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THE MONTH.

IN another column will be found the report of the directors of the Le Roi mine and of the proceedings which took place at the subsequent meeting. Since then the Le Roi mine has been involved to some extent in the eclipse of Mr. Whitaker Wright, and it is difficult to keep the consideration of the mine, purely and simply as a mine, separate from the vicissitudes which have overtaken the company through outside causes. The easiest way in which to make this distinction clear is to point out at the outset that the present satisfactory condition of the mine is due entirely to the fostering

THE LE ROI REPORT.

care of a Canadian banking institution known as the Bank of Montreal, and all its troubles due to the incomprehensible business methods of the people in London who controlled the shares. The Bank of Montreal seems to have recognized a duty to Canada's greatest productive mine, and unquestionably, had it not been for the Bank of Montreal, it would have shared the disrepute into which the controlling group in London has fallen. The money to acquire the interest of the minority stock holders and thus extricate the company from the legal mess in which it found itself was provided by the Bank of Montreal. The money for the purchase of the extra quarter interest in the smelter was found by the Bank of Montreal. The money for the enlarged development of the mine and for the enlargement of the smelter was found by the Bank of Montreal.

Finally the output of the mine from the moment it left the mine was taken over by the Bank of Montreal, and sold for the benefit of the company. This course of action has been profitable to the Bank of Montreal, advantageous to the mining industry, and highly creditable to Canadian financial enterprises and foresight, but it reflects no honour on the men who extracted \$5,000,000 from the pockets of English investors upon representations which they would have been utterly and absolutely unable to carry out without the assistance of a colonial financial institution. What would have happened had there been no Canadian bank sufficiently powerful to come to the rescue? It is hard to say. It is fortunate that there was one. When we consider the position of the mine, as revealed in the directors' report, there are many grounds for congratulation. The time covered by the report is from incorporation up to 30th June, 1900. There is a balance at the credit of profit and loss account of £93,369 9s. 2d., out of which £50,000 were distributed in a 5 per cent. dividend. The profits of the mine have been devoted to recoup the Bank of Montreal for its advances on capital account and if the statement made at the meeting is reliable the account is now about even. That is to say that a five compartment shaft has been sunk 900 feet and equipped with the necessary hoisting machinery, a quarter interest in the smelter has been purchased at a cost of \$300,000, the smelter itself has been doubled in capacity and the cost of these enormously expensive improvements has been concurrently redeemed out of ore sold and \$250,000 distributed as profits in a period of roughly two years. Very few mines in the world could possibly have endured such a strain, without at least being completely gutted of their ore reserves. The Le Roi, on the contrary, has more abundant ore reserves than ever; in fact these colossal expenditures were incurred apparently to permit the handling of the great overplus of ore continually being developed. It is sincerely to be hoped that no British Columbia mine will ever again be expected to pay dividends on \$5,000,000 and at the same time provide its own development capital. It is not a fair demand to make on the resources of any country. Very few mines could possibly have responded to it. And many a good mine has been hopelessly wrecked by just such methods of exploitation.

The figures given as to cost of mining and smelting are exceedingly interesting. Mr. Macdonald states the present cost of breaking and hoisting ore to be \$2.50 a ton, and estimates the cost when the new machinery is in use at \$2.00 a ton. He estimates the whole mining cost, including breaking, hoisting, development, depreciation, insurance and management at \$3.25 a ton. The smelting cost is \$4.00 per ton of crude ore with freight \$4.50. The average value of the ore is \$13. A question arises here. Does the

freight and treatment charge of \$4.50 include the refining charges, or is the valuation of \$13 a ton of ore the value of the matte at the smelter? Presumably from the way in which the information is given \$7.75 is either the gross cost or \$13 is the net value. In either case the profit on Le Roi ore is \$5 per ton of ore mined. There is therefore evidently no difficulty whatever in keeping the record of the earning capacity of the Le Roi mine. Every 10,000 tons earns a dividend of 1 per cent. It may be a little more but that is the safe method of calculating. At the present rate of shipment the Le Roi is earning about 20 per cent. per annum. When it increases its shipments to 1,000 tons a day it will be earning at the rate of 30 per cent. allowing 300 days to the year. It must be confessed that both the present condition and future outlook of the mine are exceedingly satisfactory. It seems assured of a long and prosperous career. The effect of this report should be to reassure everyone as to the solidity and prosperity of the Trail Creek mines. It points with no uncertain finger to surprising developments in the wealth and productivity of the district. The incoming year should be one of memorable progress in that locality.

To estimate all the causes which led to the downfall of the London & Globe Financial Corporation with which British Columbia was unfortunately to some extent connected, would be to write an essay on the corruption of English finance as applied to foreign enterprise, a task as far beyond our powers as outside the domain of the MINING RECORD. English foreign enterprise instead of reaching forth after the resources of other countries and rendering them productive, thus conferring a benefit where it reaps a profit, seems, in this era of joint stock companies, to have been turned inwards as it were, and to be designed to prey upon and dissipate the vast stores of capital accumulated in Great Britain itself. The continual inflation of shares without reference to their profit

LONDON
AND
GLOBE.

nature is merely a making believe to be rich and the wealth thus taken from the industrious part of the community is wasted in luxury and in all manner of unproductive expenditure. Not only so but the hope of sudden fortune at the expense of the less lucky, saps the very foundation of industry, and induces even in the legitimate branches of trade a morbid and unhealthy excitement. This gambling spirit to which all nations have at times and for longer or shorter periods given way, seems to have become the settled habit of the community and to be spreading contagion through all ranks and classes. When the London & Globe Finance Corporation is analyzed we fail to see anything in it except a vast pool for the purpose of raising and lowering the price of shares independently of their intrinsic value. No matter with what skill operations of this kind are carried on the end is ultimately certain. It is possible to raise shares above their intrinsic value by buying them in, but to sell them again at the higher price is entirely a different matter and is an operation which cannot be very frequently repeated. A large actual and realized profit may be made by buying in a free market more than all the shares out in a particular company. The unfortunates who have sold what they cannot deliver are at the mercy of the price manipulator. But if as fre-

quently happens, the shares actually bought in are of much less value than the price paid for them, the profit is much more apparent than real. If a man buys for \$10 what will only give a return on \$2 he has lost \$8 and the fact that occasionally he may sell it for \$12 does not alter in the slightest degree the result of the first operation. No amount of legerdemain can change the elementary simplicity of natural laws. The disassociation of value from price may be longer or shorter but that they can be permanently separated is impossible. To break the relation between price and value appears to be the continually renewed effort of the Grants, Hooleys, Cattons, Bottomleys and Wrights. They succeed for a while but eventually they fail because they are attempting an impossibility. They are seconded by the mordant greed of gain and the desire to get rich fast which is one of the worst passions and most deeply rooted in human nature. They spread the corruption on which they thrive. One house of cards having fallen to the ground the greedy public seems only too willing to assist in laying the foundations of another. That Mr. Whitaker Wright has been as much the victim as the author of corrupt finance we are quite ready to believe. Certainly the mining methods adopted by the companies controlled by him have been beyond all praise for both science and economy. The MINING RECORD has always drawn a sharp distinction between his mining and his financial methods. The first show, daring, grasp, invention, prudence and despatch; the second, a complete disregard of ordinary prudential calculation. He gives the impression more of a daring actor in a saturnalia of corruption than of a mover and instigator of financial debauchery. "Men have lived in times when great abuses flourished and have sometimes even been the living representatives of the abuses" whose private character and ability have been beyond question. It becomes a difficult matter to apportion their personal responsibility and one from which the severest critic may shrink. Under this veil of charity the features of Mr. Whitaker Wright may well be hid, and with a greater certainty of approval those of the venerable Marquis of Dufferin for whom his years, his sorrow and his public service plead alike.

The consequences of this financial corruption are much more serious in reference to Great Britain than they are in reference to British Columbia. British capital is indeed invited into British Columbia. But if the machinery for its introduction has broken down through causes for which the province is in no sense responsible (and here we refer not to the failure of an individual company for raising capital, but to the vice which infects the whole system of raising and applying capital abroad) it does not mean that British Columbia will starve for want of capital, but that Great Britain serves notice of abdication from the financial empire of the world. Continental investors, English investors themselves as well as Canadian and American investors, will soon learn to invest money in concerns controlled and managed on this side of the water if they find that in such concerns overcapitalization is less frequent and abuses of speculation less numerous. Capital is impersonal and cosmopolitan. It is attracted by the hope of a high return and by security against loss. It will flow as readily from Europe to America and from Eastern Canada and the United States through the medium of the individual investor as through the medium of the foreign company if a better and more economi-

cal method of application can be devised at home. For the development of our home resources we are perforce compelled to turn away our eyes from English methods of raising and applying capital. Our ambition ought to be to encourage a free flow of capital from all quarters by the prudence, economy, capacity and enterprise shown in the conduct of distinctively Canadian joint stock enterprises. Thrown upon our own resources a spirit of energy and independence may very well be developed; and circumstances which appear to restrict the rendering of our resources productive may really lead to a great consolidation of wealth and enterprise within the boundaries of our country.

The December issue of the *Canadian Mining Review* contains some comments on the Centre Star mine based on the information contained in the Centre Star report which are neither warranted by the information contained in the report nor particularly creditable to the acumen and sense of fairness possessed by the *Canadian Mining Review*. For some reason or another the *Canadian Mining Review* is not well affected towards British Columbia. Against the Rossland mines it has always manifested animus, and the names Gooderham-Blackstock appear to have the same effect upon it as the proverbial red rag upon a bull. For a good hater we have the highest respect, but a critic who permits enmity to obscure his judgment is not respectable. It is not our purpose, however, to abuse the *Canadian Mining Review*, but to show from its own statements and from the facts how invalid, nay how ridiculous, its conclusions are. The following paragraph arrays the figures on the financial condition of the mine:

"From the financial statement printed we learn that \$3,300,000 of the total capital of \$3,500,000 is issued and therefore liable, or rather available, to receive dividends. The profit and loss account for the year is put at \$182,122, and there are among the liabilities a personal one to George Gooderham of \$30,000, and a corporate one to the Bank of Toronto of \$227,000. With these liabilities existing it would be permissible to ask the directors to explain the payment of a dividend amounting to \$35,000; especially since the loss is some \$68,000 greater than in 1899. The loss on operating account was \$37,223.69 decreased by interest and fees to \$33,574.51."

Leaving out of account the question of how a capital expenditure in development during a period of productive activity can justifiably be called a "loss on operating account," the strictures passed on the first dividend paid by the Centre Star pass our comprehension. The dividend was paid out of actual profits earned during the first few months of the mine's operations. It was paid at a time when the directors of the mine had no anticipation of the causes which led to a stoppage of production. The *Canadian Mining Review* can have its choice of alternatives, either to declare that the directors of the Centre Star knew when this dividend was paid that the mine was not yet in a self-sustaining position, and foresaw the labour difficulties which ensued, or to admit that the criticism contained in its December issue is as malicious as it is absurd. We beg to draw from this paragraph the implication which is clearly contained in it, namely, that Messrs. T. G. Blackstock and George Gooderham are scoundrels, and to point out that the only conclusion to be really drawn is that the author of the criticism is beyond his depth. The

Canadian Mining Review leaving the character of the Centre Star directors proceeds to deal with the character of the Centre Star ores as follows:

"The report of General Manager Kirby begins with a table showing the net tonnage sold and the values received; we have alluded in previous issues to the form in which this company chooses to give its shareholders a statement of the values and smelter charges, but it is not difficult to pick out the figures which concern directly the investor. The gross value of the 24,525 tons shipped appears to have been \$16.50 per ton, against which is charged \$6 per ton for freight and treatment, \$6.73 per ton for expense of development, and \$3 per ton for stoping expense, or a total cost of \$15.73; the margin therefore would appear to be only 84 cents per ton. It may be noted that the actual stoping cost, as given by the last table in the report, is \$3.59 which is reduced by Mr. Kirby to \$3.00 though adding to the tonnage obtained from the stope the ore taken out in development. The actual cost, however, so far as stoping alone is concerned, would add another 59 cents or a total cost of \$16.32 against a total value of \$16.57—a margin of profit of 25 cents per ton, considering the stopes only. These costs are not so very far removed from similar costs at the adjoining mine, the War Eagle, with the exception of the cost of development per ton of ore sold. Comparing the figures in the last annual statement of the War Eagle Co. we find (the transportation charge being the same) the cost of ore extraction for the last three months of their year amounted to \$15.23, or a total amount of \$11.22 is charged against the value of the ore. Assuming that the costs in the War Eagle for the last three months of 1899 will be approximated in future workings of the Centre Star, and assuming that the smelting charge will ultimately be reduced to two-thirds of the present price, i.e., to \$4.00 per ton, the actual future cost of extracting, shipping and smelting a ton of ore will not be far from \$9.22."

So far good! The \$6.73 per ton for development is apparently treated as if it were an ordinary charge in an ordinary year. For the previous year the same charge was \$20.49. Why should not this also be taken as in ordinary average charge and the conclusion drawn that the mine is a losing proposition from the beginning. The fact of the matter is that the Centre Star Company, with most reputable mining companies, charges against ore sold the total amount of development done during the period covered by the accounts. In estimating the value of a mine this item should never be weighed against the ore sold but against the ore developed, except in the one case where the reserves of ore remain the same and no decrease of fixed cost of extraction has been brought about by the development work done or machinery installed. This charge may vary from nothing where no development has been done to infinity where no ore has been sold. To adopt figures containing it at a very high point is quite as misleading as to the profit earning capacity of a mine as to neglect it altogether. Yet the *Canadian Mining Review* closes its comment as follows:

"The capital stock of this company issued, and on which dividends must be paid, is \$3,300,000; a yearly dividend of 15 per cent. on this amount equals \$495,000 annually, or in round numbers \$500,000. We have seen that at the present time the available profit on Centre Star ore is 24 cents per ton, with a possible increase to 84 cents a ton; assume the average of these figures at 50 cents per ton, it will then be

seen that with such a margin the property must handle 1,000,000 tons of ore per year in order to return the dividend necessary. Since Mr. Darlington put the total amount in sight last February at 100,000 tons, and Mr. Kirby under date of September 30th puts the total amount in sight at 120,000 tons, our readers can judge for themselves the probability of this property making an output of 1,000,000 tons per annum. To engineers who know the figures and are capable of drawing correct conclusions from them, the outlook certainly does not justify the price of \$1.50 for Centre Star stock. At that price the mine would be worth \$5,000,000; from the amount of ore reserves in sight and the net profit thereon the valuation of the mine, by conservative engineers, would not exceed the sum of \$200,000. It is a trite maxim with business men that figures talk, and that nothing but figures should be considered in investments. We commend to their perusal and to their arithmetical calculations the data shown in this report."

If this extraordinary paragraph did not appear in the columns of a representative mining newspaper we should not attempt to follow or remark upon it. It reminds us more of interpretations of the book of Revelation and of Daniel by worthy men whose brains had been turned by too much attention to Biblical prophecy. Figures do talk indeed as the writer claims. From his pen they talk the most ardent rubbish. We learn that to pay 15 per cent. on the capital of the Centre Star Company 1,000,000 tons of ore would have to be shipped, each ton of which would be burdened by a cost of \$6.73 for development. If it were not a much smaller tonnage would do. Let us do some figuring also: Let us suppose the Centre Star during 1901 ships 100,000 tons of ore and to develop 100,000 tons of ore spends \$200,000 compared with \$165,124 spent last year. We get the following result:

100,000 tons of ore at \$16.50	\$1,650,000
Cost of production.	\$300,000
Development.	200,000
Freight and treatment.	\$600,000
	1,100,000
Profit.	\$550,000

As to the items in this account, the cost of production is estimated on the basis of a system of mining where 4.3 tons of ore were broken per man per shift; whereas now 14.4 tons of ore per man per shift are broken. The freight and treatment charges are based on a contract admittedly \$1.25 too high from which the Centre Star will soon be relieved. But as economies are effected a lower grade of ore will become available, and although larger aggregate profits may be earned a higher profit than \$5.50 per ton is not to be looked for. In spite of the criticism of the *Canadian Mining Review* which is both silly and malicious the company appears by all indications to be embarked on a career of sound and long continued prosperity.

The dependence of the silver-lead industry upon the American Smelting and Refining Company has involved consequences which open the question as to whether the dependence should not be thrown off. Contracts for ore upon the customary basis were refused from the first of January 1901. We have seen it reported that the new terms proposed made a reduction in the price paid for lead which involved a loss of \$3.00 per ton on ore carrying 50 per cent.

lead offset by a reduction in freight rate of \$1.00 per ton, leaving a net loss to the producer of \$2.00 a ton. Whether this is so or not we have not at present the means of ascertaining upon authority. But whatever the trouble may be it had sufficient effect upon the industry to close down, temporarily, we hope, the North Star and St. Eugene mines, the lead contents of whose ore are of great relative importance and to limit the operations of the Payne, Whitewater, Last Chance and other Slocan properties. The motives which instigated the American Smelting and Refining Company in its action have been imputed to the desire of a monopoly to enforce monopoly conditions in the productive agencies of the industry it controls. This motive may possibly have influenced the trust to some extent. But their action looks much more like an indication that the United States is becoming unable to absorb as much foreign lead as heretofore through an ample and expanding production at home. There have been plentiful indications during the year that either the supply of lead in the United States was becoming more plentiful in relation to the demand, or that the supply of lead in Europe was becoming less plentiful in relation to the demand. So far as British Columbia is concerned it matters not which. In either case the United States is ceasing to be our most profitable market for the product of our silver mines. Much has been said about the home market in Canada and about reserving that for the home production of lead. Doubtless the reservation of the home market by protection would have a most important effect in stimulating the refining of lead and its subsidiary manufactures for home consumption. It is to be hoped that now that Canada has determined to enter the field in iron, steel, nickel and copper the vast capabilities of the lead industry will not be overlooked. But at the same time it must not be forgotten that where the production vastly exceeds the demand and where production is expanding much more rapidly than the demand it is the export price which must in the last analysis regulate the industry. Canada consumes somewhere between 12,000 and 15,000 tons of lead annually. It produced last year between 20,000 and 30,000 tons and during the present year but untoward circumstances, will produce about 50,000 tons. Under such circumstances it is obvious that Canada must be a large exporter of lead as well as of silver. So far the exports have gone to the United States in the form of silver-lead ores and lead bullion containing silver. If, however, the United States ceases to be the best available market the lead exports must go somewhere else. If the ores of the province are shipped to the United States they will simply be shipped to Pacific Coast smelters and their constituent parts re-exported from Pacific Coast ports. Lead ores can only be smelted to the greatest economy when the excess of lead is utilized to reduce dry ores. They are, therefore, seldom smelted where produced, but shipped to a point where the greater bulk of dry ores is available. Any point on the Pacific Coast presents the necessary conditions. The only question remaining is whether our lead ores are to feed United States industries or to be utilized in establishing Canadian industry. For the latter purpose the present time is propitious.

The passing of the Trail smelter into the hands of Messrs. Gooderham & Blackstock when that event takes place will bring to an end a condition of affairs

which is likely at any moment to arrest the progress of the mines under the control of the Gooderham-Blackstock syndicate. The smelter is at present receiving \$6.00 a ton on every ton of War Eagle and Centre Star ore treated, having a contract for 200,000 tons at that figure. The Canadian Pacific Railway Company offered a release from this contract on condition of the mines forming a new one for 600,000 tons at \$4.75 per ton. This would tie up the product of the mines for at least four years and the offer was refused. The mining companies preferred to complete their smaller obligation at a dead loss of \$1.25 a ton. However, negotiations were entered into for the purchase of the smelter outright and these are now in progress if they have not already been closed. War between the Canadian Pacific Railway and the Gooderham-Blackstock syndicate would attain Homeric proportions. Neither one of them can afford it and the province of British Columbia least of all. It would affect the Canadian Pacific Railway not so much from the magnitude of the interests directly involved as from the fact that the hostilities would be interpreted by many to mean that the Canadian Pacific Railway Company was not prepared to treat the mining industry of British Columbia fairly. It would affect the Gooderham-Blackstock interests because these, both at Moyie and Rossland, could not be released from dependence upon the Canadian Pacific system of transportation without enormous expense and fearful waste of resources. Upon the province as a whole such a strife would have a most prejudicial effect. Capital interested in mines dependent solely upon the Canadian Pacific Railway for transportation facilities would receive a severe shock, and the development of new districts be proportionately retarded. Fortunately, however, it does not seem likely that any serious friction will result over the transfer of the smelter at Trail.

Last month we drew attention to a pervasive peculiarity in the reference made to British Columbia by the English mining and financial press. Here is an extract from an article entitled "Canadian Copper."

"During the reign of high values the copper deposits of the various provinces of Canada have come in for the attention of capitalists as well as miners, and the first results are seen in a very encouraging increase in the output, especially on the part of British Columbia. But 8,000 tons in a year, though it compares well with the achievements of a few years ago, is very much below the country's capabilities, and it is to be hoped that more capital may become available for the opening up of localities which have not yet had a fair chance, and for further developments on those fields with which the industry is already identified. There can be no quarrelling with the recent achievements of British Columbia, which has come to furnish over 40 per cent. of the country's annual production, whereas six years ago it counted for next to nothing. But this province is a long way from having accomplished all of which it is capable, and in Rossland and Nelson are proved properties which only require a judicious expenditure for development to become important additions to the list of contributors. Other places are also coming in, while of late several deposits have been brought to light in the Boundary Creek neighbourhood—at Kamloops, in East Kootenay, and on Vancouver and adjacent islands. In regard to the last,

it is stated officially that "the mountains contiguous to Barclay and Clayoquot Sound and Sidney Inlet have been attracting much attention because of the discovery of copper-bearing ores, upon some of which work is now in progress. The ores are both massive deposits of, and rock heavily impregnated with, chalcopyrite and iron pyrites, carrying low values in silver and gold."

At the first blush this reference looks all right, thing the matter. We read it a third time to find out what it is. Copper is mostly recovered in British Columbia as a bye-product of gold, and it is certainly not the copper value of the ores which has led to an increase in the production. That is one thing. Then the junction of the Boundary country as at the same stage of production with Kamloops and East Kootenay, is an odd circumstance, and lastly the reference to proved mines in Rossland and Nelson awaiting development is not only peculiar as to the terms employed but also as to the places indicated.

The following letter addressed to the *London Mining Journal* is well worth reproducing:

Dear Sir,—If English manufacturers of mining and metallurgical machinery do not want to be beaten all over the world by Americans they must wake up. Shall I give you a few points. There are three methods of pushing their trade that Americans have used to advantage, as I know from experience: 1. Good illustrated catalogues sent post free and gratis to any one applying for them. 2. A good energetic traveller who speaks foreign languages, and so is not at the mercy of an interpreter. 3. Forcing, as a present, on some well-known mining company a good rock drill or other piece of machinery. With regard to No. 1, when out in Australia I was in want of some machinery and applied to a firm in Scotland for their catalogues of machinery. They wrote back asking what guarantee I had for being an orthodox buyer or in the profession. Being disgusted at their "canniness" I wrote to an American firm, who immediately sent out three volumes of their catalogues. Needless to say, the Scotchmen lost the order and the American got it. Fancy throwing away a chance of £500 for 6d.

With regard to No. 2, I have seen English travellers in South America dodging about the seaports among the English import houses, while the Spanish speaking Yankee is up in the interior at the mines, interviewing the managers, native and foreign.

No. 3 dodge is pretty good. The mine is always glad to get an up-to-date piece of machinery, and if they have further orders, it is a safe to say they will put them with the enterprising firm who sent them a good sample free. I know a mine which received a very excellent rock drill in this way, and his enterprising spirit of generosity was rewarded by a very substantial order. This policy is especially recommended to Scotch firms.

There is no doubt that illustrated catalogues are a very good form of advertising, and I beg to call the attention of English manufacturers to such splendid production as Messrs. Fraser and Chalmers, or Gates and Co., or the Colorado Ironworks, or E. P. Allis and Co., all of whose catalogues are well printed and sent gratis and post free to any address. What catalogues are published by English firms are usually only sent as a present with a

larger order, or have to be bought. I have seen English catalogues with a price mark of 10s. 6d. on them, but I have never seen a purchaser. Messrs. Tangye's catalogues are excellent, but are too expensively got up for promiscuous distribution. Hoping these well-meant hints will be received in the spirit with which they are given.—Yours, etc.

COSMOPOLITAN.

New York, December 8.

To the foregoing may be added the fact that American machinery firms thoroughly understand the advantage of maintaining reliable and up-to-date technical journals. In the issue of the *London Mining Journal* in which the above letter was printed the space devoted to advertisements of machinery was roughly nine and one-third pages. That includes a good deal of advertising matter which does not come strictly under this class. Out of this two pages or so are occupied either by American firms, or English firms with American branches, or the converse. The great body of English manufacturers of machinery is evidently quite unrepresented. In the *Engineering News* and *American Railway Journal* of New York the pages devoted to this class of advertising number fifty. The body of all such journals in America is besides full of descriptions of new machines and improvements copiously illustrated. Such matter may be paid for or it may not. Whether it is or not it is of great advantage to prospective buyers. In addition, the display type used in English technical journals looks as though it had been called from the pie box of an up-country printing office. It gives a black muzzy impression of unrelieved monotony, and the one idea of display matter seems to be to get as much black ink as possible on to as small a white paper space as possible. Even the *MINING RECORD*, which does not pretend to cover a business field more extended than British Columbia and the Pacific Northwest, has twenty-three pages devoted to advertisements of machinery as compared with the *London Mining Journal's* nine and one-third. If we are to judge by the way in which we keep our advertisers and the unsolicited business in this line which keeps dropping in our advertisers get value for their money. British Columbia may not yet be the largest but it is certainly the most rapidly expanding market for machinery, particularly mining machinery, in the world. English manufacturers simply refuse to enter it. Presumably they are still in doubt whether British Columbia is yet an "orthodox buyers or in the profession." It cannot be helped. It is more their loss than ours.

Numerous estimates have been made of the value of the output of our lode mines during 1900. They have varied from \$9,000,000 to \$12,000,000. The higher figure is probably more nearly correct. The practice of the Mines Department of closing the year for the statistical purposes, with the 30th of November effects no good purpose. It was originally introduced to expedite the publication of the returns but has had no marked influence in that direction, and merely disassociates British Columbia from the practice followed in all other countries and leads to endless confusion. For instance, the returns of tonnage made by gold commissioners and published in the annual report do not agree with the official returns given by the Department, the 31 days of December accounting for the difference. But the ordinary

reader does not appreciate such niceties and is apt to disregard both sets of figures as inaccurate. A monthly return should be made similar to that published by many mining companies based on assay values and tonnage. This should be published from month to month summarized to the end of the year and published in January as "Uncorrected Mining Statistics." These should then be checked as at present by smelter returns and incorporated in the Records of the province. This system would place the province on the same level as the United States in this matter. Within the first few days of January the director of the mint is able to give a resume of mineral production in the United States for the previous year sufficiently accurate for all practical purposes as a guide to investors in mines and dealers in the metals. The province of British Columbia requires above all things a good credit. The credit of the province is vitally affected by every ton of ore taken out, that is provided, and as soon as, the outside world knows what is being done in the way of production. The knowledge of an expanding mining industry means an expanding provincial credit. Yet many seem to think that the more the facts of our growth in this respect can be hidden the better it is for us. May we hope that at the forthcoming session of the legislature some steps will be taken to reform the practice of the province in the matter of mining statistics.

The Rossland ore shipments for the first 26 days of the year total 24,298 tons. For the whole month of January, 1900, they were 24,933 tons. January, 1900, however, was not exceeded in tonnage until the month of September, whereas in January, 1901, shipments have been restricted by lack of smelting facilities. We have on Mr. Macdonald's own authority the statement that the output from the Le Roi alone can easily be maintained at between 20,000 and 30,000 tons a month, which with the remarkable activity shown among the other mines would raise the total output to very remarkable figures. This expansion in the output of the Le Roi is not expected to take place before about the 1st of March. Continual washouts on the railway south of Northport have placed vexatious delays in the way of completing the enlargement of the smelter. Among the most satisfactory features in connection with this month's operations in the Rossland district, is the beginning of shipments from the Velvet mine. These shipments cannot in the nature of things be regular, as the mine is dependent on a waggon road at whose lower end snow is neither plentiful nor long continued, whereas mud is both plentiful and long continued. But they are a welcome indication of what may be expected from the development of the Sophie Mountain camp. The outlook for the Rossland district is as particularly bright at the beginning of this year as it was particularly gloomy at the commencement of last year.

The coal and coke situation in the mining districts of the province has been affected by the coal famine in Montana, Idaho and Utah accentuated by a coal-miners' strike in Colorado. It has been difficult for the Crows' Nest Coal Company to provide enough coal and coke to meet the expanding demands of the mines and smelters. And it has besides an open market for coal and coke in the United States in excess of what it can produce. Fortunately the difficulty

is not occasioned by any lack of coal but merely by insufficient openings to get enough out. It is a difficulty remedying itself every day not merely by the further opening of the mines, but also by the exploitation of new coal fields. There is no lack of coal in British Columbia. In addition to the vast measures in the Crow's Nest field there are extensive deposits immediately west of the Gold Range and also in the Nicola Valley. These deposits lie cheek by jowl with smelting ores of great variety and riches. The ore provides a use for the coal, the coal renders valuable the ore. Wherever these conditions have prevailed great industrial communities have been developed. British Columbia is no exception to the rule.

On account of the habit of so many English companies of holding their annual meetings at the close of the year our columns this month are pretty heavily burdened with reports of directors and such like matter. These, however, if not particularly entertaining to read, form a valuable reference in the history and standing of the mines to which they refer. For that reason so much space in our February number is directed to them.

AN IMPORTANT JUDGMENT.

WE are indebted to the *Nelson Tribune* for the following report of an important judgment in a mining case:

The judgment of the Supreme Court of Canada lately delivered by Mr. Justice Gwynne for the full bench in the now famous appeal case of *Coplen v. Callaghan* respecting mineral claims in the Slo-can district arrived from Ottawa yesterday morning. The facts of the case are briefly as follows: The Cube Lode mineral claim was located as running in a northerly direction, and so described on the post of location as well as on the records. The respondent believing the location to have been made as described on the records, to wit: in a northerly direction staked the ground running southerly from the appellant's posts. It so happened, however, that the appellant staked his claim in a southerly direction, but by mistake described it as staked in a northerly direction. Both parties were therefore staked over the same ground.

The appellant sought to save himself by claiming the protection of section 28 of the Mineral Act. The section has been the cause of more litigation than the whole remaining portion of the Mineral Act. It reads as follows: "Upon any dispute as to the title to any mineral claim, no irregularity happening previous to the date of the record of the last certificate of work, shall affect the title thereto, and it shall be assumed that up to that date the title to such claim was perfect, except upon suit by the Attorney-General based upon fraud."

Mr. Justice Gwynne's judgment reads as follows: "That the description of the Cube Lode claim as recorded by the appellant does not precisely conform to the provisions of the statute of British Columbia in force in that behalf if not disputed. The evidence, indeed, leaves no doubt in the matter, and it is in fact admitted. The only question therefore, which, as it appears to me, is at all necessary to be decided in the present appeal is whether the deviation from the prescribed was calculated to mislead and did in fact mislead William Callaghan, now deceased, when subsequently recording the Cody and Joker

fraction claims located by him on behalf of persons whose title was duly transferred to him in the lifetime of deceased of whose estate the respondent is administrator. The Cody and Joker fraction claims as recorded cover portions of the Cube Lode claim as claimed now by the appellant, but do not touch the Cube Lode claim according to the description as recorded. The whole contention of the appellant is that all objection to the defect in his recorded description of the Cube Lode is removed by his certificates of work done by force of section 28 of chapter 135 Revised Statutes of British Columbia; but whatever effect that contention might be entitled to in an action between the appellant and the Provincial Government it has no application here where the contest is solely between the appellant and the respondent in which the sole question is whether the owner of the Cody and Joker fractions claims as recorded have not by reason of the error in the Cube Lode claim as recorded acquired superior right to the claim of the appellant to so much of the land covered by the records of the Cody and Joker claims as the appellant asserts claim to as part of the Cube Lode claim as now claimed by him, although such land is not within the description of the Cube Lode claim as recorded.

"That the error in the description of the Cube Lode claim as recorded was calculated to mislead, and that in point of fact the Cody and Joker fractions claims were located and recorded as they were by reason of such misleading error, have been found as facts by the learned judge who tried the case, and such his finding is well supported by the evidence, apart altogether from any question of fraud in any person whomsoever.

"The appeal, therefore, must be dismissed with costs."

THE NORTHPORT SMELTER.

The London financial press is worrying itself over the Northport smelter still. We will place the position of affairs as shortly and clearly as we can. We regret that, not being in the habit of writing for children, we cannot put it in words of one syllable.

1. The American Le Roi company sold to the B. A. C. all it owned, viz., the Le Roi mine, three-fourths interest in the Northport Smelter company, and a contract between the Mining Co. and the Smelting Co. for an \$8 freight and treatment rate.

2. The B. A. C. turned over these three assets to the present Le Roi company.

3. The smelter was getting \$8 for doing what cost \$3. Consequently Messrs. Breen and Bellinger were netting \$1.25 on every ton of Le Roi ore mined. These gentlemen owned the odd quarter of the smelter.

4. As the profit on the Le Roi ore was not over \$5 a ton these gentlemen were receiving 25 per cent. of the profits of the mine.

5. It was necessary to buy them out.

6. They were bought out about a year or so ago.

7. The contract above mentioned was valid as long as the quarter in the smelter belonged to Messrs. Breen & Bellinger.

8. Therefore the Le Roi company escaped provincial ore taxation which exempts freight and treatment charges.

9. The Le Roi company endeavored to maintain the validity of this contract before a provincial commission in order to escape taxation after Messrs. Breen & Bellinger were bought out.

10. The commission said the plea was nonsense.

11. The Le Roi company now pays taxes.

MINING AND SCIENTIFIC NEWS.

A serious coal famine is affecting the states of Montana, Idaho and Utah.

Compared with 1899 the imports of lead from Great Britain to Canada have fallen in value from £41,788 to £21,926 for the ten months ending 31st October.

Canada has exported to Great Britain £185,389 worth of wood pulp in the ten months ending October 31st, as compared with £121,214 worth during the same period of 1899.

Former rates for freight transportation from Victoria to Omineca were as high as one dollar per pound. In 1896 they were 26 cents per pound; in 1899, 17 cents to 25 cents; in 1900, 12 cents per pound.

It is reported from results of actual experiment that overhead wires, working at moderate efficiencies and with reasonably high potentials, can be trusted to transmit power to the distance of 150 miles.

During the year 1900 the Butte copper mines have paid \$13,585,100; the Lake Superior copper mines, \$9,798,000. The Lake Superior mines have paid in dividends to date \$82,898,500; the Butte mines, 43,295,323.

The average man must often have been struck by the difference between the New York price and the London price of silver. The difference is explained by the fact that the New York prices are per fine ounce, the London prices are per standard ounce .925 fine.

Even in the Arctic regions during the miocene period the mildness of the temperate zone prevailed. There were dense forests where nothing but ice is now found. Water lilies grew within eight degrees of the pole. In Europe, meantime, there flourished the lion, elephant, hippopotamus, rhinoceros and other animals which at present seem peculiar to the tropics.

The Nickel-Copper Co., of Ontario, whose large refining works are at Hamilton, have begun operations on a large scale, and have placed in their new power-house two 240-k.w., and one 75-k.w., S. K. C. generators; the former to drive the dynamos for the electrolytic process and the latter to drive the ore process. These three machines are being used as synchronous motors, taking the current from the Cataract Power Company's lines at 2,400 volts.

The only large dredge on the Saskatchewan for gold dredging purposes, is the Otter, which has been equipped with new machinery from England, but not in time to do any real work this season. This is owned by the Drolet Co., who are also building at Edmonton two other large dredges to be fitted up with strong machinery from England. These are of the type so successfully used on the rivers of New Zealand and are to be ready for operations next spring.

There has been great progress in the size of electrical machinery since the dynamo began to be an important factor in industrial affairs. Twelve years ago a machine absorbing 50 horse power and able to maintain 500 16-candle power lamps was considered very large, and machines of this size were the exception rather than the rule. Now dynamos of 2,000 and 3,000 horse power are usual sizes, while a number of machines of 5,000 horse power are working at Niagara Falls.

During last year the 630 miles of electric track in Canada were so used that the total number of miles run by cars was 26,646,847, and the number of passengers carried was 104,033,659. The mileage run and the passengers carried show that for each mile run they carried $3\frac{1}{2}$ passengers. Compared with the previous year, the number of passengers carried increased nearly nine and one-half millions, and the number of miles run by over a million; the passengers

carried per mile increased from $3\frac{1}{2}$ to $4\frac{1}{2}$. The amount of paid-up capital invested is \$21,700,000. The steam railways in 1899 carried 16,168,191 passengers, running a train mileage of 25,292,856, thus making an average of $1\frac{1}{2}$ passengers per mile. Together the steam and electric railways carried over 120,000,000 passengers, and the proportion was about 13 by steam to 87 by electricity.

O. R. Sprague, a Buffalo mining expert, has reported that on the property of the Cobb Mining and Developing Company, on Dog Lake, Frontenac county, Ontario, about 400,000 tons of emery are now in sight. It is said that actual tests show this to equal the finest Turkish emery. The company will draw this winter 500 tons into Kingston, and ship to Buffalo, where the material will be manufactured into emery wheels.

The motor recently consigned to the B. A. Corporation, of Rossland, B. C., by the Royal Electric Company, Montreal, is the largest motor ever built in Canada. The motor is an S. K. C. two phase machine, and its capacity is over 1,000 H. P., and is being used to drive the compressors and hoists at the mines. The total weight of the motor, boxed, ready for shipment, was 105,000 pounds, or $52\frac{1}{2}$ tons. The weight complete of the motor, with its accessories, was over 120,000 pounds, or 60 tons, requiring two full cars to transport it.

The total dividends disbursed by the various companies identified with the mineral industry of the United States in the eleven months ending November 30th as far as reported to the Engineering and Mining Journal amounted to \$114,567,452, paid by 200 companies. Of the total, the gold, silver, copper, lead, zinc and quicksilver mines contributed \$48,759,942, or 42.5 per cent., while the remaining \$65,816,510, or 57.5 per cent., was paid by the petroleum, coal and coke, iron and steel and other companies. Were the dividends paid by private corporations, which are not reported, added, it would appear that the returns received by capital invested in the mineral industry exceed those of any other industry in this country.

The exploring parties sent out in the autumn into Northern Ontario by the provincial government have now all returned. Such a cursory examination as the explorers would be able to make of minerals would not, of course, determine the mineral resources of the new country, but a number of more or less important finds were made; while the reports on the agricultural and timber lands are most encouraging. Pulp timber exists in almost inexhaustible quantities, while there are vast tracts of fine farm land awaiting settlement in a climate that is more temperate than one would suppose from the latitude. These reports are to be published shortly in book form for general information.

During the past eighteen months the population of Sydney, N. S., has increased from 2,500 to 10,000, owing to the operations of the Dominion Steel and Iron Co., which has now two blast furnaces in operation, and early next year will have two more. Four thousand men will be employed at the iron works next year, and the surplus labour of this part of the country has been so drawn on that it is hard to get men for the coal mines. The four furnaces will be able to smelt 400 tons a day. The 400 coke ovens are being got into shape, and it is thought that the steel plant will be in operation about the middle of 1901. The company will ship steel rails to Europe in competition with the United States manufacturers. The works will cover 480 acres, and are the largest ever built as a single undertaking. It is expected that 500,000 tons of pig iron will be produced in 1901, most of which will be converted into steel. About \$5,000,000 has already been spent for buildings and machinery, and the entire plant will cost about \$10,000,000.

FORGOTTEN LODE MINES OF THE LOWER FRASER RIVER VALLEY.

(By V. J. St. George.)

WITH the comparative exhaustion of the auriferous bars on the lower reaches of the Fraser River coincident with the discovery of the deep placers of Cariboo large numbers of prospectors were set at liberty to shoulder their packs and move on. While the majority continued their way to the higher stretches of the river intent on striking still richer ground in the newly discovered diggings, some returned to California or settled on the Coast, and still others wandered off into the great Southern interior regions of British Columbia in search of richer still undiscovered fields. They left the evidences of their presence at many a spot where the prospector or hunter of a later day now sometimes comes across a rotting moss-grown flume or stumbles into what was once a ditch.

To what almost inaccessible fastnesses of that jungle of mountains the more adventurous of those unrecorded pioneers penetrated we shall never know, but Pen d'Oreille, Rock Creek, the Big Bend and Wild Horse with many another long forgotten creek will always remain silent signal stations in the early history of the province. Still, however, there were a few of the successful or those weary of wandering who remained with their claims, and as these became gradually worked out they took up pre-emptions on the rich alluvial bottoms of the Fraser.

They married, usually natives, planted their shade trees and generally took life easily and when in need of a dollar or two often knew of a bit of gravel which would still pay something when properly applied to.

Of this class of settlers were the two Murphy brothers. They were the chief owners in the once well-known "Union Bar" gravel claim. It is situated about a mile east of the railway station of Hope and opposite the small island on which the little Roman Catholic church of the Union Bar Reservation stands. The area of the island is fast diminishing, owing to the action of the river, and not long ago it was found necessary on that account to remove the remains of those Indians who had been buried there to a securer place, but the church may still be plainly seen from across the river by the railway passenger, resembling amidst its surroundings, more some old-world scene in miniature on painted china than a reality of the new West.

The Murphy brothers settled on a homestead running back from their placer claim towards the summit of the hills and it was on this land that they discovered in 1859 the ledge which has since been generally known in that locality as the "Murphy Mine." The outcrop is of considerable size and presents the appearance of being the showing of a vein of some magnitude.

The vein matter is quartz containing pyrites and chalcopryrite which in addition to the copper contents carry value in gold and silver. Explorations under the present management will probably show the ore bodies as a whole to be of comparatively low grade and susceptible to considerable concentration.

The first work done by the Murphys consisted of the sinking of two prospect shafts within a short distance of each other, and on the ledge. The depths were respectively 30 and 16 feet. In the light of

subsequent events it seems a great pity that they did not stick for the time being to the shafts instead of pursuing that which so often proves an *ignis fatuus*—the long crosscut tunnel of the early development day of a prospect. After doing as much work as they could on their own account they sought financial assistance from their friends on the Coast and a company was got together to work the claim.

It is almost impossible at this date to obtain exact particulars as to the ups and downs of the company and incidentally of the progress in different years of the workings and how finally the claim was closed down, as the old timers still living in those parts seem only able to agree in disagreeing or Lama like to be too intently engaged in profound inward contemplation of the glories of the epoch of '49 to be able to give any intelligent information to the inquirer of the twentieth century. However, it seems that among the principal owners in the company were the Rev. Mr. Pringle, William Sutton, Gus Herrman, Doc. Chisholm, Judge Smith, Joseph William McKay and others whose names are not available. The results of assays given were from memory or hearsay only and are not vouched for. They went from \$12.00 to \$56.00 in silver and at the upper shaft returns of \$15.00 to \$18.00 in gold were obtained.

Beyond the bare mention of the name of the mine the Geological Reports contain nothing concerning it with the exception of the following: "Report on the geology of the country near the forty-ninth parallel of north latitude west of the Rocky Mountains from observations made 1859-1861 by H. Bauerman, F.G.S., Geologist to the North American Boundary Commission," which is reprinted in the Report of Progress, 1882-83-84, p. 38 B. He says: "At Fort Hope a large quartz vein has been found on the right bank of the Fraser River. It contains at the outcrop a small quantity of iron and copper pyrites associated with an earthy black copper ore (probably resulting from the decomposition of an argentiferous fahlerz) some of which yields about 40 ounces of silver to the ton. A level was commenced on this lode in September, 1861, but was subsequently abandoned, owing, I believe, to the high price of driving, from the hardness of the ground."

A couple of years ago, prior to the resumption of work, the main workings consisted of a tunnel projected to crosscut the ledge at a depth of 275 feet. The mouth of this tunnel is immediately above the high water mark of the Fraser. Whether they had ever anything in the way of a survey in order to enlighten themselves as to the probable distance it would be necessary to drive the tunnel before cutting the ore body the writer is unable to state, but if such they had it is impossible not to admire the pluck with which that company set out to run their tunnel through the hard crystalline schists a distance of 500 feet. This was the length attained when after the usual squabbles, the inevitable shortage of funds and the accompanying disillusion the whole matter was allowed to drop without having reached their goal—the ledge.

While a search through the files of Victoria papers of 1859 and following years will show that some quartz mining was done in the Goldstream district and elsewhere on Vancouver Island, and in fact the Beacon Hill "discovery" of 1898 was made in the first mentioned year and created, according to the printed accounts, much excitement, still it must not

be forgotten that those claims on which some work was really done were abandoned and re-located more than once since those days and are not to be compared with the Murphy mine as to the amount of capital expended nor as to the prolonged periods of development activity, which apart from any intrinsic merit as a mine, have characterized this claim.

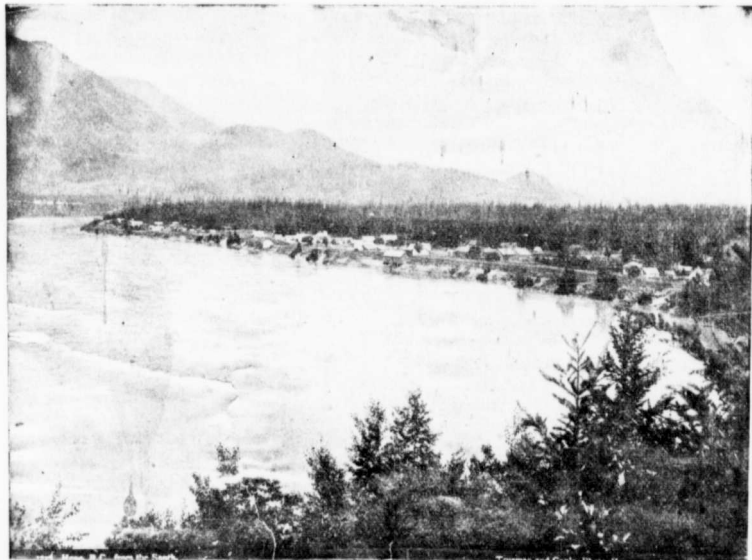
On the advent of the Canadian Pacific Railway on the scene the line was surveyed above this tunnel and in course of construction the dump covered up the approach to and mouth of the workings, but in accordance with a promise of the railroad company in those days the tunnel was re-opened by them a couple of years ago in order to permit of the resumption of work. It is therefore an interesting fact that the passenger of to-day, by the main line of the C. P. R. is carried all unconsciously only a few feet above and across this tunnel—a tunnel which may literally be described as the first attempt on a scale of any importance to exploit the enormous lode resources

Creek near Yale came into possession of the claim by purchase. The tunnel was re-opened and work was promptly resumed with vigor after the long shut-down of thirty years. Operations have been at times delayed by foul air, necessitating the installation of ventilation apparatus. Since the new company took hold the tunnel has been continued some 250 feet and it has now attained a total length of 750 feet.

At the time of writing the operating company expect to meet the ledge at any time. It is to be sincerely hoped that the energy and enterprise of these Seattle miners, coupled with the exceptional transportation facilities present, will yet wring from the rocks that reward which they deserve and that ere long the title word "forgotten" will be but a misnomer as applied to the Murphy mine of Hope.

THE MINES OF SILVER PEAK.

The next period of activity in lode mining in this part of the country took place in the beginning of the



View of Hope.

which we now know are contained in what is the present Province of British Columbia. Also not many mineral claims are so fortunately situated as this one, the dump of which is confined at its head by a transcontinental railroad and the foot of which is washed by a navigable river, or "between the devil and the deep sea," so to say.

It was not until 1878 that title to the claim was perfected, in which year a crown grant dated September 3rd was issued to Charles and James Murphy. This grant was the fourth in order of sequence made in British Columbia. In the course of time the two brothers died and their estate, including the Murphy mine, passed partly to the children of the one married brother and partly to an ecclesiastical sisterhood in New Westminster. For many years nothing was done with the mine until finally in 1899 a Seattle mining company which had been operating on Siwash

seventies on the once celebrated Silver Peak or Eureka Mountain. From the observation car of the Imperial Express as it winds around projecting crags now hovering as if undecided on the uttermost brink of the river and anon plunging through rock cut into tunnel in its approach to the great gorge of the Fraser River at Yale, a splendid view of this magnificent mountain is obtained except when from time to time the great bulk of Hope Mountain intervenes. Situated on the south bank or left-hand side of the river, this mountain, which splits into jagged twin peaks, one of which resembles a smaller Matterhorn, is easily recognized, and in the late summer months still further identification is furnished by a vast snow cross formed by never-melting banks. In several respects this mountain is unique in the mining annals of British Columbia, for in addition to the facts that the ledges are contained in a conglomerate country

rock and that the ores carry considerable amounts of chloride of silver and other varieties of silver ores rarely met with elsewhere in this country it is to be remembered that the first three crown grants applying to metalliferous lodes in British Columbia were issued in favour of claims located on Silver Peak.

Interesting, too, on account that in connection with these claims the residents of the Coast towns took for a time a keen interest in lode mining as distinguished from placer mining—an interest of which they gave proof by investing in shares of the companies formed to develop the ledges.

The mountain is situated in township 4, range 26, west of the 6th meridian and is about seven miles south of the village of old Fort Hope, originally a Hudson's Bay post, once the gateway to the great interior regions of the Okanagan, the Kootenays and the Colville districts, the posts of which were supplied once a year by the brigades of the company over their own cart trail. During the gold excitement on the Fraser Hope was a busy camp with a large floating population. Of late years the village has been in a moribund condition. A little travel to the Similkameen country and the silver-lead camp of Summit City, 27 miles distant at the headwaters of the Tullameen, with some gold dredging in the neighbourhood have prevented total extinction. With the construction of the proposed coast railway to the interior the place will rapidly regain some of its old-time importance. It is charmingly situated on the bank of the river, but on the opposite side to the railway station, and is at one elbow of the great bend to the north which the Fraser here begins to make.

The mines of Silver Peak are reached by a pack trail built in the early days, which leaves the Hope-Chilliwack government road at the crossing of Silver Creek near its junction with the river. The trail is of a total length of about six miles of which the first two miles rising very gradually from the river elevation of 130 feet run along Silver Creek a boisterous torrent famed for its splendid fishing. The remaining four miles consist of steep zig-zags with the exception of a flat of several acres in extent across which the path runs before the ascent of what may be called the Peak proper begins.

From this point the mountain commences to divide into two stupendous pinnacles. This division, gradual at first, follows the track of a great snowslide down which chasm in summer a snow-fed cascade thunders. Higher up the peaks are connected by but a razor-backed ridge. Bearing to the left the trail circles and clings to the mountain wall and with abrupt turns gradually works its way upwards until at an elevation of 4,850 feet it emerges on a tiny flat on which one of the old bunk houses still stands.

The discovery of one of the ledges—the Eureka—was made by an Indian of the Emory Bar Reservation, George Wil-willuts, in 1870. While hunting goat he found on a rock slide numerous fragments of ore. Taking some of the float with him he hastened back to Hope and on having received a promise of sundry goods and valuables *inter alia* a gun which local tradition says he never received, he led some white men to his find.

Those early years of the seventies were the palmy days of silver—the price stood at double the present figure. All over the west men grew rich in a day or went broke in an hour and the fame of the Bonanza Kings and the Comstock, the Emma, the Silver Islet

on Thunder Bay and many other fortune making mines with its resultant speculative activity spread to every corner of the continent. The discovery of the Hope silver claims with their high grade assays led naturally enough to the conviction in Victoria and New Westminster that a repetition of the money-making times of Nevada and other mining regions might be expected nearer home. So it was not a difficult matter for the locators of the Eureka to enlist local support in the Eureka Silver Mining Company, which was organized under the Company Ordinance, 1862, in September, 1871, with a capital of \$150,000, divided into 3,000 share of \$50.00, with Mr. George Deitz in charge of development. The shareholders included most of those who were prominent at the time in the Colony in official, professional and commercial circles.

These claims were taken up and crown-granted under "An Ordinance to facilitate the working of mineral lands," No. 123, 10th March, 1869, the preamble of which runs: "Whereas it is expedient to develop the resources of the Colony by affording facilities for the effectual working of silver, lead, iron, copper, coal, and other minerals, other than gold—be it enacted," etc., etc.

Under this Act certain fees were payable for the right to prospect within extended limits and after the licensees had completed their preliminary prospecting operations they were called upon to define within a restricted area the ground they desired to have surveyed and ultimately deeded to them. The section defining the area allowed runs: "shall for each individual applicant not exceed three chains long by two chains wide and for each association or company of ten persons thirty chains long by six chains wide." Under this Act the Victoria Silver Mining Company received on the 7th July, 1875, a crown grant for the Van Bremer ledge, being the first ever issued under the above ordinance. The second grant was issued to the Eureka and the third to a small claim afterwards incorporated with the Eureka Company.

During the years 1871-75 work was carried on to some extent on both the Eureka and Victoria claims. The trail was built, several cabins erected, as also a short rope tramway from the Eureka main tunnel to the dump. On the Victoria the main tunnel was about 80 feet in length and the Eureka some 220. Some surface mining was also done. The history of the companies was pretty much that of all the early lode mines in British Columbia. What with insufficient funds and shareholders with assessable shares and others with unassessable stock and a law-suit thrown in, it is not difficult for us to understand that the ultimate collapse of operations was only a matter of time. Misfortunes seemed to dog even some of the individual operators. One of the original locators was executed at Victoria for murder and another who was one of those most prominent in pushing matters lost his life in the wreck of the steamship "Pacific." It may also be pointed out what great difficulties the companies had to contend with, not only in the high price of labour, tools, explosives, provisions and local packing rates, but in the cost of the transportation of such mineral as they mined to the one or two smelters then in operation in the Western States, where the complex ores which these claims produced could be treated at the exorbitant charges then prevailing.

Perhaps the following extracts from various government reports will explain to some extent the

gradual oblivion into which the whole matter long since insensibly dropped. Since then, owing to the isolated position of Hope and the surrounding district and the concentration of attention till recently on the Kootenays, especially as regards silver mining and finally the general lack of knowledge of the matter on the part of the present mining generation, have militated against the revival of mining on this mountain:

GEOLOGICAL SURVEY OF CANADA.

Report of Progress for 1871-72 (page 57).

"I was not able to examine the site of the silver-bearing ledges at the Eureka silver mine, near Hope, but was informed that the proprietors of the claim valued it at \$300,000. Difficulty of transport, the high price of labour, and the want of requisite capi-

Report by Dr. T. Sterry Hunt.—page 66 *ibid.*

"Silver ore from the Eureka mine, near Fort Hope.

"These specimens show a veinstone of spathic iron, with some quartz through which is disseminated a massive steel grey ore giving a black powder and yielding by analysis: sulphur, antimony, copper and silver. I was not able to obtain sufficient in a pure state for a quantitative analysis, but from the comparatively large proportion of copper and antimony which the ore contains it would seem to be probably a highly argentiferous fahlerz or freibergite.**

An average sample of the veinstone, in a much decomposed condition gave 1.19 per cent. of silver, of which 0.11 per cent was present in the form of chloride and was dissolved from the raw ore



Hope Mountain and Silver Peak from Emory Bar.

tal have, however, hitherto prevented its development.

"The mine is situated nine miles south from Hope on the Fraser River, at an elevation of about 6,000 feet above tide water. Messrs. George Dunbar and Thomas Schooley are the proprietors. They state that the vein is from 3 to 12 feet wide, that a tunnel has been driven in it for 500 feet,* and that it can be seen for a thousand feet on a strike N.E. and S.W. dipping S.E. 80°-90°.

"The specimens for analysis (for which see Dr. Hunt's report) were taken from a heap of several tons, and were considered a fair average of the whole."

(From journal and report by Alfred R. C. Selwyn, Director of the Geological Survey of Canada.)

by a solution of hyposulphite or soda; other considerable masses of the ore would yield a much larger proportion of the precious metal."

Report of Progress for 1873-74.—page 7.

"A yellowish decomposed veinstone brought by Mr. Richardson from Hope in British Columbia, was assayed and gave at the rate of 271.48 ozs. of silver to the ton of 2,000 lbs. Besides the silver it contained lead, copper, iron, arsenic, antimony and sulphur.

"This specimen was given to Mr. Richardson by Mr. Nelson, M.P., and was taken from a heap of several tons of similar material from a claim on the same vein as the Eureka mine mentioned on page 66 Geological Survey, 1871-72, and where it is stated that sample of the ore from the mines was found by

*This is an obvious error—development had then only been initiated and the maximum length when work ceased was 220 feet.

**Elsewhere Dr. Dawson has stated that this ore may be freieslebenite.

Dr. Hunt to contain 1.19 per cent. of silver. This is equal to 285.60 ozs. to the ton of 2,000 lbs., very nearly agreeing with the result obtained by Dr. Harrington, etc. etc."

MINERAL WEALTH OF BRITISH COLUMBIA.

By Dr. George M. Dawson.

"Coast Ranges.—The most important discovery of silver ore yet made in the Coast Mountain belt is that near Hope, on the Fraser. The veins here run through a mass of conglomerate which caps a mountain known as Silver Peak, of which the lower part is composed of granitoid rock.

"The conglomerate is believed to be of Cretaceous age.* Difficulties which have occurred in connection with ownership have unfortunately so far prevented the working of this very promising deposit. The following notes concerning it are chiefly derived

time the above lead was being worked another about 300 feet distant was discovered. The lead is of a far more valuable character and it is called the Van Bremer mine.

The ore is described as chloride of silver and has yielded under assay from \$25 to \$2,403 of silver per ton of rock. A quantity of the outcrop sold at San Francisco at \$420 per ton. The lead is distinctly traceable for half a mile. Although a company has been formed for working these lodes no works of any importance have been undertaken.

It is, however, rumoured that when the company have matured their plans, workings of the lodes will be vigorously prosecuted.

Mercury.—page 105 B. *ibid.*

"Mercury is mentioned as appearing in globules in the native state in some parts of the silver ore of Silver Peak near Hope."



Silver Peak from Hope Station.

from the reports of the Minister of Mines of British Columbia for 1874, page 16."

Report of the Minister of Mines.

* * * * True veins of silver ore, were, however, finally discovered about 1871 in the Cascade Mountain range at Fort Hope, about 80 miles from the mouth of the Fraser, six miles south of the town. The first lead, called the Eureka mine, crops out about 5,000 feet above the river level, is well defined, four to seven feet in thickness, and has been traced 3,000 feet. A tunnel has been driven in this lead for 190 feet. The ore is described as argentiferous grey copper and has yielded under assay** from \$20 to \$1,050 worth of silver to the ton. During the

*Elsewhere Mr. Dawson states of the Cretaceous or late Jurassic, while in the catalogue of the Geological Museum at Ottawa they (the ores) are classified as from Palaeozoic formation.
**S.B.—Owing to the fact that silver has fallen about 50 per cent. since those years, these figures are about double to-day's value.

Report of Minister of Mines (B.C.) 1875.

Extract from the Report of the Government Agent at Yale, Mr. William Teague:

* * * * "Operations at the Eureka and Van Bremer silver mines have been at a standstill although from each of these mines, specimens have been assayed with such results as would justify a vigorous development of the mines."

Iron and Silver.

"It is a matter of regret that no active operations for the development of the silver leads at Hope, or of the rich deposits of iron on Texada Island, have to be recorded for the year 1875. There is little doubt that these mines are of considerable value, a fact corroborated by the eagerness with which every available portion of the land in the proximity of the leads has been taken up. It is only open to express a hope that during the year 1876, earnest endeavours will

be made by those who have acquired possession of these mines to commence operations for their actual development."

Report of the Minister of Mines (B.C.) 1877.

Extract from the report of the Government Agent at Yale, Mr. William Teague:

"The silver mines in these localities, I deeply regret to inform you, are lying dormant and intact, for the want of capital or enterprise to work them, therefore I am unable to submit any further important changes respecting the development of these promising resources."

And finally this extract from the last Government report in which Silver Peak is mentioned and which has a decidedly eptaphic tone:

Report of the Minister of Mines (B.C.) 1884.

Extract from the report of the Government Agent (Yale and Lytton), Mr. Frederick Hussey:

"* * * * In the Hope division the silver mines which attracted so much attention some time back seem to have gone out of thought simply from the want of energy and capital to work ground which has been shown to contain an almost inexhaustible supply of the precious metal."

From various personal sources both on the Fraser and in Victoria the writer has received miscellaneous information regarding the doings at the mines. Mr. William Teague, the late agent at Yale, and who is still a resident there, states that the results from samples of ore which he sent to London, San Francisco and had assayed locally were 112 ozs. silver and 2½ dwt. gold. Throughout the two or three years of activity at the mines there appear occasionally items of news thereon in the Victoria papers. So on the 23rd of January, 1872, the "British Colonist" states that eight tons of ore are to be shipped next day to San Francisco for a "practical test." On the 5th May, 1872 mention is made of assays of \$395, and on the 26th September, 1872, the same paper states that: "Mr. S. P. Moody, who returned from San Francisco yesterday, brings a very encouraging report from the three or four tons of silver ore which he took down. The ore was sold at \$230 per ton, while from 240 lbs. two silver bricks worth \$71.32 in silver and 6.42 in gold were extracted," etc.

On October 29, 1872, the "Colonist" has a leading article on the Victoria Silver mine, in which it is stated that assays from the Van Bremer ledge go as high as \$2,400 in silver and \$40 in gold, and that the ore will probably average about \$500; also that a shipment of ten tons is at New Westminster for transportation to Swansea, and another of thirteen tons for San Francisco.

So much for the written data which have been rescued from the flotsam and jetsam of bygone years.

Apparently repeated attempts to re-organize were futile, as some of the original shareholders or their heirs refused to part with their holdings except at exorbitant figures, or accept assessable stock in lieu thereof.

From the above-mentioned cabin at 4,850 feet the mountain towers up in sheer overhanging cliffs to a height of 6,000 feet or more. The extreme summit has never been scaled and in fact affords the really expert Alpinist an unrivalled opportunity for breaking his neck. To the Eureka tunnel from the cabin is a distance of a few hundred yards, but the writer found on his visit that the mouth of the tunnel had

caved in although he is informed that it was still open two or three years ago, and that it was only timbered at the entrance, so that it would probably be no great task to re-open it. The ledge there runs up a crevice, at an angle of about 65 degrees, which is ten feet broad at the entrance and apparently four or five at the summit 450 feet up. By making a lengthy detour to the end of the spur of the mountain formed by this crevice this same ledge may be seen as it descends for several hundred feet the face of the precipice and continues apparently below the accumulated debris of ages.

Farther on the Van Bremer ledge is come to. In common with all the other ledges on the mountain this lode can be distinctly traced by the reddish brown appearance of the outcrop as it runs back and up into still higher ground. The tunnel which is said to be eighty feet in length, could not be examined, as the series of ladders by which it was reached have long since decayed. It is about 150 feet above the trail on which there is a heap of ore of several tons. The cabin belonging to this claim—built in a sheltering angle of the rock,—is in ruins.

Still farther along are two more ledges, one of which is seen running up a perpendicular rock exposure for a distance of 150-200 feet. Both these ledges were about five feet broad. There seem to be three, if not more, main systems of veins on the mountain, all of which bear a strong resemblance to each other. These veins throw off leaders or shoots at acute angles. All have the same banded formation* and are composed chiefly of iron with some quartz, showing gouge or selvage on the walls.

Apparently from the wearing away of the outcrops they occupy gorges or crevices of considerable proportions. On the several rockslides tons of float are scattered far and wide, the result of the disintegration of the ledges in times past. The impossibility of entering any of the old workings combined with the presence of gossan on the outcrops formed by oxidation of the ferruginous gangue preclude any cursory opinion as to the origin and nature of the ore deposits.

In conclusion, it is safe to say that conditions have changed so materially in the twenty-five years which have elapsed since the last blast was fired on the mountain as regards the advancement in mining generally, the cheapening of mine supplies, living and labour, the radical changes in transportation and the improvement in metallurgical methods that given a reasonable amount of working capital, combined with skilled management, the mines of Silver Peak might again hold that prominent position in the public ken which they occupied nigh a generation ago.

CENTRE STAR MINE.

GENERAL MANAGER'S REPORT.

THE Centre Star-Le Roi vein is a very strong well-mineralized vein, which, in general, is 20 to 40 ft. in thickness, and has a dip of 70 degrees from the horizontal. The two neighboring properties adjoin each other, and their underground workings are connected. On the west, the Le Roi mine, which is the older of the two enterprises, has now developed the vein for 1,500 feet along its length, and 900 feet in

*They are in some cases an exact reproduction of illustrations by Le Neve Foster of ideal sections of the veins of the Wheel Mary Ann mine—Cornwall.

depth. The ground thus opened up has been found very productive, and has so far given no indication of any decrease of productiveness with depth.

On the east, the Centre Star Mine has developed the vein, speaking generally, for an average distance of 1,000 feet along its length, and to the fourth level, a depth of 431 feet measured on the vein. The main shaft is going down rapidly and has nearly reached the fifth level, located at a depth of 609 feet, measured on the vein. This exploration has exposed two ore shoots, one on the west or main ore shoot, and the other as the east or low-grade ore shoot. Practically all of the pay ore so far discovered, i.e., under present conditions—is contained within the limits of the main ore shoot. The ore of the east or low grade shoot is of an average grade below the present pay limit, but it will be available later on when the costs of mining and treatment are sufficiently reduced. As a rule, the vein exposed outside of the limits of these two shoots is either barren or so low in grade, as to be of no prospective value.

THE MAIN ORE SHOOT.

The main ore shoot is irregular in form, so that its average dimensions and trend will not be clear until the work has extended to greater depths. It appears to have a dimension of 300 to 450 feet along the vein, and is located in the 510-foot space between the shaft and the Le Roi territory on the west. As usual, the vein area included within the shoot-limits carries pay ore in irregular patches or masses, interspersed with barren material or ore too low grade for pay. The different pay ore bodies vary in grade from \$30 down to the pay limit, and range from 5 to 40 feet in thickness. The vein structure is somewhat complicated by numerous dikes and faults.

In the upper levels the shoot has a dimension of 300 feet along the vein, and shows a continuous body of pay ore extending from the surface down to a point between the second and third levels, where it changes into barren material or low-grade ore. At some point between the third and fourth levels, this again changes into pay ore. On the fourth level the shoot has been explored for 450 feet in length, the pay ore bodies so far aggregating over 300 feet of this distance. The block between the third and fourth levels has not yet been explored, and how far the pay extends above the fourth level is at present unknown.

The main ore shoot has yielded almost the entire past production of the mine. This came mostly from the upper ore body, a small proportion having been derived from the shaft and fourth level development work. This production amounts to 31,121 tons, averaging \$17.06 smelter's gross assay value. The average metallic contents were gold, 0.793 ounces per ton; silver, 0.365 ounces per ton; copper, 1.25 per cent. The present mine ore reserves above the third level are estimated as about 100,000 tons, and of an average smelter's gross assay value of \$16.00. As explained, the fourth level ore body cannot be estimated, but its exposures along the fourth level indicate an average smelter's gross assay value of \$12. If it extends to an average height of 50 feet above the level this block will contain 20,000 tons. The ore body is found in the shaft for 30 feet below the fourth level and its dip then carries it away from the

course of the shaft. The fact that the fourth level ore is of lower grade than that in the upper levels is not proof of any permanent change of the shoot with depth. It is probably due to one of the fluctuations usual in the ore shoots of Red Mountain, and it is likely to average up with richer bodies as the shoot is explored to greater depths. In this respect it is not likely to differ materially from the neighbouring Le Roi shoot which is now developed to a depth of 900 feet.

THE EAST OR LOW GRADE ORE SHOOT.

This ore shoot is located about 390 feet east of the shaft. It is explored mainly by old workings, and is also partially developed by the third level. Owing to the fact that only small patches of pay ore have been found within its limits, little effort has been made to define its extent, or to establish the exact average value of its contents by a number of trial shipments. This work was put off to a later date, when reduced cost of mining and treatment would make these contents available. Development, so far, indicate a large ore body, with a dimension of several hundred feet along the vein, and an average grade between \$5.00 and \$8.00, smelter's gross assay value.

DETAILS OF DEVELOPMENT.

First Level.—Same elevation as the top of shaft.

The first or tunnel level is located west of the main shaft. It crosscuts the formation for 100 feet and then follows the vein in ore for 230 feet. The ore is exposed for five and a half feet of its width, averaging \$23.50, smelter's gross assay value. Two crosscuts show a total width of ore of 19½ feet, averaging \$14.40, smelter's gross assay value.

Second Level.—165 feet in depth, measured on the vein.

This level runs west of the Le Roi line. It encounters the ore-shoot 180 feet west of the shaft, and continues in pay ore to a point about 410 feet west. This body is being stoped. The ore is 20 to 40 feet wide, averaging \$16.50, smelter's gross assay value. Three raises connect with the first level above, all being in solid ore of this grade. At 410 feet west, the vein is shifted by a fault, but beyond the fault the pay ore continued for 90 feet to the Le Roi line. This portion is stoped out.

The second level east is an old tunnel, the mouth of which is 870 feet east of the shaft. It cuts occasional areas of low-grade ore, the principal one being the east or low-grade ore shoot located about 390 feet from the shaft. The shoot above the level is exposed more or less by old workings which include a shaft, upraise, and intermediate level, with crosscuts.

Third Level.—304 feet in depth measured on the vein.

The third level west runs to the Le Roi line. From 80 to 140 feet west, crosscuts expose ore 16 feet wide, averaging \$6.00, smelter's gross assay value. At 220 feet west a crosscut exposes ore 34 feet wide, average \$10.00, smelter's gross assay value. At 220 feet west raise No. 386 connects with the second level. The lower half of this raise is low grade, and the upper 60 feet in pay ore. At this point an intermediate drift exposes ore for 135 feet of its length and for its full width, averaging \$16.50, smelter's gross assay

value. Three hundred and ninety-five feet west of the shaft raise No. 387 connects with the second level. The lower part of this is low grade, but the upper 25 feet exposes ore for its full width, averaging \$0.40, smelter's gross assay value.

The third level cast extends to a point 630 feet from the shaft. At 80 feet east of the shaft, a crosscut shows the ore 25 feet wide, averaging \$4.50, smelter's gross assay. From 80 to 120 feet east, the ore exposed for the full width of the drift averages \$4.20, smelter's gross assay value. From 120 to 210 feet, no value. From 210 to 230 feet, \$4.70, smelter's gross assay value. From 230 to 285 feet, no value. From 285 to 375 feet the ore exposed for the width of the drift averages \$7.00, smelter's gross assay value. From 375 feet to 425 feet, no value. From 425 to 590 feet exposes ore for the full width of the level, averaging \$4.75, smelter's gross assay value. From 590 to 630 feet, vein barren. Five hundred and thirty-five feet east of the shaft, raise No. 353 connects with the second level. The lower 26 feet exposes 6 feet of ore, averaging \$4.10, smelter's gross assay value. The upper 74 feet exposes 6 feet of ore, averaging \$8.60, smelter's gross assay value.

Fourth Level.—431 feet in depth measured on the vein.

The fourth level west extends 460 feet from the shaft. The first 88 feet exposes ore 10 feet wide, averaging \$13.00, smelter's gross assay value. From 88 feet to 115 feet is barren. 115 feet to 140 feet exposes ore for the full width of level averaging \$9.40, smelter's gross assay value. At 140 feet, the vein is shifted by a fault. The level after passing through the faulted ground crosscuts the vein at a point 240 feet west of shaft, where it is found 21 feet wide, averaging \$11.50, smelter's gross assay value. 300 feet west of the shaft, the level encounters another fault, on the other side of which the ore has been exposed for 100 feet, averaging 12 feet in width, and \$11.50, smelter's gross assay value.

The fourth level east extends to a distance of 130 feet from shaft. The first 30 feet exposes ore 10 feet wide, averaging \$13.00, smelter's gross assay value. From 30 feet to 60 feet, vein barren. From 60 to 120 feet, the ore is 4½ feet wide, averaging \$4.40, smelter's gross assay value.

480 feet west of the shaft, an old shaft, extended by a winze, has a total depth of 700 feet from the surface.

Fifth Level.—609 feet in depth measured on the vein.

The shaft has nearly reached this level.

GENERAL REMARKS.

At the beginning of the fiscal year, the machinery equipment of the Centre Star mine consisted of a small compressor and hoist, intended for temporary use in maintaining development and a small ore production. A new steam hoist and compressor were ordered, and construction of the permanent plant and equipment was begun. On February 6th it became necessary to temporarily suspend shipments from the mine and cease dividends for the reasons explained in the following letters:

Rossland, B.C., Jan. 16th, 1900.

The Centre Star Mining Co., Limited, Toronto, Ont.

Gentlemen,—The stoppage of War Eagle shipments makes it necessary to also suspend shipments

from the Centre Star mine. As you are aware, the Centre Star hoisting equipment is only temporary, and was intended merely to bridge over the interval until the new machinery and headworks are in place. The minimum tonnage required by the smelter has been made up from the joint productions of the Centre Star and the War Eagle mines. The Centre Star equipment is sufficient to handle its present share of the tonnage, but it is not able to meet the requirements of the mine if a large production is attempted. The new machinery has been greatly delayed by the inability of manufacturers to get their materials on time. Moreover, our construction is being pressed in the dead of winter, in the face of unusual difficulties. It will therefore be several months before the new equipment is in place. Meanwhile we will be able to continue our development and to place it well in advance.

Respectfully yours,

EDMUND B. KIRBY, Manager.

Toronto, 5th February, 1900.

To the Shareholders of The War Eagle Consolidated Mining and Development Co., Limited, and the Centre Star Mining Co., Limited.

Dear Sir,—In accordance with the advice of the management at Rossland, as set forth in the accompanying letters, the Directors have decided to close down the mines for the present. We desire to add that we have every confidence in the future of the mines when the plant, etc., is in good working condition.

Yours truly,

GEORGE GOODERHAM, President.

It was decided to take advantage of the opportunity afforded by the stoppage to make a radical change in the method of employing labor. The costs of mining during the preceding year were very excessive, and it had long been apparent that the principal cause of this unusual expense was due to the inefficiency of wage labor under the conditions prevailing in Rossland. The quantity of work done per man for the wages paid was not satisfactory. Repeated efforts had shown that it was impossible to make any satisfactory improvement under the system, and it was therefore decided to introduce the contract system, whereby miners would be paid according to the quantity of work performed, instead of by the time spent in doing it. On March 12th this system was presented to the employees of the Centre Star, War Eagle and Le Roi mines. At first many of the miners opposed the change, fearing that it would be injurious to their interests. The issue remained unsettled for several weeks, during which the mines were closed. On April 5th the question was settled amicably with the miners, who decided in favor of adopting the new arrangement proposed. As the new system had to be inaugurated by degrees, it was some time before the development headings were fairly under way.

Under the contract system it was necessary to furnish contractors with a steady supply of compressed air for power. A large compressor, which was to ensure this air supply, had been contracted, under penalty, for shipment March 10th. Owing to unusual difficulties experienced by the manufacturers in securing their material, this shipment was unfortunately delayed until June 15th. It arrived at

the mine July 7th, and it was the latter part of August before the installation was completed and tested. During all this period the supply of power was sufficient for development work, which was steadily pushed. It was necessary, however, to defer steady ore production, and shipments did not begin until September 4th.

The reduction of costs effected by the contract system will appear in the cost sheet for the coming year. It does not show in the table of average costs for the past year, published herewith. These are excessive, because most of the work represented there was done under the old wage system. Moreover, it includes the fixed and general expenses during a more or less complete stoppage of nearly three months, and a subsequent period during which little ore was produced. The results of the new system are now clearly established by the work of several months, and the improvement shown is even in excess of what was expected.

In shaft sinking, 129 feet of contract work compared with the last 100 feet under the wages system, shows that the average rate of advance has been increased from 23½ feet per month to the present rate of 47½ feet per month. The cost for drilling, blasting, shovelling and timbering shows a reduction from \$65.30 per foot of advance to \$44.30 per foot. This comparison is on a basis of three shifts (12 men) daily, and a 30-day month.

In drifting, the rate of advance for headings has been increased from the former average of 52 feet per month by the wages system to the present average of 94 feet per month by contract. The comparison is on the basis of two shifts (4 men) daily, per heading, and a 30-day month. The cost of drilling and blasting shows a reduction from \$8.03 per foot of advance to \$5.41 per foot.

In stoping, by contract the average ore broken per man per shift for the month of September is 14.4 tons. The former average, under the wages system, was 4.3 tons. The cost of drilling, blasting and explosives for the same period was 37 cents per ton of ore broken, against a former average of 94 cents per ton under the old system.

The results of the new system have been equally satisfactory to the contractors, who have averaged good pay, considerably above the standard rate of daily wages.

The main features of the mine equipment are now completed. They include a 200 horse-power steam-gear hoist, large headworks nearly completed; a large compound condensing steam compressor of the latest design and with a capacity of 3,960 cubic feet of free air per minute; a plant of several small compressors; and a boiler plant of 700 horse-power; a timber framing plant and also a repair and machine show are now under construction. A large amount of work has been done in the way of accessory appliances, water supply, plant for fire protection, ore bins, grading, construction of timber yard, etc., etc.

The rate of production which it is desirable to maintain from the mine is fixed by the amount of pay-ore reserves in sight. The importance of not

having ore extracted faster than it is exposed by the new development is self-evident. If, as is probable, the vein continues its productiveness at lower levels; the present rapid progress of development work should so increase these reserves that it will be possible to increase the rate from time to time.

It must also advise that, as soon as convenient, a suitable reserve be accumulated in the treasury. This is necessary to tide over the emergencies to which mining is always subject, such as fire, accidents, fluctuations in the ore shoot, additional plant, etc., etc.

In conclusion, I must add that we have been fortunate in securing the aid of an unusually able and energetic staff, and I take pleasure in expressing my appreciation of their earnest co-operation. The chiefs of departments are Mr. Carl R. Davis, E.M., mine superintendent; Mr. Alfred C. Garde, M.E., mechanical engineer, in charge of construction and machinery, and Mr. Charles V. Jenkins, in charge of the accounting and purchasing.

Respectfully yours,

EDMUND, B. KIRBY, Manager.

Comparative Statement of Work Done and Its Cost, General Expenses Included, Per Foot or Ton, to September 30th 1900.

	Oct. 1st, 1898, to Sept. 30th 1899.		Oct. 1st, 1899, to Sept. 30th, 1900.	
	Work done Ft. or Tons	Total Cost. Ft. or Ton	Work done Ft. or Tons	Total Cost. Ft. or Ton
DEVELOPMENT WORK.				
General Work, Stations, Re timbering, Machinery				
Repairs	348	\$12,221.38	228.5	\$4,216.50
Sinking—Large Shafts	3,410.5	10,641.98	903.5	26,529.81
Sinking—Small Shafts or Winzes	371.5	15,275.81	603.5	50,066.07
Raising	2,375.5	56,669.59	2,431.	64,942.85
Drifting				
Total Development Work	3,410.5	\$138,179.92	3,666.5	\$106,124.25
ORE PRODUCTION.				
Ore from Development Work, Sold, Tons	63.5		4,034.94	
Ore from Development Work, Storage, etc.	6,533		20,459.85	
Stopped Ore Sold				
Total Ore Sold	6,596.5	\$19,054.59	24,534.89	\$73,591.27
SUMMARY.				
Expense of Development (per ton of ore sold)	6,596.5	\$138,179.92	24,534.89	\$105,124.25
Expense of Ore Production	6,596.5	19,054.59	24,534.89	73,591.27
Total Expenditure	6,596.5	\$154,234.51	24,534.89	\$228,715.54
		\$23.38		\$6.73
		\$40.49		\$3.00
		2.89		\$3.99
		\$1.91		\$3.00
		\$2.89		\$3.00
		\$24.534.89		\$9.71

TOTAL HEADINGS OF CENTRE STAR MINE
September 30th, 1900.

	SINKING.		Raising.	Drifting.
	Main Shaft.	Small Shafts and Winzes		
	FEET	FEET	FEET	FEET
Distance from present mouth of main shaft to point where sinking began.....		3.5		
Portion of shaft length included in old tunnel.....	14.5			
Total measurements to Sept. 30, '98		1019.		3528 5
Advance of headings, Oct. 1, 1898, to Sept. 30, 1899.....	344.	319.5	371.5	2375 5
Development for litigation.....		110.		679.
Advance of headings, Oct. 1, 1899, to Sept. 30, 1900.....	228.5	103.5	903.5	2421.
Development of mine.....		40.5	242.	178.
Total mine development.....	590.5	1442.	1275.	8325.
Total development for extralateral litigation with Iron Mask Co.....		150.5	242.	857.
Total headings of the mine Sept. 30, 1900.....	590.5	1592.5	1517.	9182.

TABLE OF MINE COSTS

For Twelve Months Ending September 30th, 1900.

	DEVELOPMENT WORK.				Ore Sold.
	Sinking Main Shaft.	Sinking Small Shafts.	Raising.	Drifting.	
Total advance, feet.....	228.5	103.5	903.5	2421	
Ore stoped, tons.....					20490
COST PER FOOT.					
Drilling and Blasting.....	\$ 24 70	\$20 13	\$16 77	\$ 7 25	\$ 0 70
Explosives.....	4 39	5 19	4 06	2 45	11
General Mine Supplies.....	2 78	1 47	1 76	92	12
Mine Lighting—Candles.....	74	41	47	25	3
“ Electric.....	90		17	20	2
Smithing.....	1 99	1 90	1 94	77	8
Trimming and Shovelling—Direct.....	10 12		31	74	14
Trimming and Shovelling—Apportioned.....	6 30	5 06	5 01	2 44	48
Timbering—Labor.....	19 11	2 33	5 16	24	43
“ — Material.....	5 31	50	70	5	13
Machine Drill Fittings.....	1 46	1 53	1 83	65	6
General Mine Labor.....	6 90	2 85	3 77	2 11	27
Hoisting, Underground.....	10 44	8 69			
Hoisting, Main Shaft.....	6 57		1 70	1 63	22
Compressed Air.....	3 48	3 26	3 07	1 35	14
Mine Ventilation.....	1 26	50	71	38	5
Assaying.....	12	13	32	24	5
Surveying.....	1 71	50	65	39	4
General Expenses.....	15 35	4 56	7 61	4 76	52
Total.....	\$123 63	\$59 01	\$56 01	\$26 82	\$ 3 59

ORE SOLD.

Stoped.....	20,489.95 tons.
Met in Development.....	4,034 94 “
	24,524.89 “

In addition to above tonnage there are on hand about 8,500 tons of ore, produced mainly from development and accumulated during the suspension of shipments.

BRITISH COLUMBIA ON THE LONDON MARKET.

THE success achieved by the group which controls the British American Corporation and allied companies in connection with the rig in Le Roi No. 2 has been speedily followed by a lamentable reverse. For some time past the affairs of the group have been very freely discussed, but although it was feared that the position of the group was not as satisfactory as might be wished no one apprehended such a crisis as that which characterized the last settlement of the year and has earned for British Columbian properties painful notoriety. The London & Globe Finance Corporation, which as you know, works in conjunction with the B. A. C., in connection with British Columbian matters, caused the first sensation by passing its dividend. Then came another blow. The Le Roi Mining Com., about whose dividend, as was explained in a former letter, considerable doubt existed, held its meeting and “passed” its dividend also. For this latter contingency your readers had been prepared by my last letter, but you will readily understand that the announcement of the inability of both London & Globe and the Le Roi Companies, to pay any dividend at all did not re-assure the market and prices for all classes of shares included in the companies concerned became decidedly depressed. But later events were to be far more sensational than the passing of their dividends by these two companies, and were to produce one of the most serious crises which the Stock Exchange has seen for many a long year.

Late on Friday evening it became known that cheques paid to its brokers by the London & Globe Finance Corporation had been returned, and a crisis was thereby precipitated, which has continued to the present time and has been punctuated by some tremendous falls in prices in the British Columbian and West Australian sections. This will be more clearly seen in respect to the first named department by a glance at the following table:—

NAMR.	Price, Dec. 1.	Price, Thursday, Dec. 27.	Worst price Friday, Dec. 28.	Worst price Saturday, Dec. 29.	Lowest, Dec. 31 to Jan. 5.	Closing Prices, Jan. 7.
Le Roi.....	7½	7½	4½	3¼	5	6
B. A. C.....	16/6	13/3	9/6	10/6	5/	8/
Le Roi No. 2.....	25	23¼	23¼	2	4½	7
Rosland Gt. Western	9 1-16	8	7 15-16	1½	2	3
London & Globe.....	20/	14/	8/	6/	4/3	5/9
L. & B. C. G. Fields.	1½	1¼	1¼	1¼	1	¾
New Goldfields of B.C.	1 7-16	1 1-16	1 1-16	1 1-16	1	1
Ymir.....	1 11-16	1½	1½	1½	1 7-16	1¾
Velvets.....	1¼	1	1	1	¾	16-16

Curiously enough, as has been the case before, British Columbians were to suffer for developments in the West Australian market. The London &

Globe Finance Corporation which has, of course, been compelled to look after its West Australian interests to support this market has of late, owing to financial operations with which I have already dealt, created for itself and its managing director, Mr. Whitaker Wright, a host of enemies in this city. The rigging of Le Roi No. 2 did not lessen the ranks of these inveterate opponents of Mr. Wright and his companies, and for some time past banging tactics have been constantly resorted to, and it has been common knowledge that it was the intention of these gentlemen to "smash" the Whitaker Wright companies. To trace the inner workings of the West Australian market developments would not be very interesting, but to make my story clear I must point out that the incidents in connection with the Lakeview gold mine are entirely responsible for the smash, inasmuch as it was due to the inability of the London & Globe Finance Corporation to pay for a large quantity of shares which it had been compelled to take off the market that the crisis owed its origin. Directly it became known that the London & Globe Finance cheques had been returned a panic commenced. Prices fell at a terrific pace, as will be gathered from a glance at the third column in the above table. On Saturday morning the market opened very early in a most nervous and excited condition, as it was known that the position of these gentlemen who had been acting on behalf of the group concerned would be most critical, and disaster was generally anticipated. Unfortunately these apprehensions proved to be only too well founded, for before one o'clock, the hour up to which defaulters are announced, no less than thirteen firms had been "hammered." Quotations were all the morning very wild, to which West Australian and British Columbian markets recording panic prices. At times it was almost impossible to deal, and values were very nominal. On Monday three more suspensions took place and later on another four firms were declared defaulters, so that altogether twenty firms representing about 40 members of the Stock Exchange have been brought down by the Globe smash. You will see from the table the various movements in prices during the smash and although at the time of writing the hopes that some scheme may be devised by which the group may be extracted from its present deplorable financial condition, the market is still in a very unsettled condition. So far as individual movements are concerned you will be interested to know that Le Rois were quoted at one time at between £3 and £4. British Americans have been dealt in as low as 5 shillings, London & Globes, the speculations of which caused all the trouble were at one moment about 4 shillings, while as for Le Roi No. 2, on the default of the jobber, who has been the market in these shares, the dealers promptly knocked the price down £15 to £20 a share in as many minutes, and although there has been, as I have already said, a recovery from the lowest points, the losses when present prices are compared with those obtaining a month ago are sufficiently startling. Of course, the Le Roi No. 2 price was always purely artificial and due to a condition of affairs described in previous letters, but the collapse of the other shares of the group represents a loss which will be borne by the public. It is one of the most lamentable affairs that has ever been

known in the Stock Exchange and I am afraid will work much harm to British Columbian interests.

The London & Globe Finance Corporation seems to have been operating beyond its strength. For some time past its somewhat unwieldy operations have been attracting critical attention in the city, but it was not thought that it was in such a tight place. It appears to have been unable to realize some of its large interests when it wanted to do so, notably its shares in the Baker Street & Waterloo Railway Company, amounting to £700,000. It is now known that the banks who have been hitherto financing the corporation becoming nervous refused further assistance at the critical moment; the absence of funds at the time when they were most necessary made it impossible for the Globe people to pay for the shares which they had purchased for delivery. The sequel you know!

Immediately on the discovery of their weakness the London & Globe directors issued a notice calling their shareholders together to consider the position and this meeting is being held to-day. The enemies of the group are not even now appeased, for there are several schemes put forward, including reconstruction, voluntary liquidation and compulsory liquidation, by either of which latter processes it is hoped that the whole of the inner workings of the group will be discovered. A petition to wind up the company has also been presented to the courts by one of the Stock Exchange creditors of the corporation. Which of these schemes will be ultimately adopted, it is difficult to say, but from all I can learn the first is not by any means over yet, and further sensational developments are anticipated.

I am pleased to say that the Marquis of Dufferin, who must surely have incurred the displeasure of the gods, finding out that the resignation of the post of chairman of the group might be regarded as a desertion of his post at a critical moment, although anxious to proceed to South Africa to assist his second son who had been wounded in the South African campaign, has since withdrawn that resignation and announced his intention of remaining at his post until he has had an opportunity of facing the shareholders of the companies over which he presides. Which, of course only what one would have expected the Marquis to do in the circumstances!

The panic on the London mining market occasioned by the failure of the London & Globe has not diminished the pay roll in British Columbia by a single man, it has not diminished the output of ore by a single ton, nor has it affected the dividend-earning capacity of a single mine by a fraction of one per cent. It was a purely speculative not an industrial crisis.

Arrangements are already under way for the underwriting of the stock of the Cramp Ontario Steel Co., Ltd., which proposes to erect blast furnaces and a steel plant at Collingwood, on Georgian Bay, in the province of Ontario. The capital stock is to be \$5,000,000, of which \$2,000,000 is to be 7 per cent. cumulative preferred stock. Walter Kennedy of Pittsburg, has been engaged as the consulting engineer, but matters have not progressed sufficiently to permit a statement in detail as to what will be built. It is almost a certainty that one or two blast furnaces will be erected.

COMPANIES PROMOTED BY MR. WHITAKER WRIGHT.*

NAME OF COMPANY.	Promoters.	Capital.	Purchase Price. (Cash or Sh res to Value.)	Shares.		Object of Company.	COMMENTS.
				Par Value.	Price 5th Jan.		
1. Austin Friars Finance Syndicate.....	Mr. Whitaker Wright	£ 1,500,000	£ 5,000	£ 1	£ s. d.	To conduct finance operations and promote companies	Paid no dividends. Was liquidated and amalgamated with the Standard Exploration Co.
2. British America Corp.....	London and Globe Finance.	1,500,000	500,000	1	0 7 6	To acquire options from the London & Globe Fin. Corp.	No dividend of 2s. has been paid (in 1900)
3. Caledonia Copper.....	London and Globe Finance Corp.	750,000	700,000	5	1 10 0	To acquire copper mines in N. S. W.	No dividend has been paid, and no report or accounts issued.
4. Duke Gold Mines.....	W. A. Exploring.	15,000	125,000	1		To carry on exploration works.	Paid no dividends. Was liquidated and amalgamated with the Standard Exploration Co.
5. Fernhill Gold.....	International Mining Corporation.	300,000	250,000	1		To take over gold properties of the International Mining Corp.	Liquidated '99 and reconstructed as Caledonia Mining Corporation.
6. Golden Crown.....	W. A. Exploring.	100,000	75,000	1		To acquire and work a property in W. A.	Paid no dividends. Was liquidated and amalgamated with the standard Exploration Co.
7. Hannan's Golden Dream.....	" " "	150,000	100,000	1		" " "	" " " " " "
8. Hannan's Golden Group.....	" " "	150,000	100,000	1		" " "	" " " " " "
9. Hannan's Golden Treasure.....	" " "	150,000	100,000	1		" " "	" " " " " "
10. International Copper.....	International Mining Corporation	1,000,000	315,132	1		To take over the copper claims of the Int. Mining Corp.	Liquidated '91 and reconstructed as Caledonia Mining Corporation.
11. International Corporation.....	International Mining Corporation.	1,000,000	750,000	1		To take over the business of the Int. Mining Corp. other than nickel, gold and copper.	" " " " " "
12. International Mining Corp.....	Mr. Whitaker Wright	1,000,000	965,500	1		To acquire mining properties in New Caledonia.	Liquidated '97 and assets transferred to Internat. Corp.
13. International Nickel.....	International Mining Corporation.	1,000,000	600,000	1		To take over the nickel properties of the Int. Mining Corp.	Liquidated '99 and sold properties to Nickel Corp.
14. Ivanhoe Gold.....	London and Globe Finance No. 1.	1,000,000	960,000	5	8 10 0	To acquire the Ivanhoe Gold Mine, W. A.	" " " " " "
15. Karaka.....	Austin Friar's Finance.	150,000	125,000	1		To acquire and work a property in New Z.	Liquidated and amalgamated with the Standard Exploration Co.
16. Kootenay Mining.....	London and Globe Finance Corp.	400,000	350,000	5	2 10 0	To acquire properties in B.C.	" " " " " "
17. Lake View Consols.....	London and Globe Finance, No. 1.	250,000	220,000	1	8 7 6	To acquire the Lake View and Boulder East properties.	The shares were "rigged" to 29 in 1890. It is this company whose shares the Globe Corp. has been buying and cannot pay for.
18. Le Roi.....	British Am. Corp.	1,000,000	950,000	5	6 10 0	To acquire the Le Roi mines B. C.	" " " " " "
19. Le Roi, No. 2.....	London and Globe F. and Brit. Am. Cor.	600,000	550,000	5	3 0 0	To acquire Le Roi No. 2 mine.	Shares were "rigged" in 1900 to over £20.
20. Loddon Valley Goldfields.....	London and Globe Finance Corp.	750,000		5	1 10 0	To acquire properties from Victorian Gold Estates	" " " " " "
21. London and Globe Finance Corporation, No. 1.....	Mr. Whitaker Wright	290,000	78,000 (in divid's)	5		To carry on financial and exploration business in W. A.	Amalgamated with the W. A. Exploring and Finance Corp.
22. L. & G. F. Corp. (present Co.).....	" " "	2,000,000	610,000	1	0 6 0	" " "	" " " " " "
23. London & Vancouver Finance.....	Mercantile Co.	100,250	250	1		To enter into an agreement with the Mercantile Co.	A dividend of 2s. was paid in 1897; nothing since.
24. Mahara Royal.....	Austin Friar's Finance.	150,000	125,000	1		To acquire and work a property in New Z.	Liquidated and amalgamated with the Standard Exploration Co.
25. Mainland Consols.....	W. A. Exploring	150,000	125,000	1		To acquire and work a property in W. A.	Paid no dividends. Was liquidated and amalgamated with the Standard Exploration Co.
26. Mercantile Co.....	Mr. Whitaker Wright	750,000	630,000	5	1 10 0	To acquire nickel mines in N. Caledonia.	No dividends, no reports or accounts.
27. Nickel Corporation.....	London & Globe Finance Corp.	750,000	630,000	5	1 10 0	To acquire nickel mines in N. Caledonia.	" " " " " "
28. Paddington Consols.....	London and Globe Finance, No. 1.	175,000	125,000	1		To acquire and work a property in W. A.	Paid no dividends. Was liquidated and amalgamated with the Standard Exploration Co.
29. Paddington South.....	Austin Friar's Finance.	150,000	125,000	1		" " "	Liquidated and amalgamated with the Standard Exploration Co.
30. Rossland Great Western.....	London & Globe Fin and Brit. Am. Cor.	500,000	450,000	1	2 7 6	To acquire the East Le Roi mine.	" " " " " "
31. Standard Exploration.....	London and Globe Finance.	1,500,000		1	0 1 6	To acquire and amalgamate 13 companies.	No dividend.
32. Thames Hauraki.....	Austin Friar's Finance.	300,000	225,000	1		To acquire and work a property in New Z.	Paid no dividends. Was liquidated and amalgamated with the Standard Exploration Co.
33. Victorian Gold Estates.....	W. A. Exp. and L. & G. Finance, No. 1.	350,000	250,000	1	0 17 6	To acquire deep lead property in Vic., Aus.	Funds for carrying on work were supplied by the London and Globe Corp.
34. Wealth of Nations.....	W. A. Exploring.	200,000	150,000	1		To acquire and work a property in W. A.	Paid no dividends. Was liquidated and amalgamated by the Standard Exploration Co.
35. Wealth of Nations Extended.....	W. A. Exploring.	175,000	125,000	1		" " "	" " " " " "
36. W. Australia Exploring and Finance Corporation.....	Mr. Whitaker Wright	200,000	126,750 (in divid's)	1		To carry on financial and exploration business in W. A.	Amalgamated with the London and Globe Finance Corp.

COMPANY MEETINGS AND REPORTS.

LE ROI.

THE directors of the Le Roi have issued the following report:—

"The directors herewith submit the audited accounts of the company from the date of incorporation to June 30th, 1900. There is a balance to the credit of the profit and loss account of £93,369 9s. 2d., out

of which an interim dividend of 5 per cent. has already been paid. The report of Mr. MacDonald, the general manager, is enclosed herewith, together with tabular statements of the working costs and plans of the underground workings. Mr. MacDonald was appointed general manager in December, 1899, in succession to Mr. Carlisle, who left to enter the service of the Rio Tinto Company. After mak-

*London Critic.

ing a thorough examination of the property, Mr. MacDonald instituted a series of far-reaching economics, and recommended development on an extensive plan, and the equipment of the mine with plant and machinery on a scale commensurate with its vast possibilities of output. All this has been done, and the whole of the cost has been defrayed out of the profits of the mine, in consequence of which your directors are unable to recommend the payment of any dividend at the present time. As a result, however, of the policy adopted, the shareholders are today the owners of one of the great mines of the world—a mine that should make very satisfactory profits for many years to come. As a result of the improvements carried out, the output has been materially increased, and is only limited at present by the capacity of the smelter.

"The following are the estimated values of shipments to smelter since June 30th:—

	Tons.	Gold. ozs.	Silver. ozs.	Copper. Tons.	
July	17,300	7,864	15,176	234	\$243,500
August	19,300	7,536	14,200	240	238,000
Sept.	15,830	6,184	10,100	166	185,000
October	16,100	7,466	11,691	201	223,000
Nov. (not stated)		7,086	13,800	208	219,000

"The development of the mine and the general administration have been most satisfactory in the hands of Mr. MacDonald and the directors have great pleasure in bearing testimony to his ability and industry. If any shareholders, who are unable to attend the meeting, desire any information regarding the mine, or any item in the accounts that they do not understand, and will send a written inquiry to the chairman, he will furnish the information in his address to the meeting. Mr. Robert E. Leman retires from the board by rotation, and, being eligible, offers himself for re-election. Messrs. Ford, Rhodes, and Ford, the auditors, retire, and offer themselves for re-election."

Mr. Bernard MacDonald, the general manager, in the course of his report says: "In last January, after having an accurate survey made of the floor areas of the ore shoots as then opened on the various levels. I estimated that the middle vein contained 1,500 tons of shipping ore for each vertical foot—i.e., that if the ore shoots were stoped out for any given height, say, for instance, between two levels 100 ft. apart, the output in this case would be 1,500 by 100 or 150,000 tons. Extensions made since of the floor areas then opened show a large increase in dimensions and the contents of the vein can now be said to very closely approximate 2,000 tons of the average grade of shipping ore for each vertical foot of the vein. When this calculation applies to sections of the vein above or below the 700 foot, and 800 foot levels, where the surveys were made, it is to be assumed that the grade and dimensions of the ore bodies will remain the same as that exposed on the levels named. Between these levels and the surface this may be accepted as a proved fact. Below these levels it is a reasonable assumption, which, of course, awaits the advent of development work of actual proof. In these calculations it should be understood that no account is taken of the ore shoots that may be developed in the north and south veins. As mentioned in this, and more fully described in previous monthly

reports, a very strong ore shoot has already been developed in the south vein, and the presumption is reasonable that other ore shoots will be found in this and the north vein as well. Whatever these may yield will be additions to the above estimate.

"On assuming the management of the mining operations of this company last December, I found that the average output of the mine for the preceding six months had been 280 tons daily, and 257 tons per day for the preceding six months, or an average of 268 tons per day for the preceding twelve months. After making a thorough examination of the mine workings, and thereby becoming familiar with the grade, extent, and permanent character of the vein and ore shoots, I concluded that the output should be trebled with an adequate plant, which would permit of the exploration and development being kept sufficiently in advance of the exhaustive work of stoping. Such a plant has been carefully designed to meet the present and future requirements of the mine, and was purchased after competitive tenders being had from the leading manufacturers of mining machinery in the United States and Canada. This plant is now being installed, and when it is completed the output of the mine can be easily maintained at from 20,000 to 30,000 tons per month. Meantime, there is no difficulty in maintaining the average output of the mine at 600 tons per day with the old machinery. During the first six months of the current year a steady production of ore, averaging 279.5 tons per day, was maintained. The total production for the six months amounted to 51,448.12 dry tons, the gross value of which was \$702,877.22. During the last six months of the current year, owing to labour troubles, there was no ore produced at the mine from February 9th to April 16th, a total of sixty-six days. Notwithstanding this, however, 51,335.92 dry tons of ore were produced, having a gross value of \$738,751.18, the daily production during the time the mine was operated amounting to 442.5 tons. On April 16th the mine recommenced operations after the shut-down, the whole staff and working forces having been reorganized. The object of this reorganization was to bring the production of the mine up to the maximum capacity of the present machinery equipment. Results from the changes made have been exceedingly gratifying, as may be seen from the fact that during the last ten weeks ending June, 1900, since the mine resumed operations, 38,743.19 dry tons, having a gross value of \$557,842.15, were produced, the daily tonnage produced averaging 509 tons, which contained an average gross value of \$7,340.03. This output can be easily maintained with the present plant, and increased to from 750 to 1,000 tons per day when the new machinery is in operation.

Owing to the lack of precise data, it is somewhat difficult to obtain the exact cost per ton for ore production previous to January 1st, 1900. From the recorded information available, however, the cost per ton for mining and loading on railway cars, on the tonnage produced, appears as \$5.55 per ton of 2,000 lbs. During the months of January and February this cost was slightly reduced, but since the reorganization of the working forces was completed a distinct reduction in the per tonnage cost has been brought about, as will be seen by reference to Table 4 of this report. The present cost does not exceed \$2.50 per ton, a reduction of 100 per cent. over the

first nine months of the year. This reduction of cost has been effected with the old plant, and will be still further reduced when the new plant goes into service. It is evident that ore can be stoped and placed on cars for \$2.00 per ton, and the whole mining cost, including mine development, depreciation, insurance, etc., is not likely to exceed \$3.25 per ton.

"The smelting works of your company are located at the town of Northport on the banks of the Columbia River, in the State of Washington, 18 miles from Rossland, over the Red Mountain Railway. The situation is admirable for a large smelting works, as the facilities for economic smelting are very favourable. Abundant deposits of lime of that character required for smelting flux exist in the near neighbourhood of the smelter. In the smelting of Rossland ores 20 per cent. of the furnace charge requires to be lime, hence the importance of having this delivered cheaply at the smelter. The maximum capacity of this smelter is about 650 tons per day, although in continuous operation this capacity cannot be obtained on account of the incapacity of one part or another of the plant; in other words, there is not margin enough of power over the nominal capacity to insure a continuous output at that rate. Additions to the smelting works in the line of machinery furnaces and general equipment of sufficient capacity to bring the smelting power up to 1,250 tons per day are now in course of construction, and will be pushed through to completion as vigorously as possible. Besides the 1,250 tons, there will be space, power and water provided for the subsequent addition of two furnaces of 350 tons each.

THE MEETING.

The extraordinary general meeting of the shareholders was held yesterday (Friday), in the Great Hall of Winchester House, E.C., the chair being taken by Mr. Whitaker Wright.

The secretary pro tem. (Mr. W. B. Mitchell) read the notice convening the meeting.

The chairman said: It is my painful duty to apologize first for the absence of our chairman, Lord Dufferin. You will remember his eldest son, Lord Ava, was killed at Ladysmith last December, and he has just received the news that his second son is seriously wounded, and therefore, his lordship hopes you will excuse his attendance on this occasion for that reason. For the same reason I must ask you to extend to me your forbearance. I have been requested to preside at this meeting at the last minute. I had no time to make any notes, and therefore I have to talk to you *extempore*, and supply you with such data as I can from the facts which have come to my knowledge at the board table. When the British America Corporation first negotiated for the purchase of the Le Roi mine it was known as one of the great mines of the world. It took us many months to acquire the mine in its entirety. The amount of red tape, negotiations, and litigation we passed through before we acquired the property completely it is not necessary to enter into now; but it is more than has occurred in regard to any other property we ever acquired. On obtaining possession of the mine we placed it in charge of Mr. Carlyle, a celebrated Canadian engineer. He examined it and found it was of extreme value, and advised us to open

it out on a very large scale. He found, however, that the timbering of the mine had been neglected, and that the former owners had extracted the ore as rapidly as they could without pushing ahead development and without taking proper precautions for the safety of life. The board instructed Mr. Carlyle to carry out his views and open up the property on an extensive scale, and also to equip it with enlarged machinery. This was carried out to the satisfaction of the directors, but then Mr. Carlyle accepted the appointment of manager of the Rio Tinto mine in Spain. The directors then appointed Mr. MacDonald, who examined the property and confirmed all Mr. Carlyle had said in regard to it, and said the developments at depth were such as to warrant the opening out of the mine on a still larger scale, so that the output could be increased from 250 to 1,000 tons per diem. He also recommended that an elaborate hoisting plant, pumps, and other machinery should be put in to work the mine to a depth of 2,000 feet to 3,000 feet, and also that a large three compartment shaft should be built and timbered to facilitate the extraction of ore in large quantities. Mr. MacDonald was instructed to carry out these suggestions. He took possession of the property a year ago, and he has been actively engaged in its exploitation ever since. The property has been equipped with these new appliances, and to-day the mine is in a position to take out 1,000 tons of ore in place of the 250 tons which could be extracted per diem when we commenced operations. (Applause.) Then the next question was the smelting works. When we took over the property the smelting works at Northport were a separate undertaking, and the old Le Roi Company owned 75 per cent. of the shares in the company, the remainder being the property of the man in charge of the smelter, Mr. Breen. The British America Corporation acquired the Le Roi and the shares in the smelter company, but the British America Corporation transferred to the Le Roi the mine only, because at that time there were certain legal questions to settle in regard to the smelter works and shares. Therefore, it was deemed best not to promise more in the prospectus than we could carry out. The British America Corporation, however, held these shares in trust for the new Le Roi Company, and during the past year we have been enabled to acquire the remaining one quarter interest for the sum of \$300,000, so the whole works are now the property of the Le Roi Company. You will think £60,000 a large sum to pay, but as the profit accruing exceeds that amount every year, you will be disposed, perhaps, to change your views in regard to that, and think the directors made a very good bargain in acquiring the entire interest in the smelter works. We found it necessary to enlarge then in order to treat the vast quantities of ore we have on the dump and at the smelter. That has been done, and we can now treat a thousand tons per day, and in the very near future we shall be able to treat 1,250 tons per day. Your ore bodies are so vast we could treat a great deal more, and probably shall in time, but we do not propose to indulge in any additional expenditure till you have had a series of dividends. (Applause.) At the present moment the dumps are charged with ore, and so are the yards at the smelter. There are probably 50,000 or 60,000 tons of ore awaiting treatment, so it is not for want of ore that

we do not declare a dividend to-day. On the contrary, the position arises from the very greatness of our prosperity. The accounts are made up to June 30th last, but I need not go through the figures showing the amounts of ore returned since then, for you have no doubt seen them in the report. These amounts are still increasing, and the grade of ore is improving. Last month's return averages higher than any previous month. We have reason to believe that all these expenditures will be completed within the next sixty days, and at the end of the current quarter we shall be able to make the first quarterly dividend of a substantial character, and carry them on every three months probably. (Applause.) I think it was stated in the prospectus that from certain estimates made by directors we might expect as much as 25 per cent. per annum on the capital of the company. It is a great pleasure to me to be able to state that for several months past, and at the present time, deducting all costs you are earning profits of 33 1-3 per cent. (Applause.) Of course if we had foreseen that this mine would be developed on so great a scale, and that we should require so great an extension of the plant and smelter works, it would have been policy to have provided a larger working capital at the commencement, but we have had no trouble in regard to money matters, thanks to the Bank of Montreal at Rossland. The entire financing of the company has been undertaken by that bank. The matte leaving the smelter is taken charge of by the bank and shipped to the eastern refinery, and the bank supplies money for expenses. I believe at the present time we are practically even on account, so future profits will be available for dividends in about three months' time. I am not aware that I can say anything further at the present moment in regard to our undertaking. It is thoroughly satisfactory and prosperous, and one of the best in the entire world, and your smelter and refining works will be the second largest in America when the improvements are completed, and they are now nearly finished. So I think before the year is out you will all congratulate yourselves and say "Vive le Roi." (Applause.) I beg to move that the directors' report and statement of accounts as presented to this meeting be received and adopted.

Mr. Leman seconded the resolution.

The chairman invited questions.

Mr. Murray asked for information concerning the ore taken out of the mine. £360,000 worth of ore seemed to have been taken out and only £104,000 accounted for in the profit and loss account. He thought they should have some details of what became of the enormous production from the mine. What was the item advanced against matte and ore at smelter, £104,000.

Mr. Harris drew attention to what he described as the very vague and meagre report presented to the shareholders after waiting two years. They had had a very voluminous report with very meagre information. He complained also of the late issue of the report, and said there was no explanation as to the cost of smelting.

The Chairman—Have you examined the table at the end?

Mr. Harris—It is impossible for us to go through that in the time.

The Chairman—But do not say the information is not there.

Mr. Harris said a paragraph in the prospectus stated that the B. A. C. had acquired control of the Le Roi Mining and Smelting Company of Spokane, so the whole concern was passed over to them according to the prospectus. He wished to know how the smelting charges for the Le Roi compared with those charged to other mines in British Columbia.

Mr. Pearson—Is there any truth in the rumour that our company is about to be amalgamated with the Le Roi No. 2?

Mr. Smith asked if it were true as stated in a British Columbia paper that the Government there were taking action against the Le Roi with regard to the 2 per cent. duty or that there was a difficulty about the title deeds.

The Chairman, replying to questions, said the title of the old Le Roi was the Le Roi Mining and Smelting Company, but it had no smelter. They had to use the title, however, because it was the name of the company. With regard to the question as to the tonnage, accounts of that character, where there were profits on the mine and the smelter, might seem confusing. Smelter profits must be added to mining profits for book-keeping. To get the actual profits they must add the smelter and mining profits together. Then they were always four months behind with their accounts before they got the final returns. The loan referred to was by the Bank of Montreal as against matte. He saw a statement in one of the scurrilous gutter rags that the British America Corporation had borrowed money of the Le Roi, and that that was the reason there was no dividend, or that the London and Globe or the Baker Street and Waterloo Railway had borrowed money. As a matter of fact the directors had never received a sovereign from the mine; all the money had been taken charge of by the Bank of Montreal on their behalf, but from now on the money would come to England. The cost of smelting was now about \$4 per ton, and the average value of the ore was between \$13 and \$14 per ton. As the vein went westward it grew rather richer, but there was no intention whatever of proposing any amalgamation with any other corporation whatever, and there never had been. There had been talk of amalgamating other groups of theirs and building a big smelter at Trail or another place. With regard to that negotiations were going on at the present moment which they hoped to carry to a successful issue in the near future. They had obtained a reduction lately in the railway freight from 75 to 50 cents, and under the new arrangements of the last few months they had saved enough to pay a 5 per cent. dividend. Other economies would be carried out. He had heard that Mr. Mackintosh had been in London lately, but he did not call, and they did not know his business. He was not now a director of the company and had not been for about a year. They had nothing to say against their late colleague but he was engaged in mining operations on his own account, and therefore it was thought better he should not be a director of the Le Roi. Mr. Mackintosh took that view himself, and the directors agreed with him. He knew nothing about the title deeds matter.

A Shareholder—What about the difficulty with the Government of British Columbia?

The Chairman—We have never been advised of any trouble with the Government. I know nothing about it.

Mr. C. J. Sharp complained that the report was not sent out till so late.

The Chairman said that the reports were posted last Saturday, but they could not be responsible for postal delivery at that time. They had one of the most profitable and promising enterprises in the world, and he thought the shareholders might be satisfied with that. (Applause.)

The resolution for the adoption of the report and balance sheet was then put and carried with one dissentient.

Mr. Pearson proposed a resolution of sympathy with Lord Dufferin in his anxiety concerning his son, wounded in the service of his country.

This was agreed to.

On the motion of the chairman, Mr. R. E. Leman was re-elected a director.

Messrs. Ford, Rhodes, and Ford were re-elected auditors, and a vote of thanks was passed to the chairman and directors, and acknowledged.

LILLOOET, FRASER RIVER AND CARIBOO GOLDFIELDS,
LIMITED.

The fifth annual ordinary general meeting of this company was held in London on December 17th, Mr. R. C. Wyatt (the chairman of the company) presiding.

The secretary (Mr. Charles Hill) having read the notice convening the meeting, the chairman said: "At the request of my co-directors I am taking the chair at this fifth annual general meeting, and I am sure I shall be interpreting the thoughts of everyone present in expressing, not merely my own personal regret, but our united regret, at the resignation of our late chairman, Mr. J. Horne-Payne, Q.C. Turning to the balance sheet, you will see that your invested capital still stands on the books of the company at £49,193 15s. 5d., the same figure as in last year's report. The full value of these investments, as you will see from the auditors' footnote, is slightly below this value, which is the value the company paid for them. This is largely due, or I might say entirely due, to the depreciation which has taken place in all gilt-edge securities on account of the increased value of money at the present moment. You will notice in the balance sheet the amount of \$2,000—"loan from bankers." This money was needed for the purpose of developing the Sunshine group, in which we have such an important interest. On the other hand, and on the other side of the balance sheet, you will see debtors for over £2,223, which consist practically of the Sunshine Company's debts for money advanced. If you look, however, at the Sunshine profits and loss account, which has been sent to every shareholder in the Lillooet Company, you will see we had, on September 30th, a stock of ore on hand valued in the balance sheet at £2,555 12s. 7d., or more than sufficient to pay us back the amount they owe us, and to enable us, if we so wish, to pay back the advance from the bank. At the moment of holding this meeting the stock of ore of the Sunshine mine has increased proportionately. In conclusion, I would just refer to the note in the report which refers to the lawsuit which has been instituted by the present board against the promoters of this com-

pany. The directors in this matter have been guided by the very best legal advice, and I am sure the shareholders will understand clearly that, the matter being sub judice, it is impossible and would be most improper on our part, to make any further reference to the matter than that which appears in the report. The offices of the company have been removed from Billiter Street to College Hill Chambers, where we are sharing two rooms with another company. This will enable us to reduce considerably, we hope, in the coming year, the general expenses in London. You will notice in the report that the directors have again waived their fees for the past year. I beg to move; "That the report and accounts for the year ending September, 1900, be and are hereby adopted." Le Vicomte du Peloux seconded the resolution.

The chairman put the resolution, and declared it carried *nem. con.*, at the same time expressing the opinion that the shareholders had acted wisely in adopting this course after the reference he had made to the lawsuit. He then moved the appointment of Mr. Charles Hill as a director. Mr. F. G. Vernon seconded the motion, which was carried unanimously.

DUNCAN MINES, LTD.

The third ordinary general meeting of the Duncan Mines, Limited, was held on Wednesday at Winchester House, Old Broad-street, Mr. Alexander McNab, the chairman, presiding.

The secretary (Mr. George H. White) having read the notice convening the meeting,

The Chairman said: The period covered by the accounts of the company has, as you are all aware, been one of very severe financial depression. From the commencement of this unfortunate war in South Africa, and, indeed, even earlier, the public mind has been in a disturbed and anxious state, and this anxiety has rendered investors reluctant to lay out their money and has specially restricted the dealings in mining shares. These circumstances have made it practically impossible for us to realize any of our holdings at prices which we considered reasonable, so that at the present moment we cannot show any material change in the position disclosed when we met you last year. Owing to the causes I have mentioned, the nominal value of our investments is, of course, reduced, but this experience, I understand, has been that of at least the majority of such companies as ours, and we see no reason to believe that the value of our holdings is really below the figure put upon them last year.

After referring fully to the accounts, etc., the chairman said: There is no doubt that our operations during the year have been much hampered by the assistance we have rendered to the Granite Gold Mines. We lent that company a large sum to enable them to acquire the Poorman properties, and for development, and we have also allowed a considerable portion of the cash price of their original properties to lie over. The Granite Gold Mines was our flotation, and as a matter of policy we felt it incumbent to render that company all the assistance we could consistently with a due regard for the interests of our own shareholders. That company commenced operations under what we were justified in considering very favourable auspices, but, as you know, there is

always an element of uncertainty in mining, and it has so happened that the Granite mine has not as yet realized expectations. The last workings in that mine are at a depth of nearly 300 feet., and in the bottom level a considerable quantity of ore has been disclosed. This can be much more economically extracted through the workings of the Poorman mine, and it is accordingly being left untouched till the connection between the two mines is made. On the recommendation of the engineer who judged it more advisable to work the Granite mine in conjunction with the adjoining Poorman mine, that property was bought in October of last year, and since then it has been worked by the Granite company. There being no working capital for the purpose the mine has had to pay its own development, and has done so well that, after paying nearly all the expences of both mines there are now, we understand, upwards of 7,000 tons of ore in sight above the present working levels. The engineer very strongly advised providing capital of at least £10,000 for the development of this mine at depth and the working of it on a much larger scale, with an output of at least 3,000 tons a month, which we believe the mine could be relied upon to produce.

As regards the Queen Bess mine, we have referred you to the report for the year ending 31st March last, which was duly sent to all of you. At that time the main tunnel, which was being driven at depth, was still some distance from where the ore was expected, from the surveys, to be, but it is now nearly that distance in. A large body of ore was left in the sole of the lowest previous workings, and as a shaft which is being sunk from that working has already proved the continuance of this ore body at a depth of 100 feet. below, we are expecting to hear shortly that the tunnel, which is more than 200 feet. lower still, has also cut it. As soon as the connections are made between the tunnel and the shaft, the management will commence to take out ore from the large bodies in sight through the main tunnel, and the mine will then resume large shipments of its rich ore. The cost of this main tunnel (which has now been nearly sixteen months in progress) has absorbed the returns from the mine, which would otherwise have been available for the payment of dividends. I think, however, that the Queen Bess directors have been well advised in applying the income of the mine for this purpose. When the work is completed, the mine will, I understand, be proved for a period of years in advance, and the shareholders, among whom are the Duncan mines will, I am sure, very shortly have reason to appreciate their directors' policy. As showing our confidence in the mine, I should say that we have left our original holding practically untouched, and we are now, I hope, about to reap the benefit of having waited. I have now to move the adoption of the report and accounts.

Mr. Mitchell seconded the adoption of the report and accounts, which was then put and carried unanimously.

The chairman proposed the re-election of Messrs. C. E. Shephard and C. S. Drummind as directors of the company.

This was seconded by Mr. Bruce-Archibald, and carried.

A vote of thanks was given to the Chairman and

director, moved by Mr. Peal, and the proceedings terminated.

THE NEW BRITISH COLUMBIA DEVELOPMENT CORPORATION.

The annual meeting of the company was held in Leeds, on the 12th inst.

The Chairman congratulated the shareholders on the successful flotation of their first subsidiary, the Emily Edith Mines, Limited, upon which the entire energies and resources of the company had been concentrated for the past three years. The Emily Edith had got a camp and buildings, which were the admiration of all mining men in that part of the country, and this enabled them to obtain the best skilled miners in the district. Seven tunnels were being actively pushed ahead, and recent discoveries had been most encouraging. In one of the upper tunnels a body of high grade ore 7 feet wide, and containing stringers of rich galena, had recently been struck and run on for 15 feet looking as strong as ever. It is expected that the lower tunnel will strike this vein in the course of a week or two, and when this is done it is anticipated that a very large body of ore will be blocked out, and early in the new year it will be necessary to decide upon the class of machinery required for the new mill, which will be erected with all speed. The directors were anxiously looking forward, in the interests of the shareholders, to the time when the Emily Edith would become a dividend payer, as it was from this source that the company would be enabled to distribute a dividend, the corporation having a large holding in the Emily Edith Co. The Chairman stated that he had had an interview a few days ago with Mr. J. D. Kendall, consulting engineer to the Emily Edith Co., who had lately returned from the Colony, and learned that his faith in the ultimate success of the Emily Edith property is as strong as ever. Other properties belonging to the company are showing well under development, and, generally, as the prospects of the company are very encouraging. The management and superintendence in British Columbia are all that could be desired, and the Chairman concluded by moving a vote of thanks to these gentlemen for their services, which was unanimously carried.

The shareholders present were satisfied that the work was being well and economically done, and, after passing a vote of thanks to the chairman and directors, the proceedings terminated.

THE CHAPLEAU MINE.

THE following is a brief sketch of the Chapleau mine, situated in the Slocan Mining District, British Columbia. It lies on the North Fork of Lemon Creek, and is connected by a good waggon road ten miles in length, with Lemon Creek Depot, a station on a branch of the C.P.R., running between Nelson, B.C., and Slocan City.

A ten-stamp mill of the latest and most improved design was erected and completed late last fall and is now running regularly, crushing about 25 tons per diem. A wire rope aerial tramway (single rope system) of the Painter type, is also in operation transporting ore from the mine to the mill.

A dam conserving the water of the North Fork of

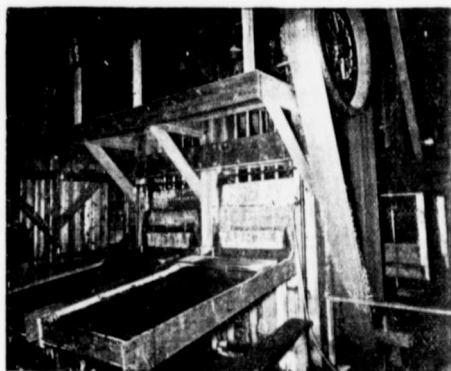
Lemon Creek, and is connected by a good waggon mill site furnishes the water for power purposes. From the dam the water is conducted by a flume to a point above the mill, giving 300 feet of head and generating about 70 horse-power at the mill. The water is conducted in closed pipes from the pen stock at the lower end of the flume and is discharged in the usual way on to a series of Pelton wheels. One



Chapleau Mill and Tramway.

Pelton operates the main shaft running the stamps, a second is geared with two Willley concentrating tables, while a third is belted to the Dynamo.

The mine lies at an elevation of approximately two thousand feet above the mill, and has been developed by a series of drifts along the course of the vein, aggregating some 600 feet in length. The nature of the vein is quartz carrying high silver and gold



Interior of Chapleau Mill.

values and the ore is mineralized with iron pyrites and small quantities of zinc blende and galena.

The mine was at first operated by the Chapleau Syndicate and development having proved the property satisfactory a company was formed by French capitalists to operate on a larger scale and place it on a paying basis. The company is represented in this country by Mr. Lucien Weyl, the acting manager.

THE MONTH'S MINING.

BOUNDARY DISTRICT.

(From Our Own Correspondent.)

THE annual general meeting of shareholders in the Boundary Creek Mining and Milling Company was held at Greenwood on January 17. There was a good attendance in person and by proxy. The report of the directors for the past year and a duly audited statement of accounts were submitted and adopted. Messrs. D. A. Holbrook, D. W. Holbrook, J. W. Nelson and C. Æ. Shaw were re-elected directors and Mr. E. Jacobs was elected

THE BOUNDARY CREEK MINING AND MILLING CO. a director in place of Mr. Hector McRae. A special general meeting followed to consider a scheme —proposed by the London and Canada Syndicate, of London,

England, which syndicate now holds a controlling interest in the local company. It is proposed to form a new company in England with as capital of £75,000 in £1 shares to acquire all the mining property, real estate and other assets and interests of the local company. All the issued shares in the local company would, in the event of the scheme being carried out, be purchased by the new company at 15 cents per share, payable in paid-up stock in the new company. This would give three £1 shares in the new organization for every 100 shares in the old company. It was stated that the new scheme would not be proceeded with unless sufficient capital were available for the payment of present liabilities and the adequate equipment and further development of at least two or three of the company's mineral claims. After discussion a motion was unanimously adopted empowering the directors to sell and transfer the property, and the result of the meeting was cabled to England. The directors met later and appointed Mr. D. A. Holbrook president, and Mr. E. Jacobs, secretary-treasurer of the Boundary Creek Mining and Milling Company.

The particulars of development work done on and ore shipped from, the three leading mining properties of the Boundary District, and the progress made at the smelters comprise the most important mining news there is to chronicle this month. There are, however, other items that may

GENERAL NOTES. prove of interest. Shipment of ore from the Carmi mine, situate well up the West Fork of Kettle River, commenced during January. The owners of the mine have undertaken to deliver 1,500 tons of ore to the Standard Pyritic Smelter at Boundary Falls. There has been delay in getting the road into passable condition and even now for some ten miles or more there is only a roughly-cleared sleigh road over which hauling can only be done as long as the sleighing remains good. It is evident that those chiefly interested are confident that the Carmi ore carries high values or they would not commit themselves to so costly an undertaking as the hauling of such a comparatively large quantity of ore fifty miles to Midway, which is the nearest railway point.

The No. 7 Mining Company, organized in New York by some of the larger shareholders in the British Columbia Copper Company, has purchased a power plant for its No. 7 mine, in Central Camp and about seven miles south of Greenwood, and has let a contract for hauling from the Columbia and

Western Railway to the mine the following plant and materials: A straight-line class A air compressor capable of running three to four E 24 drills, two Ingersoll-Sergeant drills, a 100 horse-power horizontal return tubular boiler, a Lidgerwood hoisting engine with 32-inch drum and cylinder 8½x10, three pumps—one No. 5 Cameron sinking, one Northy duplex boiler feed, and one Northy tank pump—one feed water heater, four ore cars, one shaft skip, 500 of three-quarter inch steel wire rope, 1,500 feet of pipe, 1,000 feet of steel tram rails and bricks and other materials. The prospect shaft sunk 139 feet in 1897 is being enlarged to a double compartment working shaft and ore is being stoped at the 60-foot level, the drift of which gains depth as it runs into the hill. The ore is of a silicious character, carrying values chiefly in silver and gold with a little copper and lead. The teams hauling the machinery, etc., up will have return loading of ore for the Greenwood smelter.

Recently reported finds are the opening up of some nice-looking copper ore on the Bruce, owned by Mr. J. C. Haas, of Spokane, and the Stratford Development Company of Stratford, Ontario, situate in Graham's Camp, near Midway, and the finding in a prospect shaft on the Blue Bell claim in Summit Camp of copper-gold ore of a similar appearance to that occurring in the neighbouring and well-known B.C. mine. The Blue Bell, which is under option to a Chicago organization known as the British Columbia and Lake Shore Development Company, is still very decidedly only a prospect. Another recent development, and one of a more satisfactory nature, for the reason that it is at the 100-foot level whilst the two above-mentioned are near the surface, is the cutting on the Marguerite, in Deadwood Camp, of a lode of magnetite ore with values principally in copper with some gold and silver. For about twenty feet the ore is of a shipping grade and for another twenty feet the crosscut is in ledge matter. A small steam plant, including a 30 horse-power upright boiler, a 7x10 Jenckes hoisting engine and a No. 5 Cameron sinking pump, is now at work on this property.

The following figures relate to the three Boundary District mining properties that have now fairly entered upon the stage of regular production of ore. These are the **PRODUCING MINES.** Mines—Graves Syndicate's group (including the Old Ironsides, Victoria, Knob Hill and Grey Eagle, all adjoining mines); the B. C. Chartered Company's B.C. mine, and the British Columbia Copper Company's Mother Lode mine:

Old Ironsides and Knob Hill.—Number of lineal feet of work done in development up to January 1, 1900:

	Sinking and Raising.	Crosscutting and Drifting.	Total.
Old Ironsides	558	1,853	2,411
Victoria	29	1,445	1,474
Knob Hill	277	2,006	2,283
Total	864	5,304	6,168

Work done during 1900:

Old Ironsides	345	703	1,048
Victoria	63	981	1,044
Knob Hill	310	1,190	1,500
Grey Eagle	—	477	477
Total	718	3,351	4,069

Total development work done to January 1, 1901: Feet.

Old Ironsides	3,459
Victoria	2,518
Knob Hill	3,783
Grey Eagle	477

Grand total 10,237

The tonnage of ore shipped from this group, which commenced shipping in July, was:

	Tons.
1900.	
July	2,791
August	3,597
September	9,197
October	12,502
November	17,025
December	19,513

Total 64,535

B. C.—Work done in development:

	Sinking and Raising.	Crosscutting and Drifting.	Total.
To Jan. 1, 1900.	588	1,931	2,519
During 1900.	332	1,584	1,916

Total 4,435

Ore shipments commenced in January, 1900. The tonnage shipped among the year was 19,352 tons, as follows:

	Tons.
January	457
February	883
March	660
April	214
June	1,437
July	1,400
August	1,547
September	2,928
October	3,672
November	2,213
December	3,633

Total 19,352

This statement of the output for individual months, like that of the Old Ironsides and Knob Hill group, will serve to show the progressive character of the ore production.

Mother Lode.—Work done in development:

	Sinking and Raising.	Crosscutting and Drifting.	Total.
To Jan. 1, 1900.	677	1,483	2,168
During 1900.	152	2,857	3,009

Total 5,169

Up to October, 1900 no ore had been shipped from

this mine except about 200 tons sent to smelters for test purposes.

Tonnage sent out during 1900 was as follows:

	Tons.
To September	200
During October	1,140
During November	2,124
During December	2,100
Total	5,564

Installation of a 35-drill air compressor at this mine is practically completed and a large hoisting engine is now being put in. The output of ore will shortly be increased to 300 tons per day.

There are several other mines in the Boundary District which during 1900 together shipped about 10,000 tons of ore, but as they are not maintaining shipments regularly the details given last month are not here. There were other properties pursuing a vigorous policy of development and four or five of these are preparing for a continuous output of ore, to commence in the ensuing spring or summer. It

may be well to explain how the discrepancy between the tonnage of the three producing properties as given now and that given last month occurred. Relying upon the assurances received that the cars averaged 30 tons of ore each, last month's estimates were made up. This month the actual weights as received from the smelter are shown. The difference is not very large, but for the sake of accuracy attention is now directed to it. The estimated tonnage, as published last month was:

	Tons.
Old Ironsides and Knob Hill group	69,600
B. C.	18,500
Mother Lode	5,000
Total	93,100

The actual tonnage, as since ascertained, was:

	Tons.
Old Ironsides and Knob Hill group	64,535
B. C.	19,352
Mother Lode	5,564
Total	89,451

A similar explanation to that given above will account for the difference between the total of the quantity of ore smelted in the Boundary District during 1900, as estimated and published in last month's RECORD and that given below. The first furnace of the Granby Consolidated Mining and Smelting Company's smelter, situate at Grand Forks, was blown in on October 13th. Both have been running continuously ever since and up to January 1st instant had treated 62,387 tons of ore as under. In noting the increase for October and two following months it will of course be borne in mind that for nearly eight weeks there was only one furnace running and therefore two were in operation during the remainder of

the period under review. The quantity of ore smelted during the several months was:

	Tons.
During August (11 days)	2,902
" September	8,753
" October	14,215
" November	18,050
" December	18,467
Total	62,387

The total output of matte for that period was 2,200 tons. This matte averaged 51.6 per cent. copper, with additional values in gold and silver, but to what amount the company is not disposed to make public.

It will be of interest to have the following definite assurance regarding the proposed increase of plant at the Granby Company's smelter. It is intended to double the furnace capacity and to put in a converter, and negotiations to that end are now in progress. The company expect to break ground for the new improvements in the early spring. The superintendent, Mr. A. B. W. Hodges, will leave Grand Forks for Chicago during the first part of February to make the final arrangements for the machinery and to let contracts for its supply. The company contemplates as well increasing its power plant by adding another water wheel and electric generator, each of 250 horse-power. This addition to the electric power plant will give the company a total of 835 horse-power available for its own use, outside of which it has developed 250 horse-power for the use of the City of Grand Forks.

At the British Columbia Copper Company's smelter the sampling mill machinery was started on January 16th and since then a lot of ore has been put through the rock crusher. The furnace was ready for blowing in about the same time, but the arrival of a supply of coke to do away with all risk of having to stop smelting was being awaited before commencing operations. It was anticipated that sufficient coke would be on hand by February 1st to admit of the furnace being blown in about that date.

The report lately circulated by several newspapers to the effect that the British Columbia Copper Company had closed a contract for the purchase of a copper converter will most likely be found to be premature, since at the time of writing the general manager is unable to confirm this report.

Rapid progress is being made towards the completion of the Standard Pyritic Smelting Company's smelter, near Boundary Falls. The furnace and dust flue are about finished, and the boilers, blower and engines in place and the sampling machinery is now being installed, the big steel smoke-stack has been raised and the trestles for the railway tracks over the ore bins are being put up. These works should be ready for operation some time in February.

The mining records and cash receipts at the offices of the Mining Recorders for the Kettle River and Grand Forks Mining Divisions respectively, obtained from official sources are given below. For the purpose of comparison the corresponding figures for the years 1898 and 1899 for the Kettle River Division and for 1899 for Grand Forks are also shown.

MINING RECORDS
AND
RECEIPTS.

Records—Kettle River Mining Division:—			
	1898	1899	1900
Free miners' certificates ..	700	1,407	1,260
“ “ “ (special) . . . . .	..	12	8
Location records, mineral..	581	791	854
“ “ “ placer .. . . .	..	..	27
Certificates of work.	542	712	1,268
Conveyances and agree- ments.	403	497	446
Certificates of improvem'ts	44	57	68
Abandonments	57	50	20
Water grants.	5	15	6
Permits to re-locate.	3	..	..
Records—Grand Forks Mining Division:—			
	1899	1900	
Free miners' certificates.	892	804	
“ “ “ special . . . . .	..	10	
Location records	847	570	
Certificates of work	970	974	
Conveyances and agreements.	637	340	
Certificates of improvements	55	65	
Abandonments	22	8	
Water grants.	2	5	
Permits to re-locate	3	1	
Filings.	275	227	

Cash Receipts—Kettle River Division:—			
	1899	1900	
For free miners' certificates	\$6,963 98	\$7,048 09	
Other mining receipts.	7,276 45	8,067 40	
Total	\$14,240 43	\$15,115 49	
Grand Forks Division:—			
For free miners' certificates	\$5,987 00	\$5,260 30	
Other mining receipts	7,513 15	6,088 30	
Total.	\$13,500 15	\$11,357 60	
Total mining receipts.	\$27,740 58	\$26,473 09	

REVELSTOKE.

(From Our Own Correspondent.)

It is a pleasure to record the fact that a strong Philadelphia company has decided to lease the Blue Jay placer claim in the Big Bend; one payment has been made, and arrangements are being perfected to operate on an extensive scale in the spring. The waggon road from Revelstoke to that district, which was commenced in the fall and suddenly abandoned after a few yards had been constructed (as usual, with Government money, alas!) will, we hope, have some more work done on it this year; we must be thankful for every yard, even if it does cost \$1,000. We shall get there in time, and taxes can always be increased. Still, the Big Bend is luckily not the only mining district which has vast mineral deposits of the greatest value, though it is nearly inaccessible at present. The Lardeau is yet alive and likely to attract much more attention, though it is getting to be pretty well understood now that that is the coming camp. Our old friend, the Nettie L., is working a full force of men, and while the sleighing is good, is shipping out all the ore extracted in the course of development that will bear "freight and treatment." So far scarcely any stoping has been done, as the directors wisely consider it best to make it into a mine first,

rather than ruin it by "picking the eyes out" as has been so frequently done in other cases which your readers will doubtless remember. However, she has passed the infantile stage now.

YMIK.

(From Our Own Correspondent.)

A large force of men are employed at the Ymir, Tamarac, Wilcox and Dundee mines. These mines are the backbone of this section.

The Riblet continuous tramway that is being installed at the Taramac mine is nearly completed; the cables have been placed in position and at the present work is being pushed in erecting ore bins and running a siding from the Nelson & Fort Sheppard Railroad track. It is to be hoped that immediately upon the completion of the tramway that a large force of men be put to work and that ore shipments continue regularly.

The Ymir Gold Mines, Limited, continue to turn out bricks valued at \$40,000 per month. All these bricks are shipped to the United States, either to the United States Assay Office, Helena, or to the Selby Co., San Francisco. The long tunnel that is being run on the property, and which will tap the Ymir lead at an estimated depth of about 1,700 feet is being rapidly run, and by this time next year, all the ore from the stopes will be brought to the mill via this tunnel.

It is again rumored that the Dundee mine has been sold. A new lead has been struck on the property, and it is certainly a true fissure; the width of the lead is five feet with clearly defined walls, and the mineral will average \$24 in all values. A force of men is working this new find.

The Wilcox mine is shipping ore, and average smelter tests give values to the extent of \$53. It is the intention of the management to continue shipping during the winter.

The Arlington mine has a crew of 40 men at work, and some splendid mineral is being opened out. It is thought that a mill will be erected this spring by the management, as they have considerable ore in sight and ready for treatment.

On the Keystone that adjoins the Arlington and which is bonded to Messrs. Finch and Campbell, Spokane, a crew of ten men are working. Here again a splendid showing is to be seen. At present a crosscut tunnel is being run which will tap the shaft lead at a depth of about 300 feet.

The second Relief mine management intend to erect a mill this spring, and they are preparing to take a saw mill in on the snow.

KAMLOOPS.

(From Our Own Correspondent.)

The new year finds mining in this district in a satisfactory and progressive state. During the past year a number of properties have passed into good hands and the affairs of others have been straightened out. It has been the misfortune of this camp that all its banner prospects have for various reasons been shut down for considerable periods.

A further payment of \$11,000 was made by the B. C. Exploring Syndicate on the Iron Mask. Cross-cutting at the 110-foot level has shown the rich bands of ore on the foot wall to be fully as wide as in the

old tunnel from which several carloads of shipping ore were extracted several years ago. Satisfied with this, the manager has decided to sink another hundred feet and a pump has been installed. Crosscutting shows the ore body to be 60 feet in width, carrying four feet of shipping ore and the rest a good medium grade which will be highly profitable when smelting facilities are provided.

Further changes have been made at the Kimberley mine since this property was purchased by an Eastern company. A good deal of work has been done without yielding much return in the shape of ore. At the annual meeting of the company much disappointment was expressed at this state of affairs and the company secured the services of Mr. C. Outhett as superintendent of the property. The new manager lost no time in investigating the showings on the property which were always believed to be promising. Work was started on new lines of development which so far have met with gratifying success. After the first few feet the drift has been in ore, some of which will ship, the average value being \$15.00 per ton. As this drift is all in ore and no cross-cutting has yet been done the full size of the ore body is yet undetermined. This showing will no doubt renew the confidence of the shareholders and enable the management to put on a larger force of men.

Work continues on the Python tunnel and the management believes that the showings already met considerably enhance the value of the property. Some distance is yet required to reach the main lead.

The chief event of the past month has been the re-opening of the Copper King, Cherry Creek. This has always been the leading high-grade copper prospect in this district. Two years ago a two-year bond was given to certain parties who achieved fame by doing some of the most extraordinary development work ever seen in the country. A "corkscrew" tunnel was driven some 400 feet at a cost of nearly \$8,000 without ever getting near the ore body. The people who were finding the money for this ignorant scheme called a halt and deliberately broke the bond to get their undesirable partners out of it. The property then lay idle until the time limit expired, a month ago, when the property was taken over by a local syndicate and Mr. J. Redman took charge. Buildings have been erected and the old shaft has been timbered up and drifting commenced. Some of the finest copper ore ever seen is being taken out and 10 to 12 sacks per day of almost solid bornite besides a large quantity of medium grade ore worth \$20 per ton is being taken out by a staff of four men. More men are to be put on at once and it is expected that a carload of very high-grade ore will be shipped in a few weeks to be followed by shipments of medium grade ore.

Arrangements for the erection of a dredge on the North Thompson are advancing and a number of contracts have been let.

Regular shipments of ore are being made from the Glen iron mine to the Hall Mines smelter, Nelson, and in consequence of pressure of work on this property Mr. J. F. Wells has resigned the management of the Tenderfoot mine, Copper Creek. Mr. O. Redpath, the original locator of the Tenderfoot mineral claim, has been appointed manager in his place.

The large amount of \$10 to \$15 ore now being

shown up is causing much attention to be paid to smelter projects, none of which are as yet far advanced.

SIMILKAMEEN.

(From Our Own Correspondent.)

The year 1900 has seen the great expectations of Copper Mountain realized in one sense of the word, to wit: It has demonstrated that our immense copper-gold croppings also cover immense ore bodies in depth of great commercial value.

Our premier property, the Sunset mine, has reached the 200-foot level with an 85-foot crosscut all in bornite ore that will leave a handsome profit whenever transportation and treatment facilities are provided.

The Lost Horse mine has also only of very recent date encountered a large body of high-grade copper-gold ore. The Olympia, which had ore of shipping grade from the grass roots, is more than keeping its own as depth increases. Other properties, in fact all those that have been worked, are gaining both in quality and quantity with regard to ore bodies.

In another sense, the amount of permanent improvements justified by the large number of mineral locations in this district (there are over 1,200) and the remarkably fine surface showings in general, is sadly disappointing. A close estimate of all work done, tunnelling and shafting, will bring the total amount close up to 3,000 feet, with possibly 1,500 feet more of open surface cutting.

The main cause of this inactivity in real mining is that our section is still a sealed book to the outside world, even to our immediate surroundings, such as Vancouver and the Coast in general, Rossland, Spokane, etc. Were our mineral resources known on the outside, roads or no roads, African wars or China wars, War Eagle or Le Roi slumps, in fact nothing would keep or could keep capital from invading our borders. This country is an empire in itself, with all the varied natural resources that capital and enterprise may look for.

We have copper-gold ores, gold ores, silver-lead ores, iron ores, concentrating ores, all classes, grades and values, and we have coal, lots of it, and we have lime, fine timber, fine water powers, the finest country to build roads, anywhere and everywhere almost, and we have the finest climate in the Dominion.

The copper croppings on this mountain are really immense, in fact they cover the whole surface, and Copper Mountain is the correct name, but development has demonstrated that the ores occur in regular true veins or fissures, with absolutely well defined walls, parallel, and also true as to course and dip.

The widespread oxidation on the surface is plainly a natural forecast of what has and will be found below. The vein matter varies from heavy magnetic iron interspersed with copper pyrites, to fine-grained diorite, with seams and veins of calcite, and feldspah, to very fine-grained diabase, carrying bornite and chalcopryrite. Wherever the workings have passed possible surface disturbance and reached the veins in place the copper values are very uniform; five per cent. copper is a safe estimate. The gold and silver values vary from \$1.00 to \$50 and up in several instances to \$100 and more.

The ores generally are quite soft, drill well, and break better, and will eventually be mined very

cheaply, and treatment, with all the before mentioned raw material and fluxes will also be reduced to the minimum.

The Government has for several years collected quite respectable revenues in the district, some years as high as \$15,000, I'm told, but neglected to provide for roads, bridges, etc., until last August, when several quite handsome amounts were appropriated for roads and public buildings. In about three months the wagon road down the valley will be passable, and give us a direct highway towards the Boundary camps, and south along the Okanagan, but how soon we shall have a road towards Hope and the Fraser River is a question.

SLOCAN.

(From Our Own Correspondent.)

At the present time the mines of the Slocan appear to be confronted with one of those little difficulties which make themselves felt periodically in the history of every mining camp not in a position to reduce its own ore, and therefore more or less at the mercy of trusts and smelter combines such as exist on the other side. A solution of the problem would doubtless be attained in course of time by a process of natural evolution, and it is by no means certain that in the end this would not be more economical than resorting to some temporary expedient less satisfactory in its nature. However, I am inclined to think that too much has already been made of the matter, and that it will not prove so formidable to deal with as many suppose. Details of definite action on the part of the trust are still wanting, and as they appear willing and anxious to meet the mine owners in a friendly conference, it is altogether probable that a small rise in rates is the sum of what is contemplated.

This, of course, is sufficiently serious; but to begin with, it has not yet taken place, and when it does there are other factors which may tend to offset very materially any action of the kind. There still remain other competitors in the field, even outside our own province, and it is well known that a very large proportion of the Slocan product now finds its way direct to local smelters at Trail and Nelson. The C. P. R. to whose manifest interest it is to develop the resources of the district as much as possible, have already disclaimed any intention of standing in with the combine, and have furthermore announced their willingness to lower rather than raise the prevailing freight rates, so that we hope at least for fair play in that quarter.

The discrimination, as everybody knows, is meant to apply only to wet ores, or those carrying a high percentage of lead; but it may not be so generally understood that from the rapid development of dry ore properties and consequent increased tonnage, of this character combined with the improved conditions which now obtain the shipments from the district as a whole are showing a gradual decrease in metallic contents. Thus, the average percentage of lead for the years '95 to '99 inclusive has been as follows: 50.5, 54.8, 45.7, 47.0 and 38.7. A continuation along these lines will tend to greatly simplify the problem of home treatment, but apart from this, it appears to be merely a matter of furnace capacity when the lower grade silicious ores of Rossland will be able to supply all that is needed to treat the Slocan ores economically right here in British Columbia.

Later returns seem to indicate that my original estimate of production for last year erred on the right side in being considerably below the mark; there can now be no question that in tonnage at least the year 1900 will show a record output. Prognostications are so often wrong that but little reliance attaches to them; all being well, however, the Slocan hopes to turn out from forty to fifty thousand tons of ore during the succeeding twelve months.

Ore is being moved rapidly from both the Hartney and the Hewett, and it is not at all improbable that the Emily Edith which has been undergoing steady development for over two years and should shortly be heard from to some purpose, will take advantage of the conditions to realize on several cars which are now ready for shipment.

A project is on foot for driving a monster tunnel through Silver Mountain commencing above Silverton and emerging at or near the town of Sandon. Needless to say the people of this section will welcome such an enterprise with open arms, as being the one thing needed to finally dispel the fast fading illusion that the ores of the Slocan play out with depth.

The Chapleau mill, the starting of which was referred to last month, has so far proven no exception to the established rule where new methods of treatment are involved, or rather old methods for new ore. The saving on the plates is announced as unsatisfactory, which may mean a variety of things of course, and a cyanide plant is to be installed at once with a view to remedying matters. The outcome will be awaited with considerable interest not only by the shareholders in the concern, but by technical men throughout the Kootenays.

RECENT PUBLICATIONS.

THE COAL and Metal Miners' Pocket Book. The Colliery Engineering Company, Scranton, Pa.

The sixth edition of this valuable handbook has been received. The staff of *Mines and Minerals*, the large force of mining, mechanical and electrical engineers connected with the International Correspondence Schools and many other engineers and mine managers have contributed to it. All this material has been carefully sifted, verified wherever possible and combined with the data in the former edition. By careful selection and re-writing or by different methods of presentation, it has been possible to include essentially all that was in the fifth edition and at the same time to add from one-third to one-half again as much entirely new matter, without materially increasing the size of the book.

Oil Engines, by A. H. Goldingham, M.E.: Sporn & Chamberlain, 12 Cortlandt street, New York. The growth in the use of oil as fuel makes this book a timely one. It has been written with the intention of supplying practical information regarding the kerosine or oil engine.

Engineering Magazine: Works Management Number. *Engineering Magazine*, 120-22 Liberty street, New York.

The January number of the *Engineering Magazine* contains over 300 pages and deals especially with the problem of works management. The classification and compilation of the matter and the method by which the problem is attacked and a flood of light thrown upon an obscure and different subject are beyond all praise. It was once said of a writer that his

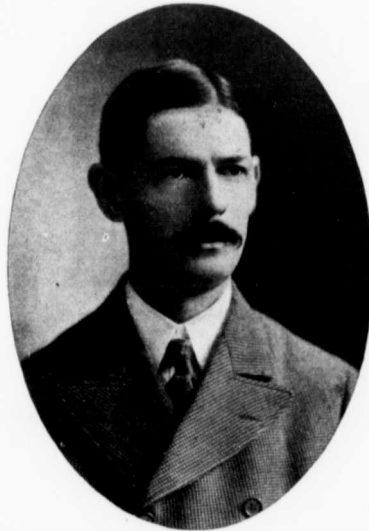
chief title to fame was that he could make articles upon political economy interesting. But what shall we say of a publication which can derive a literary and artistic triumph from the cost sheets of a manufactory. To read the *Engineering Magazine* is to realize that an industrial civilization need not necessarily be contrasted with every other kind of civilization and with the common meaning of the word itself.

TRADE NOTICES.

E. P. ALLIS CO.

THE consolidation of the branch office of the Edward P. Allis Company at Butte, Mont., with that at Spokane, Wash., brings to the service of the company's patrons in the Northwest and British Columbia Mr. H. V. Croll as local manager. Mr. Croll is essentially a mechanical and mining engineer; but the office will be prepared to take care of all business and inquiries relating to the various lines of machinery manufactured by the company.

This branch office, located at 110 Mill street, will be equipped to handle the entire business of the com-



Mr. H. V. Croll.

pany which comprises flour mills and their equipments, mining machinery, engines and power plants, also saw mill machinery. Mr. Croll informs us that owing to the vast amount of business the company has been compelled to turn away owing to its inability to make quick deliveries during the past three years, the company has purchased a tract of land of 100 acres just outside of Milwaukee where a new plant of the most modern type will be erected and when completed will have a capacity for employing 10,000 men, and take rank among the largest and most complete institutions of its kind in the world.

The completion of the new plant will be pushed with all the speed possible and it is expected that by June of 1901 the company will be shipping machinery from the new plant.

The Edward P. Allis Co. furnished all the machin-

ery for the smelting plant of the British Columbia Copper Co., now nearing completion at Greenwood, B.C.

A. LESCHEN & SONS ROPE CO.

A Leschen & Sons Rope Co. (whose main office is at 920-922 North Main street, St. Louis, Mo.) has arranged to open a New York office and warehouse at 92 Centre street (corner of Leonard street), New York City, where they will carry a full and complete stock of wire rope and be prepared to make prompt shipments.

This house is the owner and manufacturer of the Leschen Company's Patent Aerial Wire Rope Tramway, an outfit which is used for the transportation of ore, rock, dirt, timber, etc., not only over mountainous, but also over level country. Among several of the principal features of this particular type of tramway is the fact that it loads and unloads automatically, can be operated by one man and the cost of maintenance is infinitesimal, and it is a tramway which has the greatest possible capacity.

COLORADO IRON WORKS COMPANY.

The Colorado Iron Works Company of Denver, Colorado, publishes a neat little hand book illustrating the new metal top Bartlett concentrator to which are added a few practical notes on mill practice and general mill data.

THE TRENTON IRON COMPANY.

The Trenton Iron Company, of Trenton, New Jersey, U.S.A., publishes a tasteful pamphlet on "Wire Rope and its application to the Transmission of Power, etc." It is of a technical character and gives a number of useful tables and formula.

THE JEFFREY MANUFACTURING CO.

We are in receipt of a special illustrated catalogue and price list from the Jeffrey Manufacturing Co., of Columbus, Ohio., U.S.A., dealing with chain belting and steel cable elevating and conveying machinery for the sawmill, lumber and wood-working industries.

MINING RETURNS AND STATISTICS.

COAST.

THE output of the Van Anda mines for 1900 was 7,054 tons, an increase of over 100 per cent. on 1899.

The Marble May mines during November and December shipped 900 tons.

SLOCAN.

Since January 1 to January 19, 1901, the shipments from Slocan and Slocan City Mining Division have been as follows:

	Week.	Total.
Payne	67	384
Last Chance	58	129
Slocan Star . . . . .	..	60
Ruth . . . . .	..	39
Bosun	40	80
Hewett	90	260
American Boy . . . . .	..	35
Ivanhoe	43	63
Trade Dollar . . . . .	..	42
Sovereign	15	37
Wonderful . . . . .	..	4
Arlington	90	190
Two Friends . . . . .	..	40
Enterprise	20	20

Hartney.....	20	20
Black Prince	20	20
Goodenough	20	20
Miller Creek.....	20	20
Total tons	503	1,483

Shipments of ore from Slocan Lake points during 1900 totalled 4,930 tons.
From January 1 to January 24, 1901, they were:

From New Denver—	Tons.
Hartney.....	40
From Bosun Landing—	
Bosun.....	80
From Silverton—	
Hewett.....	300
From Enterprise Landing—	
Enterprise	60
From Slocan City—	
Arlington.....	190
Two Friends	40
Black Prince	20

Total

The Slocan total for 1900 is variously estimated from 31,000 to 35,000 tons.

ROSSLAND.

The shipments of ore from the Le Roi mine for the full year 1900 were 149,246 dry tons, the average value being \$14.15 per ton.

The tonnage of the district for the year was 221,902 tons according to the tables kept by the Rossland Miner distributed as follows:

	Tons.
Le Roi	162,415
Centre Star	41,192
War Eagle	10,278
Le Roi No. 2.....	2,997
Iron Mask.....	2,973
Giant.....	611
I. X. L.....	500
Evening Star	428
Monte Christo	273
Spitzie	155
Iron Colt.....	80
Total.....	221,902

BOUNDARY.

The following is a list of Boundary shippers during 1900 with approximate tonnage:—

Phoenix Camp—	Tons.
Old Ironsides, Victoria, Knob Hill group	68,820
Dominion Copper Camp.....	150
Gold Drop.....	30
Snowshoe.....	150
Wellington Camp—	
Brandon and Golden Crown.....	2,500
Winnipeg.....	1,075
Athelstane.....	1,200
White's Camp—	
City of Paris group	2,030
Summit Camp—	
B. C. Mine.....	18,718
Oro Denoro	60
Brown's Camp—	
Golden Eagle	165
Humming Bird	450

Long Lake Camp—	
Jewel Mine	260
Providence Camp—	
Gold Bug.....	33
Skylark Camp—	
Last Chance	45
Hardy Mountain—	
Yankee Girl.....	70
Deadwood Camp—	
Buckhorn.....	17
Sunset	52
Mother Lode (local)	5,300
Mother Lode (outside).....	250

Total.....	101,375
Miner Graves Properties—	Tons.
Week ending Jan. 2 (two days).....	1,512
" " Jan. 9.....	6,383
" " Jan. 16.....	5,200
" " Jan. 23.....	5,048
Total 23 days.....	18,143
Average per day	788

COAL EXPORTATIONS.

FOREIGN SHIPMENTS FOR 1900.

1900.	N.V.C.Co.	Union.	Ladysmith.
January	32,286	19,788	20,034
February	38,832	17,811	18,807
March.....	37,423	12,483	25,387
April	30,379	13,795	22,873
May	41,286	11,996	27,316
June	39,985	21,107	36,440
July.....	37,571	8,497	18,982
August.....	41,070	18,070	31,085
September.....	31,997	10,013	24,237
October	32,805	12,371	27,090
November.....	42,132	20,069	20,935
December.....	28,600	3,759	20,479

Totals	440,375	169,759	293,755
Wellington in January shipped 7,811 tons.			
		1899.	1900.
New Vancouver Coal Co	463,109		440,375
Wellington.....	206,422		7,811
Union.....	88,174		169,759
Extension.....	11,386		293,755

Totals

The output of the New Vancouver Coal Co. for 1900 was as follows:—

	Tons.
January.....	47,593
February.....	47,128
March.....	52,163
April.....	47,881
May.....	50,674
June.....	52,265
July.....	44,025
August.....	44,817
September.....	37,023
October.....	53,376
November.....	51,686
December.....	51,400
Total	580,031

The exports of coal from Vancouver Island collieries for December were as follows:—

New Van. Coal Co....	28,609	42,132	D	13,523
Ladysmith	20,479	20,935	D	456
Union.....	3,759	20,009	D	16,310

52,847 83,136 D 30,289

For the first two weeks of January the New Vancouver Coal Company shipped:—

Date.	Vessel and Destination.	Tons.
4—	S.S. San Jose, San Francisco.....	1,896
2—	S.S. New England, Alaska.....	63
5—	S.S. Tellus, San Francisco.....	3,650
7—	S.S. San Mateo, Port Los Angeles.....	4,237
9—	S.S. Robt. Adamson, Portland, Ore.....	800
9—	S.S. Titania, San Francisco.....	5,687
11—	S.S. Mineola, Port Los Angeles.....	3,244
13—	S.S. New England, Alaska.....	63
14—	S.S. Milton, San Diego.....	4,574

Total..... 24,214

THE METAL MARKET—JANUARY.

SILVER.

SILVER is considerably lower in price in the absence of buying orders. The effect is only temporary and will not permanently interfere with the steady appreciation of the metal. The average price for December was 64.14. During January it has varied from 63 to 61½. The month closes at the lowest quotation.

COPPER.

The market in Europe is depressed. American home demand is well maintained. Lake, 16½; electrolytic, 16½.

LEAD.

The market has improved but prices are unchanged. New York price 4.17½@4.37½.

THE LOCAL STOCK MARKET.

(Furnished by A. W. More, Broker, Victoria.)

SINCE last report several B. C. mining stocks have fluctuated very much. For instance War Eagle has fallen from \$1 bid to 60 cents bid with sales at that figure, but it has rallied again to 78 bid, and 82 asked.

Payne dropped down to 50 asked and 45 bid, but has rallied to-day to 63 asked and 56 bid. Centre Star has fallen from \$1.40 asked and \$1.30 bid to \$1.25 asked and 95 bid but has since recovered to \$1.35 asked and \$1.30 bid. North Star remains steady, to-day's quotations being 90 asked and 84 bid. Cariboo-McKinney has fallen to 40 asked and 37 bid.

Several advances have taken place, namely: Iron Mask has advanced from 32 asked and 30 bid to 44 asked and 42 bid; Rambler-Cariboo from 26 asked and 25 bid to 33 asked and 31½ bid. Granby smelter has advanced to 45½ asked and 43 bid, and Crow's Nest to \$75 asked and \$65 bid, Fairview sold as high as 4 cents; a month ago it was selling at 2½c. Giant sold as high as 5c.; a month ago it was selling at 2c to 2½c. Giant has been one of the largest sellers in the West owing to the rumour that ex-Governor Mackintosh had bought control for an English company. The mine was closed down shortly after this rumour and the stock is again declining. Iron Mask

has been in very great demand and as already quoted, has advanced some 10 cents during the month. This stock is held in very wealthy hands and it is just rumoured that a sale is about to take place, but the insiders deny this report.

Rambler-Cariboo has also been a large seller and seems to be getting into strong hands. The stock is advancing at present and has gone up 6½ cents during the month. Morrison has been another stock that has been in very great demand and the stock has doubled in value since the 1st of January with large sales at 100 per cent. advance during the month. Winnipeg is selling freely in the West at advancing prices and is a great favourite in the West although not in much request either in Toronto or Montreal. Waterloo has been selling in considerable quantities both in Victoria and Spokane. White Bear has been a heavy seller, with sales at 5c. but to-day it is quoted at 4½c. asked and 4½c. bid.

The outlook for mining in British Columbia looks very bright and brokers look forward to a very active stock market during the year 1901.



[L.S.]

HENRI G. JOLY DE LOTBINIERE,

CANADA.

PROVINCE OF BRITISH COLUMBIA,

VICTORIA, by the Grace of God, of the United Kingdom of Great Britain and Ireland, QUEEN, Defender of the Faith, &c., &c., &c.

To Our faithful the Members elected to serve the Legislative Assembly of Our Province of British Columbia, at our City of Victoria—GREETING.

A PROCLAMATION.

WE, H. A. MACLEAN, } WHEREAS We are desirous and resolved, as
Deputy Attorney-General, } soon as may be, to meet Our People of
Our Province of British Columbia, and to have their advice in Our Legisla- }
ture:

NOW KNOW YE, that for divers causes and considerations, and taking into consideration the ease and consideration of Our loving subjects, We have thought fit, by and with the advice of Our Executive Council to hereby convoke, and by these presents enjoin you, and each of you, that on Thursday, the twenty-first day of February, one thousand nine hundred and one, you meet Us in Our said Legislature or Parliament of Our said Province, at Our City of Victoria, FOR THE DISPATCH OF BUSINESS, to treat, do, act and conclude upon those things which in Our Legislature of the Province of British Columbia, by the Common Council of Our said Province may, by the favour of God, be ordained.

IN TESTIMONY WHEREOF, We have caused these Our Letters to be made Patent and the Great Seal of the said Province to be hereunto affixed: WITNESS, the Honourable SIR HENRI GUSTAVE JOLY DE LOTBINIERE, K.C.M.G., Lieutenant-Governor of Our said Province of British Columbia, in Our City of Victoria, in Our said Province, this seventeenth day of January, in the year of Our Lord one thousand nine hundred and one, and in the sixty-fourth year of Our Reign.

By Command,

J. D. PRENTICE,

Provincial Secretary



PROVINCIAL SECRETARY'S OFFICE.

17th January, 1901.

HIS HONOUR the Lieutenant-Governor in Council, under the provisions of the "Land Registry Act," has been pleased to establish at the City of Nelson in the County of Kootenay, a District Office for the Recording of Instruments and Registration of Titles affecting real estate, situate within the County of Kootenay.

The name of the said registration district shall be the Kootenay Land Registration District.

Henry Fry McLeod, of the City of Nelson, Solicitor, has been appointed to perform the duties of the said District Office, which shall be open for the transaction of business on and after the second day of March, 1901.

By Command,

J. D. PRENTICE,

Provincial Secretary.