. A well-informed correspondent has written to the *MINING RECORD* as follows:

You know what a long time the old camp has been practically deserted, so it was like "a bolt from the blue" when the few faithful ones who had remained with it learned that some Phoenix people had leased the old Cariboo and intended working it. The unwatering of the mine was a long and tedious

The Phoenix people have been enterprising in putting up their money and deserve to meet with success for the pluck they have shown in tackling a hard proposition, handicapped with an iron-clad lease. They have recently also leased the Sailor group and will shortly unwater that property, from which they anticipate payable returns, as the ore body is almost intact and it is well known this claim carries ore of good values.

Some parties have bonded the Le Roi, a claim about four miles east of Camp McKinney, on the hog-back between the north and south forks of Rock Creek, and are continuing the sinking of the old shaft



View of 20-stamp Mill at Cariboo-McKinney Mine, Camp McKinney.

job, the hoisting machinery was in a poor shape and the pumps worse and so months passed before actual mining and milling were fairly started. Still there were troubles ahead, the old 20-stamp mill was all but worn out, but after considerable patching and numerous break downs, 10 stamps were got into fair running order.

Fortunately the lessees engaged the services of a good superintendent (P. Davidson Ahier, some time since manager of the Idaho-Alamo mines, in the Slovan), who thoroughly understands his work and under his supervision matters have been progressing fairly well. The ore in sight is low grade and to be worked at a profit needs a mill of larger capacity, while the immense body of zinc ore is not amenable to thorough treatment without a preliminary roasting; the assays are good, but the gold cannot be saved on the plates.

started by J. Copland, the owner. The surface showing is immense, from which fair assays in copper have been obtained, and should the values increase with depth, a promising camp is likely to result, as the whole mountain is more or less mineralized. Hugh Cameron owns two claims in the vicinity of the Le Roi and an interest in the Dayton, a little to the north, which latter has a surface showing rich in free gold.

Henry Nicholson has been doing some work on the Snowdon, which adjoins the old Victoria claim and has taken out a few tons of good ore. He would like to see the owners of the Victoria do some work on their property; he feels sure it would repay them. A slide last spring exposed a lot of the ore, and as water can be put on the claim at a comparatively small cost, the top stuff could be run off by piping or ground-slucing and the ore body glory-holed.

SCHEELITE MINING IN NEW ZEALAND.

Example for Owners of Mineral Claim in Cariboo on which Scheelite Occurs.

SCHEELITE was discovered in Cariboo in 1904, but as yet little has been done towards turning that discovery to practical account. *The Mining Journal* of London, England, recently published some information on "Scheelite Mining in New Zealand." In the hope that this will prove useful to those interested in that mineral in British Columbia, it is here reprinted, prefaced by excerpts from the "Annual Report of the Minister of Mines" for the years 1904 and 1906, respectively.

In his report on Cariboo district for 1904, the late Mr. John Bowron, gold commissioner, reported concerning scheelite as follows:

"Mr. Austin J. R. Atkin, who has been associated with Mr. C. J. Seymour Baker, as assayer and metallurgist, in exploiting the quartz veins of the district for the past two seasons, writes me regarding their operations, referring particularly to the discovery of a ledge of scheelite at Hardserabble Creek, which from present indications bids fair to be of much importance. Mr. Atkin says:—

"The most important find of the season, and one which may prove of great commercial value, was made on Hardserabble Creek.

"The following account may draw attention to the care which should be exercised in having every unidentified mineral thoroughly examined and its composition determined: In drifting up the channel some years ago for alluvial gold, some pieces of white mineral were occasionally found, and an examination showed them to be barytes. Later on, the white pieces became more numerous, and seemed heavier, until the dumpbox required so much water to keep the riffles clear, that but little of the fine gold was saved. It was noticed that the finest mineral was the heaviest, and was unlike the white substance (barytes) which first caused the trouble. When the situation was at its worst, a change took place in the character of the bedrock, and at the same time the troublesome mineral disappeared, so that no further investigation into its composition took place.

"Some 'black sand' had been put away and the writer was asked how best to clean it, and to explain the circumstance of the white mineral. After separating some of the latter, an examination, since checked many times, showed it to be scheelite, of very good quality. The old workings being still in good condition, an attempt was made to find the deposit from which it came, and very little work exposed the scheelite-bearing zone. This consists of highly altered country rock, the scheelite being scattered through it in small patches, but it is in the quartz stringers that most of the mineral is found. Some of these, varying from one inch to four inches wide, contain about one-third scheelite, with a little galena, and products of decomposition of iron pyrites. This

zone appears to be from 12 to 20 ft. wide, as determined by work done up to July, 1904, and gives every promise of proving a valuable deposit. Unfortunately, the country rock has been altered by the infiltration of calcite, until it approaches limestone in hardness, so that, before the lode can be opened up, machinery will have to be installed to concentrate the calcium tungstate.

"A test was made by washing some of the decomposed surface, but the ore had not sufficiently weathered to make this very satisfactory, as when the rock was exposed in Tertiary times, the stream removed the surface as soon as it was at all decomposed. However, sufficient clear scheelite was obtained by this crude method to indicate a concentrating ratio of 1 into 10 (approx.). These concentrates contained about 70 per cent. tungsten trioxide, with very little galena or pyrites. With a ready market, which this mineral commands at present, the outlook for the new find is encouraging.

"There are other deposits of scheelite in the Cariboo schist belt, for the writer has specimens in his possession which are 'float' from other ledges, which further prospecting may discover, although these ledges are not to be looked for in Willow River section."

"A quantity of this scheelite was sent to Mr. E. C. Rollins, of Chicago, to have tests made to determine its value, in response to which a communication was received from Messrs. Cramer and Burt, of 1,114, Monadnock Building, Chicago, stating, 'The scheelite was of good quality, and there was at present a considerable demand for it, at prices varying from \$360 to \$460 per ton, according to quality.' As there is no duty on tungsten ore going into the United States, the discovery of its existence here in large quantities but emphasizes our demand for proper transportation facilities."

In his report for 1906 the gold commissioner for the district quoted Mr. C. J. Seymour Baker, who had earlier been associated with Mr. Atkin in exploiting the quartz veins of the district, as having written: "The deposit on Hardserabble Creek was visited during the 1906 season. The scheelite appears to be distributed very irregularly in the country rock, which has quartz in lumps and lenses running through it. The quartz often appears to the eye to be richer in scheelite or in tungstic oxide than the country rock, even where it is actually much poorer, as it is difficult to judge of the value of the ore by its appearance. It is doubtful if the scheelite carries any gold or silver, although that near the surface of the bedrock does, but this is believed to be derived from the auriferous alluvial above it."

SCHEELITE MINING IN NEW ZEALAND.

The following is the article in the *Mining Journal*, above referred to:

"Through the enterprise of Messrs. W. & G. Donaldson, Macraes Flat, Otago, New Zealand, the development of scheelite mining has made rapid

progress during the past few years. This is practically a new industry for the colony, which promises to find employment for a large and increasing number of miners in the near future. In developing their Golden Point and Tungsten properties for gold the Messrs. Donaldson came upon extensive deposits of scheelite, and after many experiments and the adoption of the latest appliances for utilizing this mineral are now making regular shipments to Europe, and especially to Germany, where the value of scheelite or tungstic acid is highly appreciated by steel and other manufacturers, and finds a ready market and brings a high price. This firm's exhibit at the recent Christchurch Exhibition, showing the mineral in its various stages of development, created much interest in mining circles. The *Otago Witness* says:

"The history of this industry is interesting, as showing how valuable minerals may lie at the feet of miners and not be recognized, or the means of profitably working them not be known. The occurrence of scheelite in the Macraes district has been known for 25 years or more, and a sample of the ore was shown at the Dunedin Exhibition by Mr. A. B. Kitchener. A year or two afterwards Messrs. Kitchener and Donaldson employed men to take out and hand-dress the ore, and as a result they shipped 6 tons, which was of poor quality—being only 40 per cent. in tungstic acid—and brought a price that just covered expenses. Three-fourths of the stone could be dressed only by machinery, which at that time was not available. At the same time a miner started in another part of the district, and found considerable quantities of very fine ore, but the same difficulty arose. Nothing further was done until, some years later, Messrs. Donaldson, who were working the reef for gold, opened up the lode in a fresh place, and, in doing so, discovered some extremely rich deposits of scheelite. They hand-dressed 6 tons, and, declining £25 (about \$125) per ton for it, shipped on their own account to London, where it realized £60 per ton. Immediately after the sale in London the same parcel was resold in Hamburg for £80 per ton. Anticipating a good price, Messrs. Donaldson made arrangements for special machinery to treat the battery sands for scheelite after they had extracted the gold in the ordinary battery (stamp mill) process. The machinery proved a complete success, and was able to recover the scheelite from the tailings and dress it to 72 per cent. of tungstic acid, which is the highest reached by any scheelite put on the market. Since then the mine has been a regular producer of gold and scheelite. The first year's output of scheelite was of a value of £6,000 (about \$30,000). Each year improvements have been made to the plant, which is now equipped with the very latest and best appliances. An assay plant has been erected for determining the amount of gold in the stone and for the assay of tungstic acid in the scheelite. Systematic assaying has shown that the tailings contain half an ounce of gold to the ton.

These have been saved, and there is now about \$,000 tons of tailings awaiting treatment by cyanide.

"A year ago the brothers opened up and erected a plant on their Tungsten mine, situated about five miles west from the Golden Point mine, but on the same line of reef, and about six miles from Hyde. The two mines together employ about 50 men.

"The uses of scheelite, or more properly speaking tungstic acid, which is extracted from it, are various. It is used as a mordant in calico printing, as a constituent in some finer grades of paint, and renders clothing non-inflammable. Its greatest use, however, is in the manufacture of steel of the very highest grades, such as engineers' tool steel for turning lathes and steel for the inner tubes of big guns. Its characteristics are great density, toughness, and hardness. Such steel is placed on the market by different makers under a variety of names—*nickel tungsten steel*, *high-speed steel*, *self-hardening steel*, etc. It has within the last few years revolutionized engineering methods. A 1-in. lathe operating on mild steel has removed as much as 7½ cwt. of parings per hour. The lathe may be driven at a speed so great that it becomes glowing hot, yet it does not lose its temper, and is therefore an ideal tool steel. Turning work can now be done at less than half the former price, and work which formerly was done at the forge is now done with this steel in the same time that it would take to heat the iron. The steel would be more largely employed but for the fact that the old style of lathe is not strong enough or high enough in speed to make the best uses of it. There is an increasing demand for scheelite, and the future of these mines may be looked forward to with confidence. Their development opens up a new field for the employment of labour and the investment of capital."

The correspondent of the *London Mining Journal* at Johannesburg, Transvaal, shows the labour situation there in connection with the mining industry as being in strong contrast to that in the mining regions of Canada and the United States. Writing on August 3 to the journal mentioned he said concerning the miners' strike in the Transvaal: "The strike leaders have made a rapid change of front, and suddenly declared the dispute at an end. They claim a victory with all the impudence of their class, in spite of the fact that all the mines have been full up for some time past. The fact is, they realized the game was up; the men deserted their leaders and sneaked back to work in tens and twenties. Those unable to secure work expected to draw money from the strike funds, which were very low; so as a means of shifting this liability the strike was declared over. Versatile Mr. Outhwaite, who is in England, claims a great victory for the men; let him come here and see the hundreds who, before the strike were earning good money, now find their places filled, whilst they walk the streets without the price of a meal in their pockets."

COPPER ORES OF BOUNDARY DISTRICT.

BOUNDARY DISTRICT was visited a few weeks ago by Geo. L. Walker, editor of the *Boston Commercial* and writer of the widely-read "Walker's Weekly Copper Letter." Mr. Walker afterwards published his observations on the copper mines and smelting works of the district. Included in his comments were the following:

"There is evidence that the copper ore deposits of the Boundary district were formed in a comparatively

geologists to explain this absence of secondary enrichment: First, the ore is of very recent occurrence; second, the cold climate is opposed to rapid oxidation and leaching; third, leaching did occur previous to the recent glacial period, and the capping and secondary enrichment zone were ground off by the glaciers, leaving the primary ore exposed. It is probable that all three factors contributed to bring about the condition which now exists.

"The absence of secondary enrichment accounts for the very low grade of the Boundary ores. On the



Exterior View of part of British Columbia Copper Company's Smelter at Greenwood,—Showing Down-take Pipes from the three 700-ton Blast Furnaces to Dust Chamber. The Slag Car Run-way is on the Near Side of the Furnaces, as viewed, and the Converter Floor on the far side.

recent geological period. The ore is in its primary or original state. There is not as much secondary enrichment, oxidation and leaching in the entire district as may be found in one acre of ground in Butte, Globe or Bisbee. It is a safe estimate that 99 per cent. of all the copper being mined by the three leading companies occurs in chalcopyrite form. This mineral comes to the very surface, and in one instance I saw it protruding, when the dirt had been removed from an ore deposit.

"In a few places the ore shows weathering to a depth of a few inches, and azurite, malachite, bornite and other minerals of copper occur in very small quantities. Three theories are advanced by different

other hand, it simplifies the mining and smelting, and contributes to the investment character of the mining enterprises. There is good reason for the prediction that all the mines operating in the district a generation hence will be handling ore which will yield within 1 to 2 lb. of copper and 10 to 20 cents per ton in gold and silver of what are being secured today. The ore bodies are being mined already about as deep as they go, their position, as a rule, being more or less flat, and all the way from the surface to a depth of 1,000 ft. Were it not for the fact that the ore is usually 200 ft. or more in thickness, its semi-horizontal position would operate against low mining costs.

"Because of the uniform character of the Boundary ores, it is possible that some method of water or magnetic concentration may eventually be used before smelting, thereby greatly reducing production costs.

"The ideal way to operate the Boundary mines would be to smelt all the ore in one plant, thus economizing in management, clerical forces, laboratories, sampling mills, travelling expenses, freight, and in many other directions. The logical outcome of conditions developing here now will be an ultimate consolidation of the several operating companies. Notwithstanding that all three companies are strong enough to go alone, they would do better united."

SHIPPING TRADE OF NORTHERN MINES.

NORTHERN MINES are increasing in number and importance. Among other evidences of this fact is the steady expansion of the shipping trade between southern British Columbia ports and northern mining districts. Capt. S. F. McKenzie recently gave the *Victoria Times* the following information:

During the past summer the McKenzie Bros.' steamers have carried about 63,800 tons of ore, representing in value approximately \$1,000,000, from Prince of Wales Island and Whitehorse, for the smelters at Ladysmith and Crofton. The greater proportion of this ore came from the Mount Andrew, Karta Bay and Sulzer mines, all on Prince of Wales Island, in southeast Alaska. All of the ores, with the exception of those from Whitehorse, represent trade which has been diverted to British Columbia smelters, from the American side, by the shipping facilities provided by McKenzie Bros. and the hustling they have done to get the business. In their northbound trips the steamers have transported 150 carloads of machinery, for the Guggenheim interests in the Yukon. These shipments consisted largely of steel hydraulic pipe. From British Columbia ports they carried 1,350,000 ft. of lumber to Skagway, and in addition to this about 500,000 ft. of building material for boats, barges, etc., for the White Pass & Yukon Railway, this last going from mills in Victoria. Of general merchandise they carried about 8,000 tons. Then there were 2,500 steers, 3,000 sheep and 500 hogs. All these shipments were for points in the Yukon, and represent business done since April last.

In order to handle this business McKenzie Bros. had in commission the steamer *Haldis*, of 2,800 tons, her sister ship, the *Halvard*, of like tonnage, and the steamer *Henriette*, of 1,200 tons, also the barges *Hayden Brown*, 1,200 tons, *Melanope*, 3,000 tons and *Canada* 600 tons.

Capt. McKenzie said further that vessels were that week taking 700 tons of coal to the whaling stations on the West Coast, 125 tons for Ikeda Bay and Jedway on Moresby Island of the Queen Charlotte

group, and 600 tons for Skagway, Alaska. This last shipment was leaving on the *Haldis* the next day. The steamer would bring down 2,800 tons of ore for Ladysmith from Mt. Andrew on the return trip. The *Halvard* had just arrived at Ladysmith with 2,800 tons of ore from Karta Bay and Sulzer. She was to take out 200 tons of freight for Prince Rupert and about 800 tons for Skagway. On the downward trip she would call at Sulzer for a full cargo of ore.

DEATH OF A PIONEER PLACER GOLD MINER.

ROBERT C. DORE, a pioneer of the Kootenay country who came to the Province in 1864, died at the St. Eugene hospital, near Cranbrook, East Kootenay, on August 31. From a lengthy obituary notice written for the *Cranbrook Herald* by R. L. T. Galbraith, Indian agent at Fort Steele, it is learned that the late "Bob" Dore was one of a party of placer miners who in 1864 discovered gold on what was afterwards called Wild Horse Creek. News of the richness of the creek soon spread and somewhere about 4,000 miners were attracted to it to "try their luck." Dore worked on the creek, with varying success, until 1872 and then left for the Cassiar country. Later he lived at San Francisco for a while; next he went to Arizona; then he returned to California; afterwards he was at Butte, Montana; finally he drifted back to Wild Horse Creek, where he had lived the last 15 or 16 years. Mr. Galbraith concluded his notice of this old pioneer as follows:

"R. C. Dore was a man widely known for his many generous acts, liberal and large hearted, when he had money, he was always ready to share his last dollar with a friend, or espouse the cause of anyone who had a grievance that he thought should be redressed. He leaves a widow and daughter to mourn his loss.

'When the history of Kootenay shall be written the name of Bob Dore, a man who tried to do his part in opening up and developing its mineral resources, should not be overlooked, and now that he is gone let us cover the few faults he may have had with the broad mantle of charity, and let our prayer be 'peace to his ashes.'

"Of the old pioneers of 1864 only a few remain. They were a noble band of energetic and fearless men, who did a great and good work in bringing to the notice of the outside world the vast resources of our wonderful Kootenay district. The hardships which these men endured very few of the present residents can realize."

The Katalla Herald, published in Alaska, has been informed that Alaska smokeless coal will soon be on the markets of the Pacific coasts of North and South America.

CONDITIONS IN THE SKEENA COUNTRY.

OF THE TELKWA mineral belt some reliable information, obtained from Geo. R. Naden, M.P.P. for Greenwood, on his return from that district, was published in the *MINING RECORD* of October, 1906 (pp. 401-2). Last May Mr. Naden again went north and, after spending four more months in the Skeena country, is further favourably impressed with its capabilities and prospects. When in Nelson lately on his way back to Greenwood, asked by the *Daily News* as to his opinions with regard to that country as a district for settlers and for mining Mr. Naden replied: "I think the country is all right. There is a lot of magnificent land which is capable of growing very good crops indeed. The trouble is that so much of it is blanketed by South African scrip and speculative purchase that the homesteads of the real settlers are far too much scattered to permit of the founding of any really substantial towns. The timber in the country is small and as timber, at all events just now, is worth very little. On the other hand it is not difficult to clear the land. But again the problem of transportation comes in. The settler finds it of infinite inconvenience to get in his supplies and naturally there is no rush for settlement.

As for the mining position, that is far different. There are numberless outcrops of all kinds of minerals and the big blow-outs that are to be seen, the big veins to be traced here and there all over the Bulkley Valley, the Babine Range and other places, veins that rival in extent the famous Boundary district showings and which will go even better on an assay, must make the country. But in the meantime supplies cost too much for successful working. There has been a lot of surface work done. One company alone has spent \$50,000 in this direction. But everything waits upon the railway. When that shall come the district must go ahead.

"It is probable the first terminal of the Grand Trunk will be Kitimat, inasmuch as the head of Kitimat Arm is only 40 miles over an easy grade from Kitsilas Canyon on the Skeena River, past which the new railway must be constructed, whereas Prince Rupert is 70 miles beyond, over a difficult country. Beside, an old charter for a railway from Kitimat to Hazelton, carrying a subsidy, has been acquired by the Grand Trunk Pacific Company and by building to Kitimat this subsidy could be earned."

Early in September an ingot of gold from the Cariboo Gold Mining Company's big hydraulic mine at Bullion was brought to Ashcroft to be forwarded thence to whatever destination the company had consigned it. The *Ashcroft Journal* guessed its value to be about \$20,000, but as absolutely no reliable information appears to have been available upon which to base an estimate, this must be regarded as only a guess.

PROGRESS AT LE ROI NO. 2 COMPANY'S MINE AT ROSSLAND.

ROSSLAND MINES today give more promise of permanent productiveness than at any previous time in their history. Among others, that of the Le Roi No. 2, Limited, is being developed with increasingly gratifying results, as indicated by recent reports and cables sent by the resident manager to the company's head office, London, England.

For August the manager reported:

"West Poorman Tunnel—Here a distance of 23 ft. was driven. The object of this work is to connect with the main Poorman tunnel. Work was started immediately below an old prospecting shaft which contains a fairly good showing. This tunnel is also approximately parallel to, and 80 ft. above, the Mayday tunnel—the Mayday tunnel being driven on the western end of the Poorman vein. The drive is not yet in solid country.

"Mayday tunnel—34.3 ft. were driven to tap a small prospect shaft which was broken into towards the end of the month. The average assay met with was 0.18 oz. gold and 0.8 per cent. copper over a width of 5 in.

"400 raise—This was carried upward a distance of 53.7 ft. to tap the ore on the sill floor of stope 4 and broke through on the last day of August. As yet only narrow streaks of mineral have been met with. The average assay has been 0.71 oz. gold and 3.2 per cent. copper over a width of 11 in. The ore will now be stoped underhand into the raise, and as work progresses eastward we expect to meet with some high grade ore.

"700 drift—This drift on the H ore body was driven westward a distance of 124.9 ft., but has not met with good values up to the present. The average assay has been 0.04 oz. gold and 0.6 per cent. copper over an average width of 15 in."

Three cables published in England in September follow:

"Diamond drill hole No. 111, 300-ft. level, vertically above stope No. 32 has struck ore 43 ft. to 50 ft., 4 ft. of which assays 0.30 oz. gold, 2 per cent. copper. It is undoubtedly H vein. Assays remaining 3 ft., will be forwarded on as soon as possible."

"In reference to my cable, dated the 12th, 2 ft. out of the remaining 3 ft. assayed gold 0.34 oz., copper 2.6 per cent. Remaining 1 ft. on the foot-wall side of the vein assays gold 0.16 oz., copper 0.9 per cent. Average assay of ore is, over 7 ft., gold 0.29 oz., copper 2.01 per cent."

"Diamond drill hole 112 has struck ore, H vein, 300-ft. level, from 67 ft. 6 in. to 69 ft. Assayed gold, 0.24 oz.; copper, 1.50 per cent. This is about 30 ft. distant from and to the west of tramway dyke. We shall commence to drive on vein with two drills before the end of the month."

RECENT DEVELOPMENTS AND PRESENT PROSPECTS OF THE YMIR MINE.

Expert Opinion Indicates Occurrence of Another Important Lode.

ANOTHER VEIN OF ORE is believed to exist in the Ymir mine. Reasons for this belief are contained in a report made to the directors of the Ymir Gold Mines, Limited, by the company's consulting engineer, R. Gilman Brown, from which report the following has been extracted:

"It will be remembered that there is indisputable evidence, in large and small pieces of rich float scattered plentifully over some 200 to 300 ft. along the surface 100 ft. or more up the hill from the Ymir vein, of the existence of a new vein. The natural assumption on which the first work of search for this was prosecuted was that this vein was parallel to the old vein. A complete cross-cutting of the surface by trenches and shallow tunnels did not show any such vein, but did find several dykes and faults not hitherto known to exist, and so interlacing that they might easily obscure the outcrop. Exhaustive study devoted by the manager, Mr. Nichols, to the underground workings while this work was in progress disclosed some features that pointed strongly to the existence of a transverse vein, which might have had by its intersection with the Ymir vein a strongly enriching influence upon that vein. At the same time it was shown that a vein in this position could have furnished all the float, and the surface showing of a large crack or fissure about in the place where this vein should have occurred was corroborative evidence of its existence. Additional work was instituted on the lines of this theory, but here again we have so far to face disappointment. There are still some portions of this work to be completed, but if we are unsuccessful in this we are driven to the conclusion that either, as already suggested, the action of faults or dykes has obscured the new vein on the surface or that the float came from a projecting point or points of ore, the rest of the vein being 'capped,' as seems to have been the case with the original Ymir vein. The first of these alternatives demands elucidation. If the new vein were cut near the surface by a flat-lying thrust fault a block of ore would have been sheared off, and subsequently disintegrated by natural forces so as to form the float. At the same time this fault would have covered the vein so that it would not now show at surface.

"With both of these contingencies in view we are now searching for clues on the surface, critically examining all dykes, faults and seams, for any evidence they may furnish as to the capping fault. At the same time we are cross-cutting through the Rockland dyke from the long northwest cross-cut on the 200-ft. level with the double purpose of determining whether the Speak fault could have been the obscuring factor, and of prospecting for any vein that would answer to the second alternative.

"In the two and a half months available this season for outside work we shall have exhausted the possibilities of the surface and proven the ground from the 200-ft. level to within 250 ft. of the Ymir vein. Through the winter work can be prosecuted to advantage in pressing the cross-cuts here to the northwest under the ground already embraced in our surface work.

"In carrying out this search for the new vein we have accomplished some 1,500 ft. of shallow tunnel and cross-cuts in less than five months. That so much has been done in such a short time is due to the skill and energy of Mr. Nichols. While so far we have met with disappointment in this search, the present season's work is by no means thrown away, for we have gained knowledge that was heretofore wanting on the general geological situation on the hill, and if we shall be able to carry the work through to successful completion it will be to the greatest advantage to us in subsequent operation. It should also be pointed out that the old workings on the Ymir vein afford the best possible means of attack on the ore bodies that must exist in the undiscovered new vein, and once the vein shall have been located will make its opening up simple and inexpensive.

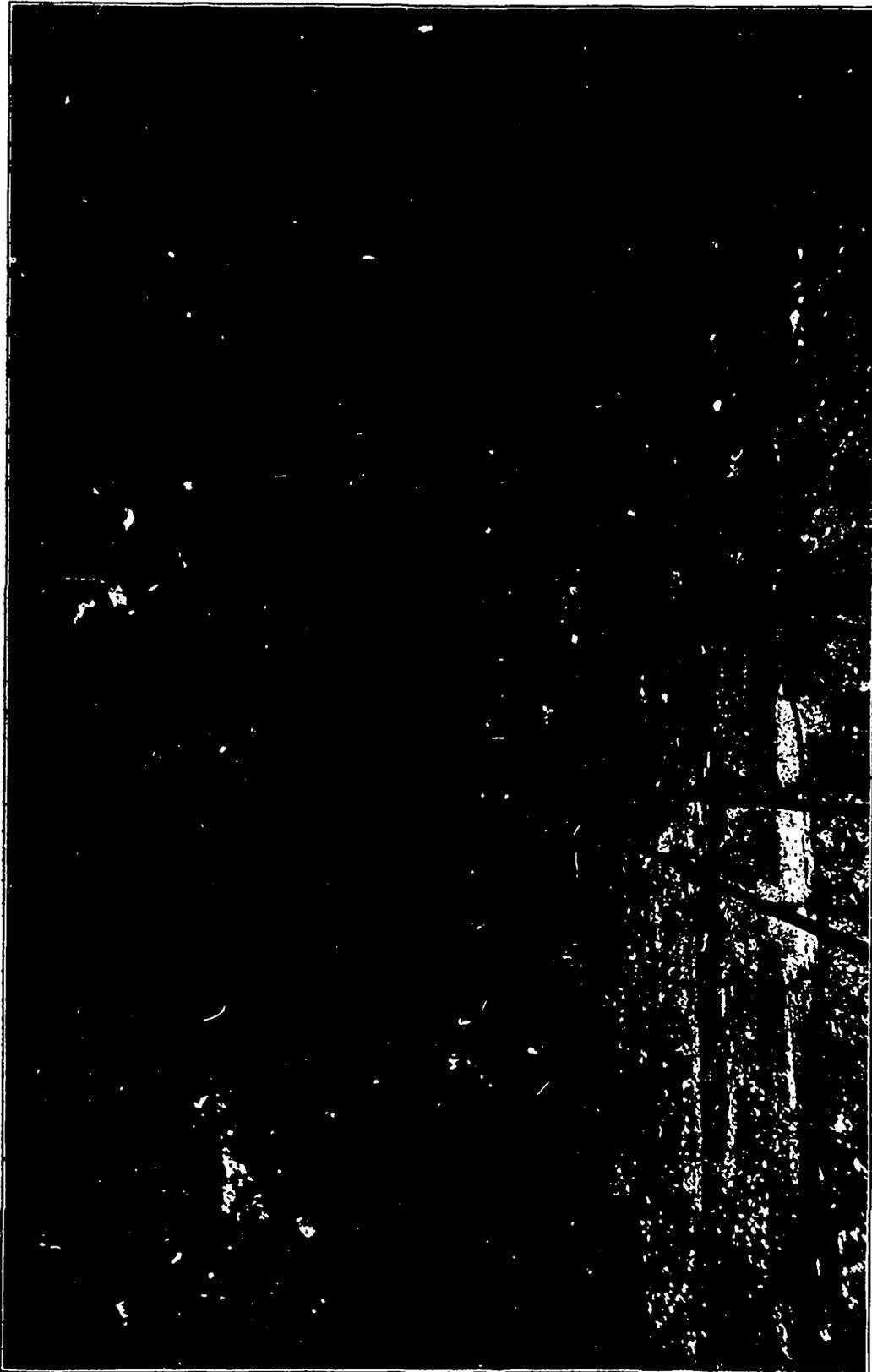
"One thing is clear to everybody who has been over the ground, viz., that somewhere in a comparatively small tract of hillside, there exists a vein similar in character to the Ymir, carrying ore of as good, if not better, grade, and it must be admitted that with the large amount of work done this season we are now in a better position than ever to find it.

"From the first of March to the end of July, we accomplished nearly 800 ft. of development work in the old vein. This work was in many places apparently successful in that considerable faces of good payable ore were disclosed in it, so much so that we felt justified in again starting up the mill. Here, however, we met with disappointment; after a very short period of work the ore in almost all of these faces dropped in grade, so that they became unprofitable to work, and after a short run it was thought desirable to close the mill down.

"On the strong advice of Mr. Nichols, in which, in view of the proven irregular occurrence of the ore in the near portions of the vein and of the general conditions, I concurred, we were led to abandon for the present all stopping on the old Ymir vein and milling the product. This is not to say that we have given up the idea of further profitable ore shoots in the Ymir vein, but it appears that in the particular region which we can now prospect, the values are very 'spotty' and cannot be relied upon to extend any considerable distance, and therefore cannot be mined alone with any assurance of profit. Mr. Nichols is of the opinion that the Ymir ore shoot was due to enrichment from a transverse vein, and that it is towards the southwest that we must look for the continuation of our surface shoot. The great bulk of the work in the mine, however, has

been done towards the northeast, and as it means expensive driving on each of the existing levels to prove this point, and would occupy a great deal of

time and involve large expense, it has seemed best for the present to concentrate our resources and energy upon the search for the new vein."



View of one of the Stopes in the Ymir Mine, Nelson Mining Division.

The illustration appeared in the "Annual Report of the Minister of Mines for 1901." The Provincial Bureau of Mines has kindly permitted its use here to admit of an idea being given of the size of the Ore Bodies mined in the Old Workings of the Ymir Mine. The London and British Columbia Goldfields, Limited, commenced the development of this mine in November, 1896. In September, 1898, the property was acquired by the Ymir Gold Mines, Limited. It is stated that dividends totalling \$102,000 were paid before the higher grade ore gave out. The mine has been extensively developed down to the 1,000-ft. level.

GEOLOGICAL SURVEY WORK IN THE
SIMILKAMEEN DISTRICT.

IN THE SIMILKAMEEN the Geological Survey of Canada has been continuing its investigations this year. It is desired by those interested in the development of the varied mineral resources of that large district that the scope of the Survey's operations shall be enlarged. The *Similkameen Star* on September 18 made the following comment:

Charles Camsell, geologist, of the Geological Survey branch of the Dominion Department of Mines, was in Princeton last week on his way to Agate Mountain, near Wolf Lake, where his party will make a collection of the agates to be found in large quantities there. Last year Mr. Camsell took to Ottawa some of the agates, which proved to be of great interest to the students of petrography there. Since then the stones have been in large demand all over the country by collectors. Agates are beautiful when polished but are not much used in fine jewelry. There is at Wolf Lake a mountain of them, which may prove to be of considerable economic value. Mr. Camsell has about completed the work of the season, which was much shorter than that of last year.

The importance of the Similkameen as a field for mineral research and scientific study demands that it receive closer inspection and larger appropriations from the Department of Mines. An exhaustive study of the origin and source of the platinum placers of Granite Creek and Tulameen River may result in the discovery and operation of large platinum mines. In any case a scientific investigation and report thereon is due from the Dominion Department of Mines. So far the only examination and report of any importance was made by Prof. Jas. F. Kemp, of Columbia University, New York, for the United States Geological Survey (see Bulletin No. 193). The attention of the Hon. Mr. Templeman, Minister of Mines, is respectfully directed to the platinum resources of the Princeton district with a view to further discoveries.

Mr. Camsell may find time to make a hurried visit to Granite Creek and the North Fork coal banks before returning to Ottawa. It is hoped that next year he may have instructions to study platinum conditions here.

G. R. Naden, M. P. P. for Greenwood, has returned from his second visit to the Telkwa and Copper River district. He has made investments in mining property there, but considers that prices asked for undeveloped properties at present are too high. Speaking about the Telkwa, Mr. Naden said: "It will be one of the big camps of the province, providing the wonderful surface showings indicate ore bodies that go down. The ledges appear to have continuity and there is enough ore to warrant the building of a railroad in from the coast, independent of the Grand Trunk Pacific."

THE AMERICAN MINING CONGRESS AND
FRAUDULENT MINING SCHEMES.

PPROMOTERS of fraudulent mining schemes are not now permitted to carry on their swindling operations in some parts of the United States as freely as in the past. Following the activity of Lewis E. Aubury, state mineralogist for California, who has succeeded in having some of the swindlers punished, comes the information that seven of the states have passed laws similar to that which went into effect in Connecticut on September 1. This law forbids the publication of exaggerated and false statements regarding the value of mining property, and is aimed at promoters of "fake" mining schemes. Its violation is punishable by a maximum of 10 years in the penitentiary.

Regarding the attitude of the American Mining Congress in this connection a mining newspaper at Denver, Colorado, says:

There is much encouragement for those engaged in legitimate mining enterprises in the announcement recently made by the press dispatches that some of the leading members of the American Mining Congress will hold a meeting in Denver in a few days to prepare plans for obtaining the passage of some mining legislation intended to put fakers out of business. A despatch states that members of the mining fraud committee, which consists of mining men of broad experience, for nearly six months have been considering the establishment of some method by which the fraudulent mining companies may be put out of commission, and at the meeting suggestions representing extensive preparation will be represented.

The mining fraud committee consists of C. J. Downey of Denver, R. L. Herrick of Scranton, Pa., A. W. McIntyre of Everett, Wash., H. C. Beeler of Cheyenne, Wyo., and Judge W. F. Clarke of Glover, Vt.

There is much work for this body of men to perform, for fakers are thick and their schemes multifarious. The laws must be comprehensive to cover all the methods employed to wheedle money out of persons who hope to get fortunes out of the ground. They should not only deal with those palpable deceivers who promote alleged enterprises that have no merit; who deal in grossly exaggerated advertising matter; who sell stock in companies and pocket the proceeds without doing development work on mines or claims, but they should also hedge about stock manipulators if the ingenuity of man can devise a statute that would reach this class of malefactors.

The Similkameen Star states that J. E. McCauley has started a gang of men on the Reco mine, and will work six or more men during the winter. Necessary buildings are now being erected and things put in shape. The first work to be taken in hand will be a cross-cut tunnel to tap the lead. The working force will be increased as occasion demands.

COMPANY MEETINGS AND REPORTS

TYEE COPPER COMPANY, LIMITED.

(Continued from last month.)

THE GENERAL MEETING.

The following report of the general meeting of shareholders is from the London *Financial Times*:

The secretary (Mr. W. Gardner) read the notice convening the meeting and the report of the auditors.

The chairman said: 'Gentlemen,—The balance-sheet having been in your possession for some days, I presume it is your wish that it be taken as read. Before proceeding further, I take this opportunity of expressing our sorrow, in which I feel sure you all join, at the loss sustained since our last meeting through the decease of our friend and co-director, the late Mr. Ludwig Loeffler, who was a tower of strength in the deliberations of the board. His son, Mr. H. Loeffler, at the unanimous wish of the other directors, kindly consented to fill the vacancy. Before moving the adoption of the report and Balance Sheet I crave your attention for a few moments while we peruse the accounts in the order they appear in the report. Profit and Loss Account—The maintenance, repairs and depreciation at the mine. £2,606 17s 10d, and at the smelter, £2,182 15s 7d, amounting to £4,789 13s 5d—this, you will find on referring to your last year's report, is much smaller owing to the fact, which I then explained, that the depreciation we then wrote off was 25 per cent., whereas this year it is 10 per cent., which we consider ample. The whole of the cost incurred during the year for prospecting and developing, £12,532 10s 6d, and new outlay £3,221 14s 11d, has been paid for out of revenue. On the credit side the figures explain themselves. Everything in the Revenue Account is so plain that I will not detain you by going over it. I now desire to draw your attention to the Balance Sheet. On the debtor side the item sundry creditors comprises the usual monthly accounts, which have all been discharged, with the exception of income tax. On the credit side everything is stated clearly. I shall have much pleasure in asking you to confirm a recommendation of the board to pay a dividend on August 1, 1907, at the rate of 7½ per cent. per annum, free of income tax. I regret that the long-looked-for ore body has not yet been found, though your local director, Mr. Clermont Livingston, is still hopeful that we shall eventually succeed, and I would have you understand that we have still a large extent of property yet unexplored. At the same time I must congratulate you on the improving conditions of our smelting business, which has principally arisen from the opening up of copper mines in Alaska, the Yukon Territory and on the Pacific coast. The mines in these districts are only in their infancy, and several large contracts have already been made with our smelter. The position of Ladysmith as a smelting centre is excellent, being connected as it is by both rail and sea. Matters are now having the earnest consideration of your board as to the wisdom of duplicating the capacity of your smelter. Plans, etc., with this object in view arrived yesterday from our general manager, and these will, of course, receive our careful attention. I take this opportunity of informing you that at the express wish of the board I am making arrangements to visit the mine early next month, so as to confer with Mr. Livingston on certain important matters. I have now much pleasure in moving. 'That the report and accounts as now presented be and they are hereby received and adopted.' After this has been seconded, and before putting the resolution to the meeting, I shall be very pleased to answer any questions, as far as it is in my power to do so.'

Mr. Nicol Brown seconded the motion.

A shareholder asked why an alteration had been made in the form of the monthly report and why the shareholders were not informed as to the value of the custom ore treated.

Mr. Root congratulated the directors on the excellent way in which the Balance Sheet was produced. It was the clearest

Balance Sheet it had ever been his lot to read, and his only regret was that it was not more favourable. He did not say this, however, as a criticism of the actions of the directors, who deserved the hearty support of the shareholders. Like all mining concerns, they had had their difficulties, though they hoped to get to the end of them; but he would sound a note of warning to the board. He did not like the hopeful way in which they were looking at things, and he did not think that as a company, with assets valued at considerably more than the market value of the shares, they should spend those assets in too much prospecting. There was more than sufficient work for their smelter to do, even without using any Tyee ore at all, and it seemed quite possible that the company might be developed from a mining undertaking into a commercial smelting concern, paying good dividends from that business alone. They had a large amount of land to exploit, and seemed to propose spending the company's assets on its exploitation, but he, as a shareholder, was not anxious to run a very speculative business with the idea of trying to find copper properties or copper ore when they knew there were hundreds of other copper properties with ore in sight, which this company acquire and begin to work at once if they wished to use their money in that way. After urging the need for the exercise of economy, and urging that if exploratory work were to be done, it should be done by other people under royalty from the company, the speaker concluded by thanking the directors for the splendid and straightforward report they had produced under somewhat adverse circumstances.

A shareholder: "Is it possible to make a profitable business of smelting alone?"

The chairman: "Yes. The first question put was as to the alteration of the form adopted in sending out the report. We altered it because whereas, in the early part of the time, the smelting was chiefly of the Tyee ore, and the custom ore was an adjunct, in the last few months there has been a larger portion of custom ore smelted, and we altered the form of report accordingly. We do not feel inclined to make public all the figures of the custom ore; it is a business, and you must have confidence in your directors that they will conduct that business properly. To tell all the figures would be decidedly wrong. We go into everything carefully; indeed, there is not even a trifling detail that we do not investigate. With regard to the mine, we are not going to spend money extravagantly and waste the capital we have in finding a fresh body of ore, but when we know there are certain indications which point to the existence of such ore, if we were to sit down and not pursue our investigation, I should say we were not fit to conduct your business. You may rest assured we have your interests at heart, and do not intend to spend the company's money needlessly. If, however, we let other people make this investigation and they come across a good body of ore, as we hope we shall, you would say we were very simple! We are certainly not going to do that. We are going to investigate carefully; and I may say that all that we have spent in this direction has come out of profits. It can be shown that we have a large amount of money available, but it is not the object of the Tyee Company to return that money, and we do not intend to do so, but rather to use it to the best of our ability and conduct the business properly. Our smelting business is growing fast, and for that reason plans of the proposed addition have been sent over, and I am going out to confer with the manager in regard to the subject. I have no doubt it will be eventually a very good business. But at the same time we have every reason to hope we may find a good body of ore, and, if we do, the value of the property will be doubled or trebled. Are you going to sit still because you are timid and will not spend any money? Surely you have confidence that we will not spend your money unnecessarily. We have written the property down and have pursued a very conservative policy, because even when we have paid this dividend we shall have something like £107,000 left. We have not frittered your

money away, but have spent it wisely, and shall continue to do so. We shall not take up a different attitude from what we have been doing, and I hope that in that we shall have your support. With regard to the profits on smelting, we do not tell anything of that sort to anyone, any more than any of you would give details of your own professional business to anyone else who was similarly engaged."

The motion was carried unanimously.

The chairman next moved: "That a dividend at the rate of 7½ per cent. per annum, free of income tax, be and it is hereby declared and payable on August 1 to all names stand-

ing on the register of members on June 24, 1907." The motion was carried.

Messrs. T. H. Wilson and H. Loeffler were re-elected directors, and Messrs. Everett Morgan and Grundy re-appointed auditors.

Mr. Judge proposed a vote of thanks to the chairman, directors and the staff at the London offices and in British Columbia, remarking that the whole company had been managed exceedingly well and that all the shareholders would be interested in the further developments which Mr. Wilson might be able to tell them about when he returned from his visit to the property. The vote was unanimously accorded, and the proceedings terminated.

BALANCE SHEET, AS ON APRIL 30, 1907.

To Capital—Authorized, £180,000.

	£	s.	d.
Issued and Subscribed, 180,000 ordinary shares of £1 each, fully paid	180,000	0	0
" Sundry creditors	7,378	11	1
" Revenue account	19,341	6	3
	<u>£206,719</u>	<u>17</u>	<u>4</u>

Dr.

Cr.

	£	s.	d.	£	s.	d.	£	s.	d.
By Properties, concessions, etc., as per last Balance Sheet				62,545	13	2			
" Properties acquired during year				3	2	6			
				<u>62,548</u>	<u>15</u>	<u>8</u>			
Less written off, 10 per cent. as per Revenue Account.				6,254	17	8			
							56,293	18	0
" Mine—									
Plant, machinery, tools, etc., as per last Balance Sheet	4,347	3	0						
Less depreciation, 10 per cent.	434	14	4						
							3,912	8	8
Buildings and permanent works, as per last Balance Sheet	2,476	12	7						
Less depreciation, 10 per cent.	247	13	3						
							2,228	19	4
Live Stock, as per last Balance Sheet	316	5	2						
Less depreciation, 10 per cent.	31	12	6						
							284	12	8
Wagons, as per last Balance Sheet	112	15	7						
Less depreciation, 10 per cent.	11	5	7						
							101	10	0
Furniture, as per last Balance Sheet	285	2	6						
Less depreciation, 10 per cent.	28	10	3						
							256	12	3
							6,784	2	11
" Smelter—									
Plant, machinery, tools, etc., as per last Balance Sheet	4,285	1	11						
Less depreciation, 10 per cent.	428	10	2						
							3,856	11	9
Buildings and permanent works, as per last Balance Sheet	4,866	2	4						
Less depreciation, 10 per cent.	486	12	3						
							4,379	10	1
Live stock, as per last Balance Sheet	121	6	4						
Less depreciation, 10 per cent.	12	2	8						
							109	3	8
Furniture, as per last Balance Sheet	74	19	1						
Less depreciation, 10 per cent.	7	9	11						
							67	9	2
							8,412	14	8
" Aerial Tramway, as per last Balance Sheet				4,051	8	2			
Less depreciation, 10 per cent.				405	2	10			
							3,646	5	4
" Stocks on hand—									
Cordwood				1,199	12	6			
Fluxes				239	11	9			
Coal and Coke				591	13	4			
Mine stores				1,519	16	6			
Smelter stores				371	0	10			
Fodder				105	16	3			
							4,027	11	2

.. Reserved fund—

Being amount of Mine Development and Commission written off to

April 30, 1906	55,311	12	1	
Add dividends on the investments thereof to April 30, 1905 ...	836	1	10	
				56,147 13 11

Invested as follows—

	£	s.	d.	
2½% Consolidated Stock.....	11,516	4	7	
2¾% Irish Land Loan.....	11,350	2	1	
2¾% War Loan	10,321	0	4	
3% Transvaal Govt. Stock.....	3,063	3	7	
3% L. & N.W.Ry. Pref. Debs....	9,000	0	0	
3% Lanc. & Yorks. Ry. Debs....	8,400	0	0	
3% L. & S.W.Ry. Con. Debs.....	6,200	0	0	
	£59,850	10	7	at cost £56,027 6 2

Deposit Account No. 1.....	120	7	9	
	£56,147	13	11	

By Investments account—

2½% Midland Ry. Deb. Stock...	8,700	0	0	
3% East India Ry. New Debs....	5,000	0	0	
3½% India (1931) Stock	6,000	0	0	
2¾% Irish Land Loan	8,000	0	0	
3% Indian Govt. Inscribed Stock.	5,000	0	0	
2½% Consolidated Stock	19,654	4	0	
3½% Great Central & Midland Ry. Guaranteed Stock.....	3,000	0	0	
	£55,354	4	0	at cost

" Cash at mine	50,378	19	2	
" " at office	2,234	14	7	106,526 13 1
" " at bank	9	7	5	
" " at deposit No. 2 account	452	2	5	
	3,000	0	0	
" Sundry Debtors				5,696 4 5
" Ores on dump and at smelter at cost of labour and mining charges				3,763 4 5
" Custom ores	1,006	5	0	
	10,562	18	4	
				11,569 3 4
				£206,719 17 4

ROSSLAND-KOOTENAY MINING COMPANY, LTD.

The report of the Rossland-Kootenay Mining Company, Ltd., for the seventeen months ended January 31, 1907, presented at the meeting held in London, England, on May 28, stated that the time had not yet arrived when a satisfactory market could be obtained for the ore produced from the Kootenay mine, and consequently it had not been possible to recommence operations at this mine. The adverse conditions which affect the possibility of working the Nickel Plate property at Rossland still exist. These conditions are entirely beyond the control of the board and prevent the adoption of any other than a waiting policy. Every possible effort has been made to effect a consolidation with other interests, but this has not been found practicable. The directors still feel justified in believing that the Kootenay mine ore will yet be required in the district for fluxing purposes. Toward the end of last year the board requested Messrs. Hill and Stewart to thoroughly examine and report upon the Columbia-Kootenay mine. The report, which is of a lengthy and technical character, has now been received, and is available for the inspection of shareholders. The mine is already well developed with undoubtedly a very large tonnage of solid but low grade minerals showing at various points. Messrs. Hill and Stewart point out that, owing to its location, the mine may ultimately have a considerable value. In effect the report justifies the directors in the opinion they have already expressed—namely, that the mine can only be worked with profit if operations are conducted on a considerable scale and a ready market found for the ore containing an excess of iron over silica. Exploration work

would have to be mainly directed to the deeper workings below the No. 6 tunnel, in the hope of enrichment in depth, but this work would be costly and subsequent mining operations could only be carried on at an increased expense. At the present time the principal value of the mine lies in the direction of its being a flux producer, and until the demand for this class of ore by British Columbia smelters becomes acute it will be impossible to obtain such terms as will enable the general body of ore in the mine to be profitably worked. Persistent efforts have been made by the board to dispose of the surplus portion of the surface equipment and other property in Rossland which would not at any time be essential for the requirements of the company. The property sold has realized £1,286, of which £731 represents a profit on the price at which Block 12 stood in the books, after having been heavily written down. The directors have given consideration to a number of properties in Mexico which have been submitted to them, but up to the present none of these have been of such a nature as to justify the directors in dealing with them. The report was adopted.

DALY REDUCTION COMPANY, LIMITED.

The Daly Reduction Company held its annual meeting of shareholders at Hedley, Similkameen, on September 11, when practically all the stock was represented either in person or by proxy. The officers re-elected for the ensuing year were: President, Marcus Daly; vice-president and treasurer, John C. Lator; managing director and secretary, Frank A. Ross. J. W. Gerard was also elected a director.

COMPANY CABLES AND NOTES.

CABLES.

British Columbia.

Le Roi—August: Shipped from the mine to Northport during the past month 2,950 tons ore, containing 823 oz. gold, 1,450 oz. silver and 70,650 lb. copper. Expenditure on development work during the month \$11,000. Owing to the Northport smelter having been closed during the greater part of the month only small shipments have been made. A considerable supply of coke is now on hand, and three furnaces are running at the smelter. Have struck pay ore in 300-ft. level south, drift is now in 70 ft. Extent at present unknown, development proceeding. (Office note—As shipments of ore from the mine ceased on August 7, owing to the closing of the Northport smelter, no estimate has been made of the profits for the month. A number of men were laid off at the mine during the month and the remainder were working on development. Both mine and smelter are now in full working order again.)

Le Roi No. 2.—Josie mine report for August: Shipped 1,320 tons. The net receipts are \$13,500, being payment for 960 tons shipped, and \$1,050, for 78 tons concentrates shipped, in all \$14,550. Expected to have shipped more, but have been prevented by railway car shortage, only 40 cars were obtained. There is to be a Government inquiry with regard to coke shortage.

Le Roi No. 2.—Vancouver mine report for August: No shipments. The net receipts are \$8,070, being payment for 79 tons concentrates shipped. Total amount crushed, 2,300 tons. Zinc concentrates, 123 tons assayed silver 33.9 oz., lead 1.9 per cent., zinc 42.6 per cent. Approximate value—Concentrates made \$9,400.

Snowshoe.—During August the lessees have shipped 14,000 tons.

Tyce.—August: Smelter ran 31 days, treating 1,588 tons of Tyce ore, value, after deducting refining charges, \$14,567; 5,347 tons of custom ore; total, 6,935 tons, producing 590 tons of matte.

U. S. A.

Alaska Mexican.—August, 120-stamp mill ran 30¼ days, crushed 22,394 tons, estimated realizable value of bullion, \$30,077. Saved 425 tons sulphurets; estimated realizable value, \$25,415. Working expenses, \$22,781.

Alaska United.—August: Ready Bullion claim 120-stamp mill ran 30¼ days, crushed 21,000 tons ore; estimated realizable value of bullion, \$20,199. Saved 347 tons sulphurets; estimated realizable value, \$10,452. Working expenses, \$25,900.

DIVIDEND.

On September 3 the board of directors of the Granby Consolidated Mining, Smelting and Power Company, Limited, declared a regular quarterly dividend of two per cent. and an extra dividend of one per cent. upon the par value of the stock outstanding, payable September 30, inst., to all stockholders of record at 3 o'clock, p.m., on September 13. This will be dividend No. 8, amount \$405,000, and will bring the total amount of profits distributed among the company's stockholders up to \$2,968,630.

NOTES.

A meeting of shareholders in the company holding the Spyglass property, in Poplar camp, Trout Lake mining division, was called for September 28 at Nelson, to consider an offer of an option. The *Canadian* stated that if this offer were refused the company would itself resume operations.

The annual meeting of the Canadian-American Coal and Coke Company was held at Frank, southwest Alberta, on September 14, when the financial statement and the general manager's report were submitted, and directors and officers were elected.

Early in September it was announced that at last the La Plata Mines, Limited, owning the mine formerly known as the Molly Gibson, situated on Kokanee Creek, Nelson, mining division, has obtained all the teams it wants for the trans-

portation of its ore. Five teams are now at work along the long 10 miles of wagon road connecting the mill with the landing on Kootenay Lake and about a car daily is being sent to the Trail smelter. Formerly only two teams could be obtained.

Notice has been gazetted of official approval of the change of the corporate name of the company known as "The British American Dredging Company, Limited," to that of the "British Columbia Electric Mining Company, Limited."

The New Imperial Mines, Limited, is the name of a company organized at Revelstoke for the purpose of holding a group of mineral claims on Warren Creek, a tributary of Columbia River. The property is in the Golden mining division. The authorized capital of the company is \$150,000. The directors are E. A. Bradley, G. S. McCarter (secretary-treasurer), A. McRea, and A. M. Pinkham, all of Revelstoke, and O. D. Hoar of Golden. The British American Copper Mines and Smelting Company had an option on the whole of the New Imperial Mines company's stock, on which it has made the larger part of the payments provided for, the balance being due early next year.

The Idaho and Alamo silver-lead mines, situated near Three Forks, Slocan, are being offered on lease, the general terms being 20 per cent. of net smelter returns. The property was a large producer some years ago. It is owned by the Idaho-Alamo Consolidated Mines, Limited, represented in British Columbia by R. Roberts, whose address is now Greenwood, Boundary district. An aerial tramway connects the mines with the company's concentrating mill, the latter being alongside the Sardon-Nakusp railway.

Articles of incorporation for the Maple Leaf Mining Company have been filed with the auditor of Spokane county. The company is capitalized at \$200,000, with officers as follows: Alfred Coolidge, president; D. M. Drumheller, vice-president; Aaron Kuhn, treasurer; Charles P. Lund, secretary, and E. Dempsie, manager. Coal properties near Bellevue, southwest Alberta, have been purchased by the company from Davenport, Payne & Co., originally of Spokane, now located at Aberdeen, Washington, U.S.A. Mr. Lund said: We have \$60,000 available for the development work of 700 acres of lands, and plan to begin work immediately. We have sent Mr. Dempsie to the property with a civil engineer to lay out lines. Machinery is now *en route* to the mine. Within 60 days we will be shipping coal.

It is planned to ship some high-grade ore from the Lightning Peak Gold Mining Company's claims as soon as there shall be sufficient snow on the ground to allow of rawhiding to Fire Valley landing, Arrow Lake. The company's property is situated at the extreme head of the west branch of the north fork of Kettle River and is distant about 70 miles from Grand Forks.

The first general meeting of the Portland Canal Mining and Development Company was held at Duncans on August 17. This company is developing a group of claims at Portland Canal. T. A. Wood, the managing director, in the course of a few remarks congratulated the shareholders on the very favourable showings in values and ore, and stated that work done on these claims up to date was very satisfactory. Seven men are now employed in charge of W. Beaton and work will be continued as long as the season shall permit. A contract has been let for development on the Gippy, one of the company's mineral claims. R. Angus of Victoria was elected a director of the company.

Frederick Charles Elliott, barrister, of Trout Lake, B.C., has been appointed the new attorney of the Reward Gold and Silver Mining Company, Limited, the head and registered office of which has been removed from Ferguson to Trout Lake. This company holds a large group of mineral claims in the vicinity of Ferguson, Lardeau district. Its mining operations to date have been chiefly the driving of a tunnel, now in about 1,200 ft., with the object of intersecting at considerable depth several lodes that outcrop on the surface of the mountain into which the tunnel is being driven at the lowest level practicable for doing this work.

CERTIFICATES OF INCORPORATION.

- Payne Mines, Limited*, with a capital of \$500,000, divided into 500,000 shares of \$1 each.
- Broughton Strait Coal Company, Limited*, with a capital of \$10,000, divided into 100 shares of \$100 each.
- Sechelt Brick and Tile Company, Limited*, with a capital of \$150,000, divided into 1,500 shares of \$100 each.
- Snoozy Top Mining Company, Limited*, with a capital of \$20,000, divided into \$20,000 shares of \$1 each.
- Moresby Island Exploration Company, Limited*, with a capital of \$10,000, divided into 1,000 shares of \$1 each.
- True Fissure Mining and Milling Company, Limited*, with a capital of \$2,500,000, divided into 2,500,000 shares of \$1 each.
- Gold Creek Mining Company, Limited*, with a capital of \$50,000, divided into 50,000 shares of \$1 each.

REGISTRATION OF EXTRA-PROVINCIAL COMPANIES.

- B C Standard Mining and Milling Company, Limited*.—Head office at Spokane, Washington, U.S.A. Capital, \$250,000, divided into 1,000,000 shares of 25 cents each. Head office in British Columbia at Rossland. Attorney, Francis C. Armstrong, real estate broker, Rossland.
- Morning Bell Copper Mining and Smelting Company*.—Head office at Spokane, Washington, U.S.A. Capital, \$250,000, divided into 1,000,000 shares of 25 cents each. Head office in British Columbia at Creston. Attorney, O. J. Wiggin, fruit and produce rancher, Creston.
- Elsie Homs Copper Mining and Development Company, Limited*.—Head office at Bonner's Ferry, Idaho, U.S.A. Capital, \$500,000, divided into 500,000 shares of \$1 each. Head office in British Columbia at Windell. Attorney, O. J. Wiggin, farmer, Windell.
- Slough Creek, Limited*.—Head office in England. Capital, £200,000, divided into 1,000,000 of four shillings each. Head office in British Columbia at Van Winkle, Cariboo. Attorney, John Hopp, mine owner, Van Winkle.
- Snowdrift Gold Mining Company, Limited*.—Head office at Spokane, Washington, U.S.A. Capital, \$12,500, divided into 1,250,000 shares of one cent each. Head office in British Columbia at Koch's Siding. Attorney, Noah Eastman, lumberman, Koch's Siding.
- Trans-Continental Exploration Syndicate, Limited*.—Head office at Ottawa, Ontario. Capital, \$100,000, divided into 1,000 shares of \$100 each. Head office in British Columbia, at Vancouver. Attorney, George Henry Cowan, barrister, Vancouver.

MACHINERY AND CONSTRUCTION NOTES.

The Canadian Rand Company, Limited, have received orders for three 6x10 compressed air locomotives for early delivery at Crow's Nest Pass coal mines—one at Michel and two at Coleman. These locomotives are about 30 h.p. each.

Peacock Brothers, engineers, of Montreal, Quebec, have sold to the Mond Nickel Company, Sudbury, Ontario, two Hadfield's 20x10-in. patent stone breakers, of similar make to those the same agents recently sold for use at the Oro Denoro mine, Boundary district of British Columbia, and the Le Roi No 2 company's mines at Rossland. Peacock Brothers are sole Canadian representatives of Hadfield's Steel Foundry Company, Limited, of Sheffield, England, makers of rock breakers and other special steel manufactures.

A new brick boiler house at No 8 fan, Michel colliery, is about completed.

The installation of a large ore crusher at the Granby Company's Curlew mine in Phoenix camp is in hand.

The Kootenay Engineering Works, Nelson, has been awarded the contract for the manufacture and construction of an aerial tramway, double continuous rope and 5,600 ft. in length, from the Hewitt mine to the Wakefield concen-

trating mill, Silverton camp, Slocan. The capacity of the tramway is stated at about 240 tons a day.

An aerial tramway is being constructed from the Eureka-Richmond mine to the C.P.R. station at Sandou, Slocan, a distance of about 5,000 ft.

The International Coal and Coke Company is building a number of miners' cottages at Coleman, southwest Alberta. It is also erecting a big wash house at its coal mine there, covering the larry tracks from mine to tippie, and doing other construction work.

A railway construction camp has been established on the extension of the Crow's Nest Southern Railway, near Michel, at the rock cut a little below the coke ovens. Grading is in progress at Elk River.

At Hosmer, the Canadian Pacific Railway Company's town along the Crow's Nest Railway, construction work is being pushed. Some 200 men are at work in the railway yards, and W. P. Tierney, who has the contract for construction of the branch line from Hosmer station to the Pacific Coal Company's coal mines and coke ovens, has been moving in his grading plant and equipment from the Boundary country where he has finished his contract on the Kettle Valley line.

Local newspapers state that the Dominion Copper Company has decided to replace the two hand-fed blast furnaces at its smelter at Boundary Falls, Boundary district, with one large furnace to be equipped for mechanical feeding. The company already has one large furnace of this description installed, when the second shall have been completed the treatment capacity of the smelter will be about 1,400 tons of ore per diem. The intended further enlargement of the works to a daily capacity of 3,000 tons has been reported in the press.

TRADE NOTES AND CATALOGUES.

Mussens Limited, of Montreal, have issued Bulletin No. 19, which deals with rock drill steel. This firm carries stocks of steel at Montreal and at Nelson, B.C., manufactured by Walter Spencer & Co., Ltd., Sheffield, England, which steel is particularly suitable for mining and contractors' work where expert blacksmiths are not obtainable. Another circular gives tables of dimensions, etc., of railway, warehouse and other styles of hand trucks. On another page of this number of the *MINING RECORD* the same firm advertises Norton Jacks, of which 50 styles are made, from 8 to 70 tons capacity. An illustrated catalogue of these jacks is obtainable on application.

From the Jeffrey Manufacturing Company, of Columbus, Ohio, U.S.A., has been received Catalogue 69A. Jeffrey Screens, in which is illustrated every type of screen this company manufactures that will be of interest to its customers and to prospective buyers generally. The illustrations are clear and well printed. Those requiring fuller data will be supplied if they write for it. A few pages at the end of this catalogue illustrate Jeffrey Standard and Special Chains, Conveying and Elevating Machinery, Crushing Machines, Grab Buckets, Coal Cutters, Electric Locomotives, etc.

PATENT CEMENT SPREADER.

A Canadian patent has been received through the agency of Rowland Brittain, patent attorney of Vancouver, granted to Isaac Hewitt, of Victoria, on a machine for spreading or surfacing cement in making cement floor or sidewalks. The device consists simply of a framework mounted on flanged wheels, to run on the curb or dividing border of the sidewalk or section of floor. Suspended from the frame is a weighted beam which takes its bearing on the borders and is dragged over them as the vehicle is moved forward, a reciprocating lateral movement, being imparted to the beam from one of the axles of the vehicle. The spreader members forwardly project from the front face of the beam, which distributes and surfaces the cement, which is deposited in front of it.

BOOKS, ETC., RECEIVED.

- California State Mining Bureau.*—Bulletin No. 46, "General Index to Publications of the California State Mining Bureau," compiled by Charles G. Yale and issued by Lewis E. Aubury, state mineralogist. An appendix gives interesting information concerning the California State Mining Bureau, mineral statistics, etc. Pages, 54; illustrated; bound in cloth. Price 30 cents, postage 6 cents.
- Columbia University, New York City.*—The "School of Mines Quarterly." Vol. XXVIII, No. 4.
- Illinois Bureau of Labour.*—"Thirteenth Biennial Report of the Bureau of Labour Statistics of the State of Illinois." Prepared by David Ross, secretary. Part I is a presentation of the statistics of manufactures in Illinois; Part II is devoted to a consideration of the working time, earnings and general home conditions of coal miners and others employed in and around the mines of Illinois. Pages, 665.
- Michigan College of Mines.*—"Year Book of the Michigan College of Mines, 1906-1907" This book contains announcement of the courses for 1907-8; also a general statement concerning the college, its advantages, management, faculty, regulations for admission, departments of instruction, and much other information relative to the institution, which was established in 1885. Prospective students will find it interesting and instructive.
- United States Geological Survey.*—
- Bulletin No. 287, "The Juneau Gold Belt, Alaska," by Arthur C. Spencer; and "A Reconnaissance of Admiralty Island, Alaska," by Charles Will Wright. Pages, 154; illustrated with maps, diagrams and half-tones.
- Bulletin No. 314, "Report on Progress of Investigations of Mineral Resources of Alaska in 1906." By Alfred Brooks and others. Pages, 226; illustrated.
- Bulletin No. 315, "Contributions to Economic Geology, 1906." Part I.—Metals and Non-Metals, except Fuels. S. F. Emmons and E. C. Eckel, geologists in charge. Pages, 489; with several sketch maps.

BOOK REVIEWED.

- Dredging for Gold in California*, by D'Arcy Weatherbe, member of the Canadian Society of Civil Engineers. 214 pages, 6x9 in., illustrated. Published by the *Mining and Scientific Press*, San Francisco, California. Cloth, \$4.
- This is an excellent treatise prepared by a practical man. Mr. Weatherbe is a civil engineer by training; he devoted the greater part of the year to a careful study of dredging operations in California and secured a large mass of valuable data and photographs. As he is not connected with any mining company or manufacturer of machinery, his expressions of opinion may be taken as being without prejudice. The result of his work is a trustworthy and unbiased description of dredging, and this by a thoroughly capable writer. The book is full of useful hints and is freely illustrated with reproductions of drawings and photographs, of which there are more than a hundred. Entirely new material comprises quite two-thirds of the book. Included in the appendix are contributions by several well-known authorities, which, partaking of the nature of an exchange of views, widen the field reviewed and add to the value of the book.
- The scope of the work may be gathered from the following table of contents: I. Introductory. II. Prospecting Dredging Ground. III. Dredging Machines. IV. Operation. V. The Metallurgy of Dredging. VI. Costs. VII. The Horticultural Question. VIII. General. IX. Appendix. This last contains excerpts from the *Mining and Scientific Press*, including editorials on Gold Dredging and Sectional Dredging Machinery, respectively, and discussion on Gold Dredging by Messrs. J. H. Curle, G. L. Holmes, C. W. Purington and D'Arcy Weatherbe, all well qualified to deal with this subject. Some data relative to cost of dredging is also quoted.

Altogether Mr. Weatherbe's book may be regarded as the first on this subject written at first hand by a thoroughly competent man, consequently there need be no hesitation in recommending it highly to those interested in this important branch of gold-mining practice.

COAL MINING NOTES.

J. F. Ritchie, formerly coal inspector for the Canadian Pacific Railway Company in Alberta, has been transferred to Hosmer, Crow's Nest Pass, B.C., where he will be time-keeper and supply man at the coal mine the Pacific Coal Company is opening there.

On September 12 the *Frank Paper* published the following paragraph: "The negotiations pending last week between the Hilerest Coal Company and the United Mine Workers of America, looking to an agreement between the company and the miners, have come to a definite end and it has been determined to ask for a government commission under the Industrial Disputes Investigation Act. F. H. Sherman has been nominated as the representative of the men on the commission." The Hilerest mine is as yet a comparatively small mine situated near Frank, southwest Alberta.

A correspondent of the *Fernie Free Press* states that the Vancouver Coal and Oil Company has some prospectors investigating a find of high-grade coal near Morrissey; also that "miners are coming and going every day in connection with the work at Carbonado and altogether the outlook for Morrissey is brighter than for a long time past." The Crow's Nest Pass Coal Company is again doing some work at its Carbonado colliery, which is on Morrissey Creek. The mines here and 240 coke ovens had been shut down since the early part of 1905.

Employees of the Crow's Nest Pass Coal Company have just been paid their monthly wages, states a September press despatch. At Fernie and at Coal Creek the assembled workmen were paid approximately \$119,000; at Michel the men were paid \$67,000. Because only development work is now being done at the mines at Morrissey, the payroll there has not assumed large proportions, only about \$3,000 having been paid the employees in those mines. Altogether the foregoing payments paid make a total of \$189,000 paid by the Crow's Nest Company for labour during the month of August.

Good progress is being made with the development of the Canadian Pacific Railway Company's coal mine at Hosmer, Crow's Nest Pass.

Mine buildings are being erected near Bellevue, southwest Alberta, for the Maple Leaf Coal Company, which is installing a small power plant to facilitate the driving of a rock tunnel planned to cross-cut several seams of coal.

The output of coal from the Crow's Nest Pass Coal Company's collieries for the week ended September 20 was 21,905 tons, or a daily average of 3,651 tons. For the corresponding week of 1906 the daily average was 3,264 tons. For the week ended September 27 the total was 19,439 tons, an average of 3,240 tons per day.

On September 24 a new record for one day's output at the Western Fuel Company's colliery, Nanaimo district, was made. No. 1 mine produced 1,260 tons and Northfield 953 tons, a total of 2,213 tons.

The *Fernie Free Press* states that the six coke ovens lately built at the Pacific Coal Company's colliery, Hosmer, "are turning out a fine line of coke and giving every satisfaction to the management of the mines."

The Nicola Coal and Coke Company, which now has railway transportation facilities, the spur to its coal mine having been completed, has offered to supply coal to Vernon. The *Vernon News* says: "The rate previously quoted was \$7.50 per ton f.o.b. Vernon."

The Canadian-American Coal and Coke Company, Frank, southwest Alberta, mined and sold 143,605 tons of coal during its last fiscal year. As the mine was worked 234 days the average production was 613 tons of coal per day.

MINING MEN AND AFFAIRS.

F. T. Hamshaw of Atlin recently made a trip to Dawson, Yukon.

J. M. Harris, manager of the Reco Mining and Milling Company, with mine near Sandon, Slocan, was in Nelson on September 17 on his way to Spokane.

G. O. Buchanan has returned to his home at Kaslo after having been on Vancouver Island for a month or two looking after his business interests there.

J. Cuthbert Welch, superintendent of the Alaska Copper Company's smelter at Coppermount, southeast Alaska, was in Vancouver lately and afterwards returned North.

Prof. J. C. Gwillim of the Kingston School of Mines, has returned from Vancouver Island to Ontario. *En route* he visited Nelson and other Kootenay mining centres.

W. A. Calder is working under lease the Lightning Peak Gold Mining Company's property situated in the extreme northern part of Grand Forks mining division.

Prof. T. L. Walker, of Toronto University, was in the Kootenay district early in September collecting specimens for the mineral section of the university museum.

A. Fournier is manager of the Silver Star Mining Company, owning the Cork mine and concentrating mill on the south fork of Kaslo Creek, Ainsworth mining division.

Andrew G. Larson, of Rossland, superintendent of the Le Roi mine, is on a month's holiday trip through Colorado, Utah, and other mining states.

D. B. Dowling has not yet resigned from the Geological Survey of Canada, as previously stated he had, but is on leave of absence.

J. J. Warren, of Toronto, Ontario, managing director of the White Bear Mining Company, was at the company's mine at Rossland late in September.

H. P. Dickinson, of Rossland, representative in south-eastern British Columbia of the Giant Powder Company, was on the coast early in September.

J. B. Hobson, manager in British Columbia for the Cariboo Gold Mining Company, has returned to Bullion, Quesnel Forks, after a short visit to his home at Victoria.

Queen's University, Kingston, Ontario, has decided to confer the degree of LL.D. at its autumn convocation on A. P. Low, deputy minister of mines, Ottawa.

Frank Loring, formerly of Rossland and Spokane, has resigned as consulting engineer to the owners of the Trethewey mine in Cobalt district, Northern Ontario.

Chas. M. Campbell, chief of the engineering staff of the Granby Consolidated Mining, Smelting and Power Company, has returned to Phoenix from a trip to Denver, Colorado.

R. H. Stewart, mine manager for the Consolidated Mining and Smelting Company of Canada, has returned to Rossland from a visit to Eastern Canada.

W. F. DuBois, superintendent of the Arlington mine on Springer Creek, Slocan City mining division, is doing some diamond drilling on that property.

Neil McL. Curran, manager of the North Star mine in East Kootenay, lately made a trip over the Crow's Nest railway to Medicine Hat and return.

N. O. Lawton, general manager for the Brown Alaska Company, who has been in Seattle on business, has returned to southeast Alaska.

A. A. Wakefield has retired from the management of the Brown Alaska Company's Outsiders mine near Maple Bay, Portland Canal.

R. F. Tolmie, deputy minister of mines, visited the Boundary and Kootenay districts recently to obtain information for a report to the Government on the coke shortage situation.

Richard Russell, manager of the Stenwinder Gold and Coal Mining Company, of Fairview, Osoyoos mining division, has

returned to the Okanagan from a trip East in the interests of his company.

W. G. Trethewey of Cobalt, northern Ontario, is reported to be finding capital to work some copper claims on one of the Queen Charlotte Islands group in northern British Columbia.

D. D. Cairnes of the Geological Survey branch of the Dominion department of mines, who spent this year's field-work season in Yukon Territory, came south at the end of September on his way back to Ottawa.

Horace V. Winchell, chief geologist for the Great Northern Railway Company, spent a few days in Nicola Valley during the first half of September and proceeded thence through the Similkameen on his return to the United States.

J. M. Turnbull, of Trail, mining engineer for the Consolidated Mining and Smelting Company of Canada was married to Miss Jarvis on September 26 at Owen Sound, Ontario.

H. Hayman Claudet, of Claudet & Wynne, mining engineers and assayers, was married at Rossland on September 4 to Miss Helen Alice Margaret Falding, youngest daughter of W. H. Faulding, accountant to the Le Roi No. 2, Limited.

H. Mortimer Lamb, secretary of the Canadian Mining Institute, has returned to Montreal from British Columbia. It is stated that as a result of his visit to the Province the number of western members will be nearly doubled.

O. B. Rombauer has suspended operations at the Maggie mine in the Ashcroft district and returned to Butte, Montana, U.S.A. Several years ago Mr. Rombauer was chief chemist and assayer at the smelter at Crofton, Vancouver Island.

Jules Labarthe, manager of the Consolidated Mining and Smelting Company of Canada's smelting works and refinery at Trail, left that town in September for Denver, Colorado, U.S.A., on a month's vacation.

W. C. Thomas, of Boundary Falls, general manager of the Dominion Copper Company, was in the Crow's Nest Pass district early in September in connection with coke supply matters.

Chas. Camsell has closed his field-work for the season in connection with his examination of the Similkameen country for the Geological Survey of Canada, and will shortly leave British Columbia for Ottawa.

F. G. Grosvenor, for some time past head chemist and assayer for the Hall Mining and Smelting Company, Nelson, has severed his connection with that company, and intends to spend the winter in England.

Gilbert Mahon, now of London, England, is on a visit to British Columbia. Ten years ago he was engaged in mining engineering work in Rossland camp, and later was manager of the Jewel mine in the Boundary district.

Norman Carmichael of the Arizona Copper Company, was in San Francisco from Morenci, Arizona, U.S.A., early in September. Previous to going to Arizona Mr. Carmichael was in charge of mines in the Nelson district, British Columbia.

A. B. W. Hodges, of Grand Forks, Boundary district, resident manager for the Granby Consolidated Mining, Smelting and Power Company, was in Victoria about the second week in September, when he discussed with members of the Provincial Government the coke shortage question.

Rienzi W. Macfarlane, who some years ago left the Boundary district for Malay and later was manager in Mexico for the Cherokee Goldfields, Limited, has resigned that position. He is now in England, whence he went from Mexico on a vacation.

Arthur Hickling, one of the directors of the Vermilion Forks Mining and Development Company, Limited, owning property at and about Princeton, Similkameen, is in the Province, having recently arrived from England on one of his periodical visits.

Dr. Henry M. Ami, of the Geological Survey of Canada, and Dr. Frank D. Adams, professor of geology at McGill University, Montreal, Quebec, are Canadian delegates to the centenary meeting of the Geological Society in London, England.

Dr. H. S. Poole, of Halifax, Nova Scotia, who some time since spent several months on Vancouver Island, obtaining information concerning its coal measures, will shortly proceed to England for a stay in that country of six months or longer.

Jay P. Graves, of Spokane, Washington, U.S.A., who recently joined the directorate of the Crow's Nest Pass Coal Company as representative of the Granby Company's interests, visited the former company's collieries in the Crow's Nest Pass early in September.

Col. Joshua Wright of Ottawa, Ontario, died in that city on September 6. For several years he was actively connected with the 43rd Mining and Milling Company which was engaged in hydraulic gold mining in the Oninca section of Cassiar district, in this Province.

R. W. Brock and W. H. Boyd, of the Geological Survey of Canada, after having spent the summer in geological work in the Lardeau district, recently proceeded to Rossland to there finish the structural survey of that camp in which they were engaged during the field-work seasons of the years 1905 and 1906.

W. J. Elmendorf has returned to Whitehorse copper camp in southern Yukon, from Spokane. He will shortly proceed to the Bear River section of the Portland Canal country to examine and report upon the mining property in that locality owned by the Portland Canal Mining and Development Company of Duncans, Vancouver Island.

Fukunosoke Yamada, mining engineer Furukana Mining Company, of Tokio, Japan, is in British Columbia, the Nelson *Canadian* states, to study methods of mining and smelting. Mr. Yamada is also engineer for the Ikeda mines on Moresby Island of the Queen Charlotte group, in British Columbia.

T. H. Trethewey, formerly manager of the La Planta mine on Kokanee Creek, Nelson mining division, has returned to the Kootenay from Port Arthur, Ontario, where is situated the head office of the La Plata Mines Company, Limited. He is now interested in an Albertan coal mining enterprise.

Alexander Hill, of Hill & Stewart, consulting engineers to the Le Roi No. 2, Limited, has returned to England after having paid a visit of inspection to the company's mines at Rossland and to the Vancouver Group silver-lead mine, in the Silverton section of the Slovan, which the company is working under option of purchase.

Ernest Underwood, chief engineer at the deep-drift mine at Slough Creek, Cariboo, while disconnecting some steam pipes in the shaft slipped from the loop in the rope suspending him and falling to the bottom of the shaft, more than 200 ft. down, was instantly killed. He was an Englishman, 32 years of age and unmarried.

H. H. Claudet of Rossland, representative of the Elmore vacuum oil process, lately proceeded to the Giant mine, Golden district, where a plant to treat ore by this process is to be installed. Excellent concentration results are reported from other countries where vacuum oil plants have been in operation for some time.

Herbert Carmichael, provincial assayer, has returned to Victoria after having been engaged for several months in gathering information relative to the Alberni district. It is expected the Provincial Bureau of Mines will shortly publish a bulletin giving the results of the work done in the Alberni mining division by Mr. Carmichael and assistants; also a map to accompany this report.

G. G. S. Lindsej, managing director of the Crow's Nest Pass Coal Mining Company, paid a brief visit to Victoria and Vancouver during the latter part of September. He returned to Fernie via Nelson, where, together with the managers of the Le Roi, British Columbia Copper, and Gran-

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by companies, he met the Premier (Hon. Richard McBride) in connection with the coke shortage question.

George Williams, who was construction engineer at the Crofton and Ladysmith smelters, respectively, at the time of their erection, and has since had charge of extensive construction work at the British Columbia company's smelting works at Greenwood, Boundary district, has been engaged by the manager of the Tye Copper Company's smelter to supervise some additions and improvements the company is undertaking at Ladysmith.

Anthony J. McMillan, general manager of the Le Roi Mining Company of Rossland, has been in Victoria representing to the Provincial Government the unwisdom of yielding to some clamor for action to prevent coke being shipped from the Crow's Nest Pass collieries to United States smelters, as such a course would result in cutting off the coke supply of the Le Roi Company's smelter, which, though situated close to the International Boundary line, is in the State of Washington.

Dr. W. A. Parks, associate professor of geology at the University of Toronto, Ontario, has been spending a few days in East Kootenay, collecting mineral specimens. He is reported in the local press to have found at the St. Eugene mine and other properties situated in the same district some beautiful specimens of copper glance and pyromorphite, or phosphate of lead. These specimens, he said, were as fine as any he had ever seen, and so far as the latter is concerned, it is the only ore of its kind he knew of in Canada.

William Yolen Williams lately again visited the Similkameen country, in the northern part of which prospecting work is being done, according to his directions, on the Independence group of mineral claims which is under bond to his principals, stated to be the Granby Consolidated Mining, Smelting and Power Company, Limited. Mr. Williams after-

wards went to Rossland in his capacity of consulting engineer to the California-Giant Mining Company, which is operating in that camp.

NOTICES IN THE BRITISH COLUMBIA GAZETTE.

W. F. Armstrong, of Heriot Bay, Valdez Island, to be a deputy mining recorder for the Nanaimo mining division with sub-recording office at Heriot Bay.

Robert Gordon, of Revelstoke, to be gold commissioner for the Revelstoke, Lardeau and Trout Lake mining divisions, in the place of Frederick Fraser, resigned.

Frederick William Valteau, of Hazelton, Skeena River, to be gold commissioner for the Omineca mining division.

Donald MacDonell, of Fort Steele, East Kootenay, to be deputy mining recorder for the Fort Steele mining division, with sub-recording office at Marysville, in the place of H. Des Barres, resigned.

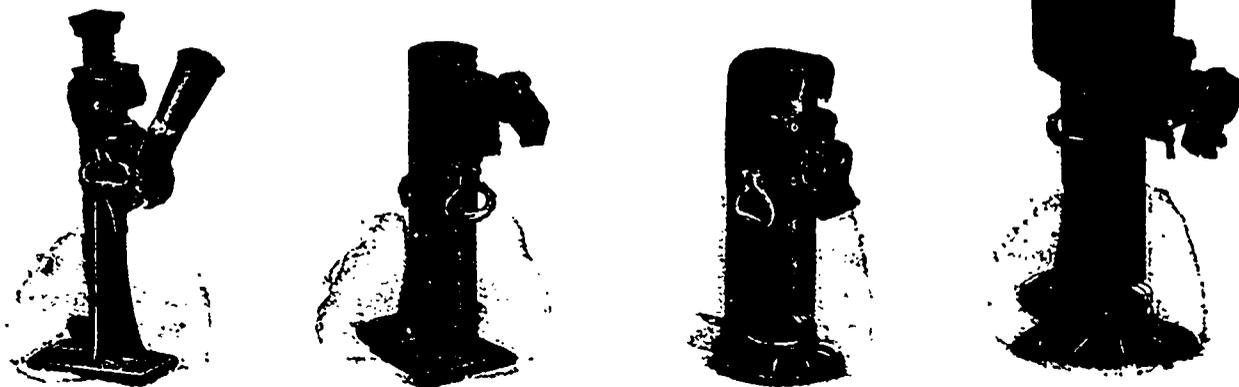
Francis Lochbie Leighton, of Vancouver, accountant, has been appointed the new attorney of the Vancouver Engineering Works, Limited, in the place of George A. Walkem.

Herbert Young, of Port Simpson, to be a deputy mining recorder for the Skeena mining division, in the place of Herbert Cecil Flewin, resigned.

John Cartmel, of Atlin, to be acting mining recorder for the Atlin Lake mining division.

John Mathers, of Skidegate, Queen Charlotte Islands, to be a deputy mining recorder for the Skeena mining division, with sub-recording office at Skidegate, in the place of W. H. Dempster, resigned.

There has been a marked increase in the production of natural gas in Canada during the last five years. Official records show the value in 1902 to have been \$195,992; the gross returns from sale of gas in 1906 were \$528,868.



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(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.

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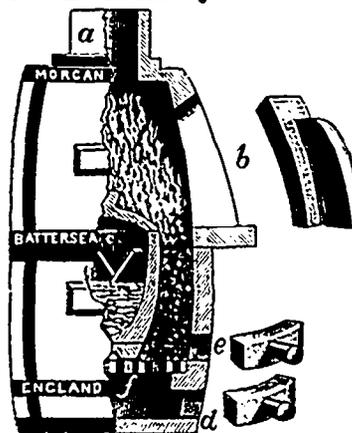
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