

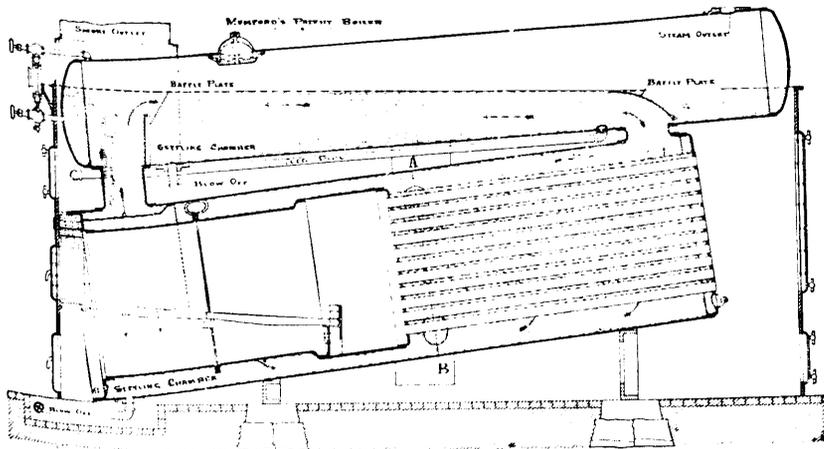
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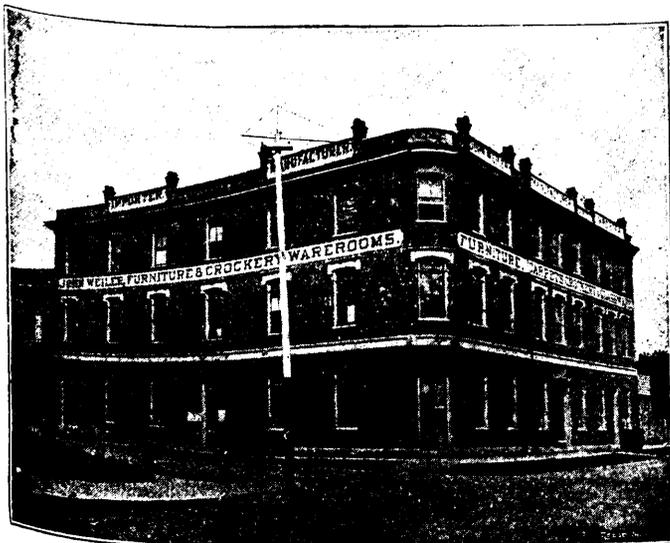
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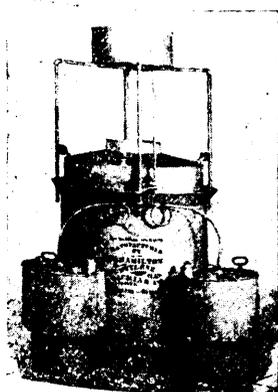
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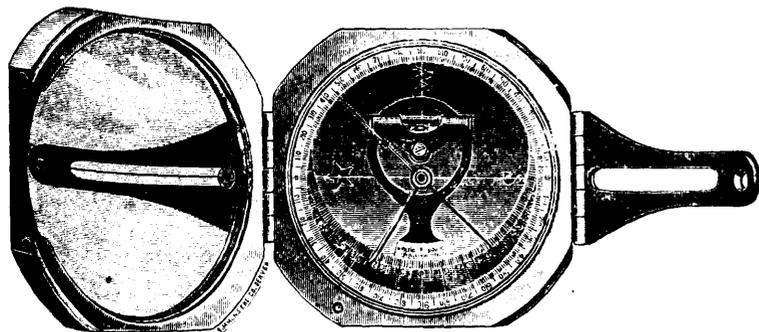
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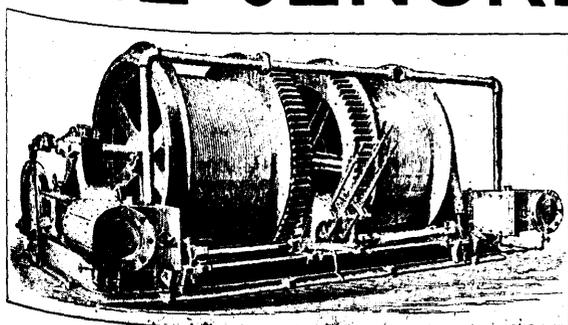
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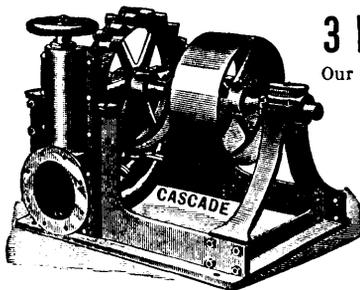
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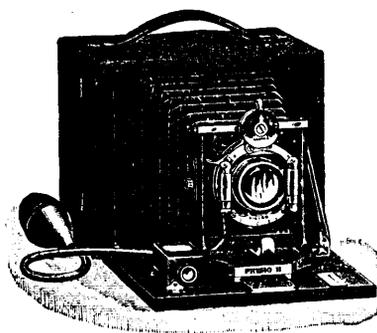
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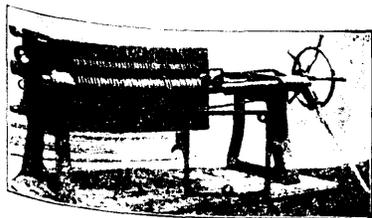
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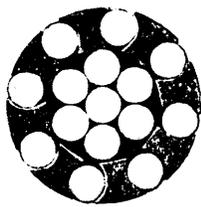
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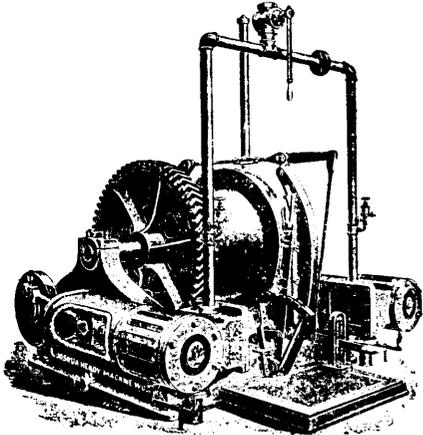
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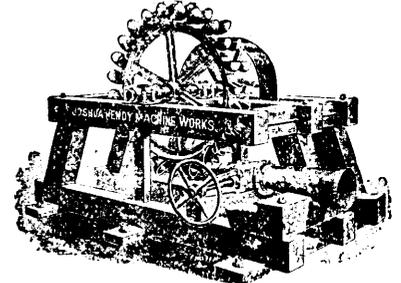
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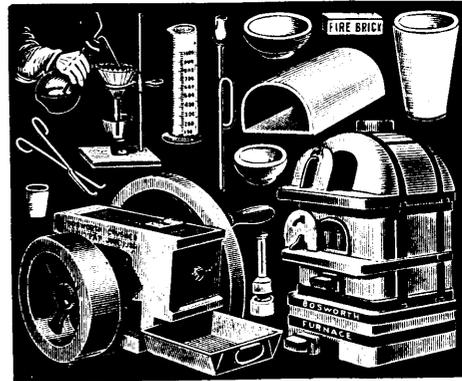
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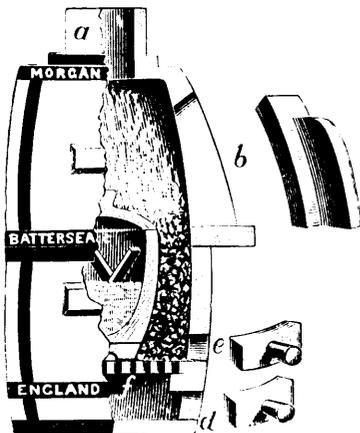
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The Mining Record.

Vol. V.

FEBRUARY, 1899.

No. 2

BRITISH COLUMBIA MINING RECORD.

Devoted to the Mining Interests of British Columbia.

PUBLISHED BY
The Mining Record Limited Liability.
ADVERTISING RATES ON APPLICATION.

H. MORTIMER LAMB, *Managing Editor*,
Vancouver Office: W. T. STEIN, Board of Trade Rooms, Hastings St.
London Office: Leadenhall Buildings, London, E.C.

SUBSCRIPTION TERMS:

Canada and the United States, one year - - \$2.00
Great Britain and Foreign, " " " " 2.50

All communications relating to the editorial department
of the British Columbia MINING RECORD to be addressed to
THE EDITOR, B.C. MINING RECORD,
P.O. Drawer 685, Victoria, B.C.

All communications relating to the business department
of the British Columbia MINING RECORD to be addressed to
the
BUSINESS MANAGER, B.C. MINING RECORD,
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THE MONTH.

PROBABLY no legislative enactment introduced by any British Columbia Government of recent years has created more wide-spread attention than the measure, which has now become law, amending the Placer Mining Act in such a manner as to prohibit the acquisition of placer gold mining claims by aliens. Already in the United States many indignant protests have been raised, the Seattle Chamber of Commerce and the two Houses of the Washington State Legislature even going to the lengths of passing resolutions calling the attention of the President of the United States to this "unfriendly legislation," with the request that the matter be submitted by him to the Ottawa Government with a view to its suspension; furthermore, "that the other States of the Union be and they are hereby requested to co-operate with the State of Washington in preventing or obviating this proposed unfriendly legislation." While we do not, for reasons we shall presently state, altogether endorse the passage of the Act excluding aliens from working or acquiring rights in our placer fields, it is interesting to note that the action of the Provincial Legislature has already resulted in the emanation of suggestions from our Southern neighbours having special reference to the desirability of an interchange of favours with us, and for the arrangement of these upon a reciprocal basis. Whether, however, these doubtless conciliatory hints will lead to anything more definite remains to be seen, and it will then be time enough to consider if in consideration of the removal of, for instance, the heavy duty imposed by the United States Government upon the product of our West Kootenay silver-lead mines when exported to smelters in that country, the present law excluding Americans from our presumably

rich placer diggings of the Atlin and other northern districts, should be repealed. At the least this should be the price demanded for the concession, for the mere extension of privileges to British subjects—such as Americans have long enjoyed in this Province,—of mining in the United States could not now be regarded as an equitable *quid pro quo*. The present Placer Mining Act, as amended is, though radical, an eminently fair measure. By its provisions no aliens already holding placer mining rights in the Province will be disturbed or dispossessed, and thus the large interests held by Americans in Cariboo cannot be affected, applying as the Act does exclusively to ground sluicing operations. The Act, moreover does not in any way interfere with the introduction of capital for the larger schemes of dredging and hydraulic, for which expensive machinery is required, and while, as we have before pointed out, no information of a thoroughly reliable or scientific nature has yet been received concerning the formation extent and disposition of the Atlin diggings, all reports seem to agree that even richer gold values are found in the bench up-lands than in the gravel beds of the streams, and that the opportunities for engaging in profitable hydraulic working in this district are therefore exceptionally good.

On the other hand, the passage of the Act will necessarily largely limit and restrict prospecting and other work in northern British Columbia, so long as it remains operative, which we do not anticipate, by the way,—will be for any great space of time. It will also result in a considerable loss of business to the Canadian coast cities' outfitting trades, for experience taught Americans last year, during the Klondike excitement, the economy and other advantages of purchasing supplies in the Dominion; and to enforce the Act the Province will, for the maintenance of the police and administrators, be put to no small expense, deriving at the same time a less considerable revenue from the payment of fees and tax dues, than would have been the case had the influx of Americans to Atlin this spring and summer at all equalled the rush to Yukon of last year. Nevertheless, the Provincial Government is certainly to be congratulated upon having pursued a bold and a doubtless far-seeing course. We are too small a population at present to directly benefit from the exclusion of aliens from our placer diggings, but it can do no harm to allow our neighbours of the Great Republic to understand for once that we can sometimes administer as well as swallow the medicine whereof they have drawn up the prescription, and there is no saying but that this self-assertion on the part of the Province may lead to the establishment of a relationship upon still more cordial terms and a fairer exchange of mutual favours between the people of Canada and their cousins of the United States. Such a consummation is indeed to be devoutly wished.

The "annual" prospectus just issued by the British Pacific Gold Property Company, Limited—a Canadian enterprise—is in its way quite a remarkably original production, certainly bearing no more resemblance to the orthodox printed circular regularly sent out by enterprising London promoters, and which the British householder has become so accustomed to receive and digest with his matutinal coffee and toast, than a blue-book on diseases among cattle is like a French novel. This prospectus, in short, is not a poor flimsy affair of a folded sheet, but a veritable booklet of some twenty or more pages, containing much material that would not be amiss if embodied in a scientific magazine article. Overlooking, however, this tendency towards verbosity, the prospectus of the British Pacific Gold Property Company is in many respects a model one, and we question if in any concern promoted in British Columbia greater or better provision has been made to afford protection or to safe-guard the interests of shareholders. Meanwhile some of this company's innovations are very well worth noting. As is known many English companies operating in this Province—and for that matter in other quarters of the world—have been very seriously handicapped by the large sums expended for administration. Not only do the directors at home receive in fees or salaries remunerations utterly disproportionate to the services they render, but in many instances a quite unnecessary expense is incurred in maintaining an office staff of clerks or others, many of whom not infrequently owe their appointments solely to the fact that they are relations or friends of influential members of the Board of Directors. In the case of the local company, whose prospectus we have before us, the administrative expenses are as nearly as possible nominal; the Directors perform their duties gratuitously, the office expenses are closely limited, and hence, practically all the money that is subscribed will be devoted entirely to the carrying on of actual mining operations. Shareholders, moreover,—and this again is a departure for a Canadian company—it is promised, are to be regularly informed every sixty days, or at least every quarter, with regard to expenditures and of the progress of work at the Company's properties, by the distribution of special certified reports from the engineer in charge. This, together with the fact that the Company has engaged the services of a thoroughly honest and capable expert adviser entitles the enterprise to a very favourable consideration. The seemingly excessive figure of five million dollars, at which the company is capitalized, however, is open to adverse criticism, but this and the Western method of selling shares at a discount is rather ably explained and defended in the prospectus. For instance, in defence of the method of placing treasury shares on the market considerably below their par value, it is urged that the most successful mining corporations organised in the United States adopted it, and an illustration is given of the Homestake Mining Company, of South Dakota, whose capital was twelve and a half million dollars, the par value of the shares being a hundred dollars, but which were first issued at about \$3.50. That was twenty years ago, but since then over seven million dollars have been paid in dividends to shareholders, and the shares are now worth fifty dollars. "It is," we are told, "merely a question of issuing treasury

stock at its recognized value on the market, as in competition with other stocks and shares, or at its speculative value, provided the operations of the Company are successful and profitable. A study of stock quotations during the past decade reveal that as many, if not more, shares sold as treasury stock at a discount have increased in value, though they may never have reached par, as those issued at par."

As regards the high capitalisation, the explanation is given that "it was considered very important by the promoters, as the stock was 'non-assessable,' that the capitalisation should be sufficiently large to guard against that contingency which so often arises, i.e., lack of working capital and of means of raising the same. The operations proposed were not those of an ordinary mining company, i.e., the taking over of one claim or group of mines, to work the same and rely thereon for success or failure; but to acquire several prospects in any desirable district, or districts, and develop them up to the point where 'ore in sight' warranted the placing of them before the public by subsidiary companies, the profits from such transfers to be divided amongst the shareholders of the present Company." And certainly by the provisions that dividends, when declared will only be upon shares actually issued, and by a novel resolution passed by the Board of Directors, by and on behalf of itself and the promoters, not to participate in any dividends, until the amount by each purchaser of the Company's "stock at the market price of ten cents per share, or more, as the case may be, has been returned to him in full," remedy the evil of high capitalisation in this case at any rate. Meanwhile, of the Company's assets little can be said at present. Several apparently fair prospects have been acquired in several districts of the Province, including a very promising copper claim now under development in the Clayoquot district on the west coast of Vancouver Island. But the plan upon which it is proposed to acquire and open up new mineral ground is perfectly feasible and there is no reason at all, why, with a careful and economical management, the operations of this Company should not prove remunerative.

The total output of the year 1898 of ore from the Rossland camp amounted to 116,697 tons, which had a gross value of \$2,804,758. Of this amount the Le Roi contributed 56,000 tons; the War Eagle, 42,779; the Iron Mask, 3,500; the Centre Star, 2,907, and the remainder (Poorman, Monte Christo, Velvet, Cliff, Giant, Sunset and Deer Park) 1,511 tons. The value of these shipments was:—\$1,532,388, Le Roi; \$1,047,027, War Eagle; \$131,460, Iron Mask; \$59,592, Centre Star, and \$34,300 the others. This includes all values—gold, silver and copper. The gold values taken alone amounted to \$2,042,048, the copper \$620,549 and silver \$136,167. The average values of these ores are as follows:—Iron Mask, \$37.56; War Eagle, \$23.57; Le Roi, \$23.22 and Centre Star \$20.50. The shipments were distributed between the Trail, Northport and Hall Mines smelters, the Trail smelter receiving 48,000 tons, the Northport smelter 67,000 and the Hall Mines 1,500. The Silica reduction works obtained 300 tons from the War Eagle in addition. This merely shows the product of the camp. But there must be added the amounts paid for assessment work, which figures up to \$150,000 on claims that have not as yet

been Crown granted. Nor does the output show the amount of development work performed. This amounted during the year to 33,500 feet, sinking, raising, drifting and cross-cutting. The pay roll of the camp extends to 1,250 men; or nearly double that of the previous year. The town paid the Customs in 1898 upwards of \$113,000, beginning with \$4,280 in January and finishing with \$13,288 in December. The record month was November, when \$14,467 was collected. The value of the machinery put in position on the various mines cannot be placed less than \$180,000. Besides this there has been a great deal of money spent on mine buildings, offices, etc. The B. A. C. have spent upwards of \$15,000 on building apart from that necessary for the housing of men and machinery on their various properties. This may seem extravagant at a first glance, but when it is remembered that this corporation have also performed some 9-10,000 feet of development work it simply fits in accordance with the other records of the camp.

In reviewing the above figures, especially those relative to the output, and to the average value of ores, the conditions under which these records have been gained must be taken into consideration. For instance, the troublesome litigation over the Le Roi resulted in the mine's output being very considerably reduced. Again, the shutting down of the Trail smelter early last year has reduced the returns from that source. Further, the disabilities attendant on shipping over the narrow-gauge between Rossland and Trail have been in the latter half of the year exceptionally great. The C. P. R. intended to have the broad-gauge in operation before Christmas. This, owing to various causes, they have not been able to do. Meanwhile the plant on the old narrow-gauge having run down that line is no longer equal to the task of carrying all ore ready for it.

Then, when the values of the ores is compared with those of previous years, a falling off is perceptible. This is inevitable, but must not be put down to the Rossland ore decreasing in real value. The reduction of the freight and treatment charges from \$11 to \$7.50 and to \$7 only when the daily shipments average 175 tons per diem from any one mine has allowed ore of a poorer quality, but yet still distinctly pay ore, to be shipped at a profit. And again, the installation of the West Kootenay Power and Light Company has meant, and will mean much more in the future, a vast cheapening in the cost of production. Connections with the Bullion Works at Silica, the War Eagle, Iron Mask, Big Three, Mascot and others, including the Trail smelter itself, are being and have been made. Further, the introduction of cheap coal in the camp from Crow's Nest and also from Lethbridge, has also its influence on production. And when the better railway facilities are taken into account, lessening as they will the cost of living, it is easy to foretell that the average values of Rossland ores will fall yet more.

This, of course, means that many thousands of tons of ore on the various dumps will obtain a commercial value, and the output of Rossland instead of being confined to a few mines with comparatively high grade ore will be swelled by the contributions of many others which the reduced charges will have put on the list of shipping mines.

With characteristic energy Rossland has re-opened its School of Mines, having recently engaged an old

McGill man, Mr. J. C. Gwillim—to whom the MINING RECORD is indebted for several valuable technical articles dealing with the Slocan—to deliver a regular course of lectures to those attending. There are three centres—Rossland, Nelson and Sandon—where mining schools should be established and supported by the Government, as here students would be enabled to study not only the theory but the practice of metallurgical work. It is to the fact that students receive mine instruction in practical mining working at the Cambourne School of Mines, in Cornwall—its management having actually purchased a developed mine for the express purpose—that its scholarships are so much more highly esteemed than those of other and like institutions in Great Britain.

The big Canadian machinery corporations, Messrs. Wm. Hamilton & Co., and the Royal Electric Company, report business in West Kootenay, and particularly in Rossland, as being exceptionally good at the present time. With the extensive development work that is now being carried on in all the mining districts of Southern British Columbia, the demand for machinery is rapidly increasing and will unquestionably continue to do so. In Rossland alone last year, it is estimated that the value of the machinery installation was approximately \$200,000.

A correspondent asks if there is any good or sufficient reason why the Centre Star mine at Rossland, for which so large a price was recently paid, should not now be making regular shipments, and why Messrs. Gooderham and Blackstock are still carrying on the development of the property when nothing else but this has been attempted for the past three years. Surely, he opines, this mine should now be in almost as good a position as Le Roi or War Eagle as regards its ability to ship ore.

The *British Columbia Review*, of London, England, does well to warn British investors that the Kootenay correspondence of the *Toronto Globe*, which is sometimes quoted in English financial papers, is all on the "boom" line, and by no means to be taken without more than the proverbial grain of salt. Some of the prospective mine profit figures suggested as regards Rossland, by the *Globe's* correspondent multiply several times the probable results, as estimated by cautious local observers.

An agitation, necessarily restricted to the churches, has been commenced in Nelson to prohibit Sunday work in British Columbia mines. While we do not at all anticipate that the undoubtedly well-meaning people responsible for this movement will be taken seriously—for indeed the Sunday closing of mines in Kootenay would mean a serious loss to both mine-owners and employees—it may be mentioned that legislation of this character has recently been enacted in New Zealand, and the statutory enforcement of six days' labour is already a matter of fact. We have not yet been able to ascertain how this somewhat arbitrary law is received by mine-proprietors in this far distant Antipodean Colony, excepting only the naive admission that in the principal gold fields of the north, it has created "some irritation."

The declaration by the Ruth Mines Company, Ltd., of aggregate dividends for the year of 22½ per

cent., as the result of a profit yield of £27,933 should do much to open the eyes of British investors to the possibilities of silver mining in this Province, especially in such districts of it as the Slocan, which is admittedly one of the richest silver-lead regions in the world. Good dividend-payer as the Le Roi mine has been, its profits have been moderate as compared with those of the American owners of the Payne, a silver-lead property. Now, if the Ruth Mines Company continues its present successful beginning, that undertaking will also show the solid value that there is in a well-proved silver mine of the Kootenay, despite the depreciation of the white metal.

The South Kootenay Board of Trade has protested in advance against any Provincial legislation that would aim at extending to quartz lode mining, the prohibition that has just been applied to the alien ownership of placer claims in British Columbia. It is true that the Mining Committee of the last Provincial Legislature recommended a general prohibition of alien ownership of precious metal mines in this Province, but the House did not pass any such restrictive legislation and the recent decision to exclude hydraulic gold mining from the operation of the Alien Exclusion Act shows that the present Legislature will not carry further the recently passed tentative measure, which applies only to placers.

Lord Herschell and Sir Louis Davies have, however done well to assure their American fellow members of the Intercolonial Commission, that the recent legislation of British Columbia was not intended to "force the hands" of the United States' representatives on the Commission. This is sufficiently proved by the fact that this British Columbia legislation is, as we have shown, the greatly narrowed sequel of an anti-alien claim ownership recommendation made by the Mining Special Committee of the Provincial Legislature in 1898.

The greatest pressure is being brought to bear on the Semlin Ministry at the instance of Japan and through the Colonial Secretary and the Dominion Government, in order to cause the Provincial Government and Legislature, not only to abstain from the proposal of legislation to prevent the Japanese employment in underground collieries in British Columbia, but also to repeal other Anti-Japanese labour laws. If British Columbia should accede to the requests made, not only will the Japanese largely exclude white labour from important Island collieries, but they will also most certainly, ere long, invade with their very cheap labor the mines of the Kootenay country. Then there will be trouble with a vengeance, for the white miners will not calmly endure their supersession by Mongolian competitors in the labour market. The question is all important for white labour in British Columbia, as the Japanese, who, in Hawaii can even oust the cheap-working Kanaka natives, can undoubtedly take the places of a host of our white workers, by accepting half their wages. And it certainly is neither socially nor nationally desirable to enable many parts of British Columbia to become congeries of Japanese settlements. British Columbia needs a sturdy population of the Western type, preferably of Canadian, British and American origin in the main. It is all very well to seek to minimise the risk of a Japanese immigration on a large

scale, but facts show that the risk is really serious, for Japan has a large surplus population amongst her 43,000,000 subject, who increase yearly by 30,000 or so. Two million Japanese at least usually live on less than 20 cents a day, under conditions approaching semi-starvation. The assisted emigration of many thousands of these to British Columbia would prove an easy matter for Japan and to such immigrants wages of even 60 cents a day here would seem a grandly liberal provision, as these men can and do, like the Chinese, live mainly on rice and vegetables, and spend little on clothes or housing.

Mr. A. W. Smith, the member for West Lillooet, in the Provincial Legislature, has fairly earned the thanks of his constituents and also the gratitude of all interested in the welfare of legitimate mining in this Province, by the outspoken and trenchant criticisms to which he gave utterance from his place in the House, in reference to the Golden Cache fiasco. Mr. Smith stated that the maladministration of this company and its consequent failure had exercised a most injurious effect on the standing of British Columbia's mines abroad; but while this is indubitably the case, the circumstance that the representative in Parliament of the residents of the district in which the Golden Cache mine was situated, has thus entered so strong a protest, in conjunction with the wholesale denunciation certain members of the Golden Cache Directorate received at the hands of the Provincial press, will, we trust, at least assure "outside" investors that British Columbians, as a people, do not countenance or approve of the methods such as were employed to first boom and then maintain the price of the Golden Cache shares at the fictitious value at which they were held.

Among the prospectuses we have received this month is one of the "Dominion Consolidated Mines Company, Ltd.," of Fairview. This concern has been floated to acquire the "Dominion," "A.D.C.," and "Fairview,"—said to lie along the lead of the "famous" Smuggler Mine,—and other claims in this camp. The capital is placed at \$500,000, divided into 2,000,000 shares of 25 cents each, the first 1,000,000 shares being placed on the market at 10 cents. Of the claims themselves little can be said at present even if one accepts unreservedly the statements of the prospectus, but as prospects in the first stages of development the showings are undoubtedly promising. On one property owned by the Company, the "Black Hawk," work has already commenced, and here, according to a smelter test made in July last, the ore averages \$24.07 per ton. We are, moreover, told that "six months will be required to develop this property sufficiently to make it a regular dividend-payer." It is not stated how large the dividend or how regularly it would be paid, and, of course, statements like these must be taken with a very considerable grain of salt. Apart from this, the venture has every appearance of being *bona fide*, and specially admirable features are to be noted in the fact that no salaries or fees are to be paid to directors or officers until the Company's operations yield a profit over operating expenses, and, furthermore, that all money realised from the sale of stock—other than 800,000 shares transferred to the vendor in lieu of cash for the properties mentioned—is to be devoted exclusively to the working of the mines.

Owing to somewhat untoward circumstances, together with the usual absorption of gold from the use of new plates, the result of the first run of the Smuggler mill at Fairview has not proved very satisfactory. The management, however, hold very hopeful views with regard to the future of this property, based both on the showing in the mine itself and also the comparatively high average value of the ore. It is, meanwhile, a matter of great moment to Camp Fairview that the Smuggler should turn out well, the camp having undoubtedly received a bad "black eye" as a result of misapplied booming on the part of Messrs. Dier, Davidson and Russell, followed by the disappointment occasioned by the poor return obtained from the "Tinhorn" and associate properties with which the name of this enterprising firm was so prominently connected.

Every month now brings fresh news of important transfers of mining property in the Boundary Creek district, and other tidings testifying to the substantial progress and growth that is taking place in this promising section of South Yale. The announcement—the confirmation of which we have received from a reliable private source—that the C.P.R. contemplate the erection of a large smelter at Cascade City, presumably, or rather, necessarily in addition to the building of similar works either at Greenwood or Midway, is to the highest degree gratifying to the "old-timer" in Boundary Creek district, who has staunchly maintained his confidence in the ultimate future of the camp, in the face of every discouragement and drawback, and after some five or six years of waiting thus begins to see his fondest dreams realising. Almost a Klondike "rush" in miniature it may be expected will take place this spring to Boundary Creek, and already prospectors and miners from the Slocan and other West and East Kootenay districts are migrating thither in large numbers.

Now that placer mining in this Province has been restricted to British subjects, the question of the establishment by the Government of one or more official assay offices is brought more prominently to the front, in order to obviate all necessity for the departure of our Atlin gold miners from this Province to Seattle or San Francisco, and to secure certified official tests of the values of their dust and nuggets.

The proposal to raise the Yukon royalty exemption limit from \$2,500 to \$5,000 will do something to relieve the placer mine owners who work their own claims, single-handed. These must, however, gradually become comparatively few, and already there are large numbers of hand-worked placers that call for so much cost in employed labour, as to render of comparatively small value over exemption up to \$5,000 work of gold. The ten per cent. royalty will, moreover, continue greatly to deter hydraulic effort in the Yukon by companies employing large capitals at considerable risk, yet without the extended operation of the work of such extensively capitalised concerns, the best of the Yukon country cannot, in the opinion of experts, be systematically and satisfactorily worked. Sir Charles Tupper's opinion is in this respect undoubtedly correct, and he should know as well as most, what possible British investors think of the high Yukon royalty, which compares so unfavourably,

as operating in a much harder and more hazardous country, with the rather less than one per cent. net levy of British Columbia on the gold output of Atlin and other placer country in this Province. A specious plea adduced in defence of the present Yukon royalty is that it makes a levy on aliens. Those who make the plea forget, however, that the duty applies also to the many British subjects who own or work claims in Klondike and tells specially hardly on hydraulic companies that are in most cases either English or Anglo-Canadian and not American in origin.

The association of the name of the great Canadian explorer and present Administrator of the Yukon, Mr. Ogilvie, with that of a more or less doubtful joint stock company venture—the British Canadian Goldfields of the Klondike, Limited—to which our London correspondent refers at some length this month, has naturally created much sensation both in this country and in Great Britain. In Canada, however, Mr. Ogilvie has many staunch friends and admirers who refuse absolutely to believe that he is in any way guilty of having abused the confidence implicitly placed in him by both the Government and the public generally. It is meanwhile very likely enough, however, in view of the alleged Yukon official scandals of last year that it will be considered advisable to ask Mr. Ogilvie to explain the nature of his so-called connection with the English company. This, undoubtedly will be the most effective way of dealing with the matter, the true explanation of which most probably will prove to be that certain general information, and perhaps even tracings of maps, was given by Mr. Ogilvie to the promoters of the British Canadian Goldfields of Klondike at the time of his visit to England last year. At any rate, it is obviously absurd to imagine that Mr. Ogilvie, who had he so desired, could have become a many times millionaire in the Yukon during a residence there of some years, should have left the land of gold to seek, in so round-about a way as is suggested, a fortune in London.

A speech lately made by Major Walsh at Brockville, Ont., in which he advocated the cancellation by the Dominion Parliament of the Canadian charter of the White Pass and Yukon Railway, cannot be taken seriously, as no Government of Canada would dream of thus impairing the national credit by an act which would be virtually confiscatory of large amounts of British as well as American capital. Such a speech, however, shows that it is just as well that Major Walsh has as Administrator of the Yukon been replaced by Mr. Ogilvie, for the proper occupancy of the post far more discretion than that of which the gallant Major's address showed that gentleman to be possessed is required.

Reports are current this month of the discovery of platinum deposits on the Hootalinqua River, near Teslin Lake. What reliability can be placed on these rumours we are not prepared to say, but at least it is known that in his report on the Yukon Dr. Dawson announces having found platinum in small quantities in the beds of streams in several localities visited by him. The demand for platinum at present greatly exceeds the supply, and the price which thirty years ago

was but \$4.50 per ounce and seven years ago \$7.50 per ounce is to-day in the neighbourhood of \$16 per ounce.

The *Engineering and Mining Journal*, of New York, without doubt the leading and most thoroughly reliable technical publication in existence, published early this month a special number devoted nearly exclusively to statistics and the position of mining throughout the world general. Amongst the information thus given is a tabulated comparative resume of the yield from the gold producing countries, of which the Rand is now the chief with a production of 3,554,746 fine ounces, having a monetary value of \$73,476,600; the United States taking second, instead of as for the preceding year, first place, with a yield of 3,110,788 fine ounces, and the seven Australasian Colonies third place with 2,945,426 fine ounces. Next is Russia, whose gold production is valued at rather more than twenty-five million dollars, Canada being fifth on the list with an output representing fourteen million dollars, as compared with six million dollars worth of gold produced in 1897. The gain in Canada was, of course, largely the result of the Yukon discoveries, but apart from this a very considerably increased gold production is to be credited to British Columbia for 1898. The total production of the world last year is estimated at 13,805,407 fine ounces, or the equivalent of \$286,218,954 as against a worth of \$237,332,456 in 1897. This increase our contemporary attributes to the cheapening of production by improvements in mining methods and metallurgical practice; the diversion of attention from silver mining to gold mining, on account of the decrease of profit in the former; the increased profit in gold mining in countries whose finances are on a silver basis; and the growing tendency of capital to seek investment in gold mining as an industry which aims at the production of a metal that, nominally at least, is not subject to market fluctuations. Of the countries themselves the most substantial gain was, however, made by the Transvaal, notwithstanding the irksome restrictions placed on the industry by the Boer Government, for as a London paper remarks, "the more Mr. Kruger puts his foot down the more gold appears to be crushed on the Witwatersrand." And while this is somewhat rough on Mr. Kruger, whose understanding is certainly not unduly limited, it is, nevertheless, true that last year the gold mining companies on the Rand paid no less than the enormous sum of £4,820,000 in dividends to their shareholders, or over 25 per cent. of the gross output of their mines.

The work that has been conducted at the Dorothea Morton mine, Shoal Bay, during the last two months has resulted in the satisfactory demonstration of a very important fact, e.g., that certain ores met with on the west coast of the British Columbia Mainland are amenable to cyanide treatment. The gold-silver brick brought down from the mine this month and valued at several thousand dollars, represented the result of some six weeks' work, under extremely disadvantageous circumstances, such as was to be expected from the first use of new appliances and machinery. Mr. Lang, the Fairfield Syndicate's manager, was furthermore handicapped by the non-arrival of the expert who had been engaged to superintend the operations, and the fact, therefore, that with employees

quite unaccustomed to work of this character he was successful in recovering eighty per cent. of the ore values from the several hundred tons of rock crushed, is to the highest degree creditable to himself. Mr. Lang is our authority for the statement that ore from the Dorothea Morton mine of as low a grade value as six to seven dollars to the ton can be profitably mined when treated with cyanide. And, perhaps, the significance of this fact will be more fully realised when it is stated that by ordinary methods of smelter reduction no ore from this district could be mined having a lesser value than from eighteen to twenty dollars to the ton, the cost of mining, sacking, shipping and smelting being at the lowest computation sixteen dollars per ton. It is hence gratifying to know that not only is the Dorothea Morton claim itself showing up excellently well as development work proceeds, but in the same vicinity there are numerous other properties upon which similar ore bodies indicated by promising surface showings are being exploited; and in consequence of the Fairfield Syndicate's enterprise a very considerable development and mining activity may be looked for during this year in the Shoal Bay and Coast Mainland districts.

We are given to understand that while the Government has not yet definitely decided to decline the offer of space from the promoters of the Greater Britain International Exhibition scheme whereby the Province would be afforded the opportunity of making a display of its minerals in London this summer, the information that has been received by the Minister of Mines with regard to the nature of the undertaking is not likely to lead to the proposal receiving a more favourable consideration than has already been accorded it. Thus it is given out that the Greater Britain Exhibition has been planned more for stock jobbing purposes than on the broader lines, as would seem to be suggested by its name. Moreover, the space offered to British Columbia is, we learn, inadequate and at the same time for this a very large rental is asked. Under these circumstances it is at present considered that money could be spent to better advantage and that the Province would receive a more direct benefit, if by deferring the matter for another year, a really good and representative display of minerals from British Columbia is made at the great exposition that is to be opened in Paris in 1900 to mark the beginning of the new century.

The news that the Dominion Government will shortly consider the advisability or otherwise of extending the present telegraph system from Quesnelle to Telegraph Creek and thence to Dawson, should "give pause" to Yukon telegraph company promoters in England. There would scarce seem to be profit-earning scope for more than one well-appointed telegraph service between British Columbia and Dawson City.

At the adjourned annual meeting of the Golden Cache Mines Company, Limited, held in Vancouver on the 26th of January, the Directors were obliged to report that the attempt to raise further funds by the issue of debentures had not been successful, attributing as a reason the suit brought by Dr. Carroll against the Company. The chairman, Mr. Skeen, furthermore stated that unless this suit is withdrawn enabling the disposal of the debentures the Company's

property would be held to pay the Company's debts. As there is little likelihood now of Dr. Carroll yielding his point, this then practically sounds the knell of the Golden Cache, and it, in company with that unfortunate fiasco, the Galena Farm, may be nailed up in the same coffin and occupy the same dishonoured grave. May the inscription on the tombstone serve as a warning to a rash but long suffering public.

The announcement is made that the work of continuing the Crow's Nest Pass Railway from its present terminus at Kootenay Landing to Nelson will be shortly commenced. The construction of the line between these two points is said to be very difficult, but its completion will certainly greatly convenience the travelling public and incidentally add very considerably to Nelson's importance as a distributing centre.

Nelson has every reason to be proud of its new daily newspaper, *The Tribune*, edited by Mr. John Houston, one of the pioneer journalists of Kootenay, and last year Mayor of the town. *The Tribune* has ever been an excellent journal,—fearless, independent and plainspoken. Indeed the editor carries his democratic views to such unusual lengths that when he applies a prefix to a man's name he prints the word in "lower case" letters, as for instance, "mr. Houston or sir Charles Tupper. This, however, does not prevent the *Tribune* from being always most readable.

The Vancouver Chamber of Mines is becoming more and more a "small-room" affair. The office in the Board of Trade Building on Hastings Street has lately, we learn, been removed to the building occupied by Mr. Taggart, who, no doubt, now that Mr. Lawrence has resigned his post, assumes the duties of Secretary,—that is, so long as this inchoate institution remains in existence. Meanwhile, Mr. Pellew-Harvey and others who lent an air of respectability to the so-called Chamber, have severed their connection with it.

Some little time since we alluded to the dismissal of a Mr. Thompson from the position of Mining Recorder at New Denver, expressing regret then that a civil servant, who, from all accounts, performed his duties in an entirely satisfactory manner, should be thus unceremoniously discharged without adequate reason being assigned to the public. This month a very similar instance is recorded, and Mr. J. D. Sibbald, who for the past year has acted as Government Agent and Gold Commissioner in the North Riding of West Kootenay, was requested to resign his office, the Executive Committee having reason to believe that the retention of his services as the representative of the Government at Revelstoke would not conduce to the best interests of the district. It is quite likely that in the case of both Mr. Thompson and Mr. Sibbald, the Government had the best possible grounds for making the dismissals, but, as we have pointed out before, not only in fairness to discharged officials, but also to justify its actions in such cases to its supporters the Government should see the necessity of publishing the cause or causes upon which the dismissal of any person from the public service is founded. Any suspicion of the detestable "spoils system," so much in evidence in the United States, on the occasion of any political change or

crisis is to be deprecated in British Columbia, and we feel confident that the present Provincial Administration would discountenance any attempt to introduce it. Meanwhile, what we have asked is not, we think, unreasonable. Any discharged servant has a right to know why he is dismissed, and this principle is so far recognized by Trades and Labour Unions that a refusal on the part of an employer to assign a cause for dismissing from his service one of their members, would inevitably lead to a general strike.

The Editor takes this opportunity to thank many readers of the *MINING RECORD*, and also such of his fellow journalists in Canada and the United States—particularly the editors of the *Toronto Globe*, the *Montreal Witness*, the *Vancouver World*, the *Vernon News*, the *Leadville Miner*, the *Spokane Electrician*, and others—to whom he is indebted for complimentary and appreciative letters and notices referring to last month's issue of this periodical.

Labour circles in this Province are greatly disquieted by fears, that yielding to Imperial and Dominion Government pressure at the instance of Japan, the Provincial Government may not only desist from passing the proposed popular legislation preventing the underground employment of Japanese in collieries, but also repeal some of the other legislation in restriction of the employment of Japanese on Provincially chartered mining, railroad and other undertakings.

A correspondent sends us the following amusing story, the truth of which he solemnly vouches. It was at the time the prohibition vote was being taken in Canada. A number of men were collected around a polling booth in one of the mining camps near Revelstoke discussing this then all-absorbing topic. Suddenly they were joined by a somewhat shabby but very excitable individual, whose dress and appearance, that of the typical Western prospector, at once betokened his calling. "Boys," he said, "I've struck it at last; look at this, will you? and she's four feet wide if she's an inch." With that he pulled out from the corner of a dirty handkerchief a specimen of quartz, which the crowd having sufficiently admired, he continued. "Yes, I just showed to C— (a well-known local mining engineer), and he says, 'Jack, you're all right; that's as fine a specimen of plebiscite,' as ever I set eyes on."

We have received a few complaints from readers from time to time that the mails do not on occasion bring them their copies of the *MINING RECORD*, with regularity. Not being able always in these case to trace the fault to its source, we have been content to share the blame with the post office authorities. Our contemporary, the *Klondike Nugget*, published at Dawson, has, however, a much more ready way of explaining matters to irate subscribers. "Addresses," it states, "given out in Dawson are often misleading or indefinite. For instance, when the route carrier has to find 'the cabin with the screen door,' or 'the slab-house facing the river,' or 'the big tent with two stove pipes,' or 'the cabin three doors south of where all the dogs are,' he is very apt to travel some little distance before he finds all the people he is looking for."

MR. OGILVIE AND THE PROMOTER.

(By Our London Correspondent.)

WHEN Mr. Ogilvie was in London he led people generally to believe that the last person in the world he would favour would be found in the skin of a company promoter. I was present, in an official capacity, at one meeting and well remember the way in which Mr. Ogilvie "went for" those members of this fraternity who had not hesitated to quote freely from his general reports upon the Yukon in order to make more attractive the particular Klondike schemes by means of which they sought to wheedle British sovereigns from British investors' pockets. Of the sincerity of his utterances there could be no doubt—indeed I can see now the looks of dismay on the faces of several promoters who were present at the London Chamber of Commerce meeting, at the candid way in which the present Yukon Administrator exposed the whole shabby procedure, and the alacrity with which one of them—a member of Parliament, too,—sought to tone down his protestations. Judge then of the surprise at the beginning of the last month of the old year to receive the prospectus of a company in which Mr. Ogilvie was exploited for all he was worth. The title of this concern was the British-Canadian Goldfields of the Klondike, Limited. Capital £275,000 in £1 shares, 250,000 being ordinary and 25,000 deferred. Issue of 100,000 ordinary. The following is a brief description of the chief points of this "Ogilvie prospectus," which, by the by, had as its board the following gentlemen: Mr. J. W. Thackeray, Director Fine Cotton Spinners' and Doublers' Association; Mr. Thomas Honey, Director Buluwayo Syndicate (since resigned, I understand); Mr. R. N. Wood, Director Birmingham Vinegar Brewery Co.; Mr. J. Allen, Director Maudslay, Sons & Field; Mr. L. Kentish-Rankin, Director South African Venture Syndicate.

Formed principally with the object of exploring in the gold-bearing regions of the Yukon and Klondike and the North-Western Territories of Canada; the acquisition of mining properties, with a view to developing or reselling to subsidiary companies; the establishment of trading and transport organizations throughout these districts, and the establishment of a general finance and agency business in British Columbia, with branches in the North-West Territories and the Yukon. The prospectus states that Mr. Ogilvie, Government Administrator of the Yukon district, has given the founders of the Company information as to the best way of locating properties which he knows to be gold-bearing, and has also agreed to give advice and assistance generally to the Company, only stipulating that the undertaking shall be conducted in accordance with the views of the Canadian Government. Mr. Ogilvie has further undertaken to give the directors the benefit of his advice and assistance in the initial work of the Company, which fact the board consider of great advantage. Mr. K. P. Ritchie, a mining expert, has been engaged (with an exploring party), and has been instructed to place himself in communication with Mr. Ogilvie. The founders have agreed to accept 25,000 deferred shares for their remuneration, and will not receive from the Company any cash profit unless ten per cent has been paid on the ordinary shares for any year.

The city editor of the London *Times* in commenting on this precious document, said:

The founders, the Yukon Pioneer Syndicate (Limited), have "agreed to accept as their remuneration 25,000 deferred shares, which will be allotted to them as fully paid;" the nature of the services rendered by them is not made very clear except that they state that they have obtained advice and assistance from Mr. Ogilvie for the company; they do not appear to transfer any properties or concessions to the company.

But to the High Commissioner for Canada this prospectus and the free use of Mr. Ogilvie's name furnished an opportunity for defining the position of Canadian officials in relation to the formation of mining companies, and Lord Strathcona and Mount Royal is to be congratulated upon the prompt way in which he put the machinery in motion to regulate the attitude of the Dominion Government in this matter. The whole subject was dealt with fitly in the following letter forwarded from the High Commissioner to the London *Times* and published by that journal in its issue of Dec. 16th:

TO THE EDITOR OF THE TIMES.

SIR,—I beg to inform you that I have received a telegram from the Minister of the Interior of Canada relating to certain general statements in the prospectus of the above company as to the co-operation of Mr. Ogilvie.

The Minister states that it is contrary to the policy of the Government to permit any of its officers to be connected with companies, and that Mr. Ogilvie's position as Administrator of the Yukon Territory renders it totally impossible for him to be in any way connected with any mining company.

I am authorised to add that the Government has no information that Mr. Ogilvie has signed any prospectus, but that, if he has done so, it must be merely as giving a statement of facts; and that he cannot have given any exclusive information to, or have agreed to advise or assist any company in the sense in which the expressions are generally understood.

I am, Sir, your obedient servant.

J. G. COLMER,

For the High Commissioner for Canada.

In the succeeding issue of the same journal, the Company replied to the foregoing criticism as follows:

TO THE EDITOR OF THE TIMES.

SIR,—The attention of my directors has been called to a letter which appeared in your issue of to-day signed by Mr. J. G. Colmer for the High Commissioner for Canada, and I have been instructed to reply to it as follows:

My directors are not familiar with the policy of the Canadian Government with reference to the action of its officers in connection with companies, but they are sufficiently familiar with the usual methods of Government officials to feel greatly surprised that Mr. Colmer did not communicate with this company before addressing his letter to you. Had he done so he would have been enabled to inspect for himself the documents signed by Mr. Ogilvie, the very existence of which he now seems to call in question. The letter given by Mr. Ogilvie which is referred to in the prospectus of my company was given in May, 1898, prior to Mr. Ogilvie's appointment as administrator of the Yukon Territory. That letter and the original draft prospectus signed by Mr. Ogilvie "read and approved" can be seen at the offices of the company's solicitors by Mr. Colmer or by anyone else who is interested in the matter. It may be, as Mr. Colmer states, that the Government has no information that Mr. Ogilvie has signed any prospectus, but if Mr. Colmer had taken the trouble to call at the offices of the solicitors to the company he could have seen for himself and given his Government the information which it at present lacks.

I am, Sir, your obedient servant,

JOHN P. ELLIOTT,

Secretary.

10 and 11, Austinfriars, B. C., Dec. 16.

Neither Mr. Colmer's letter nor the press criticisms can have helped this Company to secure the capital it required, and although it is always difficult to trace application and allotments, owing to the juggling connected with underwriting, I yet incline to the view that the concern fared badly. But it seems to me that the whole matter ought to be threshed out, and the public informed of the result of the investigation.

THE CROW'S NEST PASS COAL CO., LTD.,
FERNIE, B.C.

(By Our Special Commissioner).

PROBABLY no Canadian enterprise has excited more attention during the last few years than the one referred to in this article, and in consequence of the amount of criticism which has been directed both at the Government which granted the legislation calling this concern into existence, and at those who were most intimately associated with it, we thought it desirable to dispatch a special commissioner, who would have the advantage of being able to note upon the spot what was the extent and

this Canadian enterprise goes very near establishing a record for quick and effective work.

GROWTH OF THE TOWN AND MINES.

On the first of July Fernie did not exist, and the site of the town was a vast virgin forest, with no permanent settlement nearer than Pincher Creek to the east, distance 80 miles; and Fort Steele to the west, distance 70 miles. The supplies had been hitherto brought in either by pack-train or waggon—the latter only recently—a distance of 100 miles; and in the spring, when the trail was broken up by the thaw, much of this freighting cost as high as five cents a pound. It will be seen that under these conditions little progress could be made; but the advent of the



THE TOWN OF FERNIE.

character of the property handed over to this Company, and what progress had been made during the year in placing it in such a position as would enable the promoters to fulfil the very large promises which were made on their behalf to the owners, smelters, and the general public of British Columbia. And, without entering upon any controversial matters that have been raised, we may at once say, that the amount of work accomplished almost passes belief; and if any one goes down to Fernie, B.C., in the expectation of catching this Company napping, they will be greatly mistaken. It is only a year since exploration was commenced upon the coal seams, but practically the operation may be dated from the time the railway reached the mines in July last, and it is only necessary to enumerate briefly the principal work which has been accomplished since that time to show that



MINERS' BUNK HOUSE.

railway changed everything. The virgin forest has been replaced by a well-designed town, containing 1,000 settled inhabitants; avenues and streets have been laid; half of the principal avenue, Victoria, three-quarters of a mile in length, has been built at least two-thirds of the distance; there are first-class hotels, churches, a public hall, stores which would not disgrace an eastern city, and a whole street of modern houses prettily designed, painted, and each standing in its own plot of ground. In addition to this, a water service has been brought from a mountain creek, some three miles distant, and is laid throughout the town; electric lighting and a telephonic service have been established; the streets have been graded, and sidewalks are being planked. Fifty

has been driven, and sufficient working places opened to yield a daily output of 400 tons. Too much cannot be said of the energy and ability of the general manager, Mr. W. Blakemore, for having accomplished this quite wonderful amount of work in the short space of six months. The value of the work can only be appreciated by those who are familiar with the conditions under which it has been done; but it is safe to say that neither in the East nor West has a greater monument of industry been erected in so short a time.

EXTENT OF THE PROPERTY.

This is undoubtedly one of the largest coal properties known, and without going into the details, we



BRIDGE CONNECTING NOS. 1 AND 2 TUNNELS.

coke-ovens have been built, and are now shipping their product to West Kootenay: a branch line has been carried up Coal Creek to the mines, a distance of five miles, sidings put in, a lofty trestle 1,000 feet in length has been built across the creek to connect the mines on the north and south sides. A screen-house has been built, and the most modern screening plant installed; an electric plant for ventilating, hauling coal and mining has been erected, and is already partially in operation. A second electric plant, driven by water-power, has been installed at the coke-ovens, and in addition to these, and the thousand and one details which are requisite for mines, the subterranean works have progressed at such a speed that more than one mine of "heading"

may state roughly that the coal measures are in the heart of the Rockies and extend north and south a distance of forty miles, beginning with Michel Creek in the north, and terminating between Morrissey Creek and Elke in the south, and stretching east and west about ten miles from the banks of the Elk River towards the boundary line between Alberta and British Columbia. This area is of course reduced by the creeks which abound on the mountain slopes, and from which the coal measures have been eroded, but sufficient remains to constitute the coal field unique in extent, as it is in richness. The geological report states that there are upwards of fifty workable seams of coal, varying in thickness from 4 to 30 feet, and of these about one-third are cannel, and the remainder

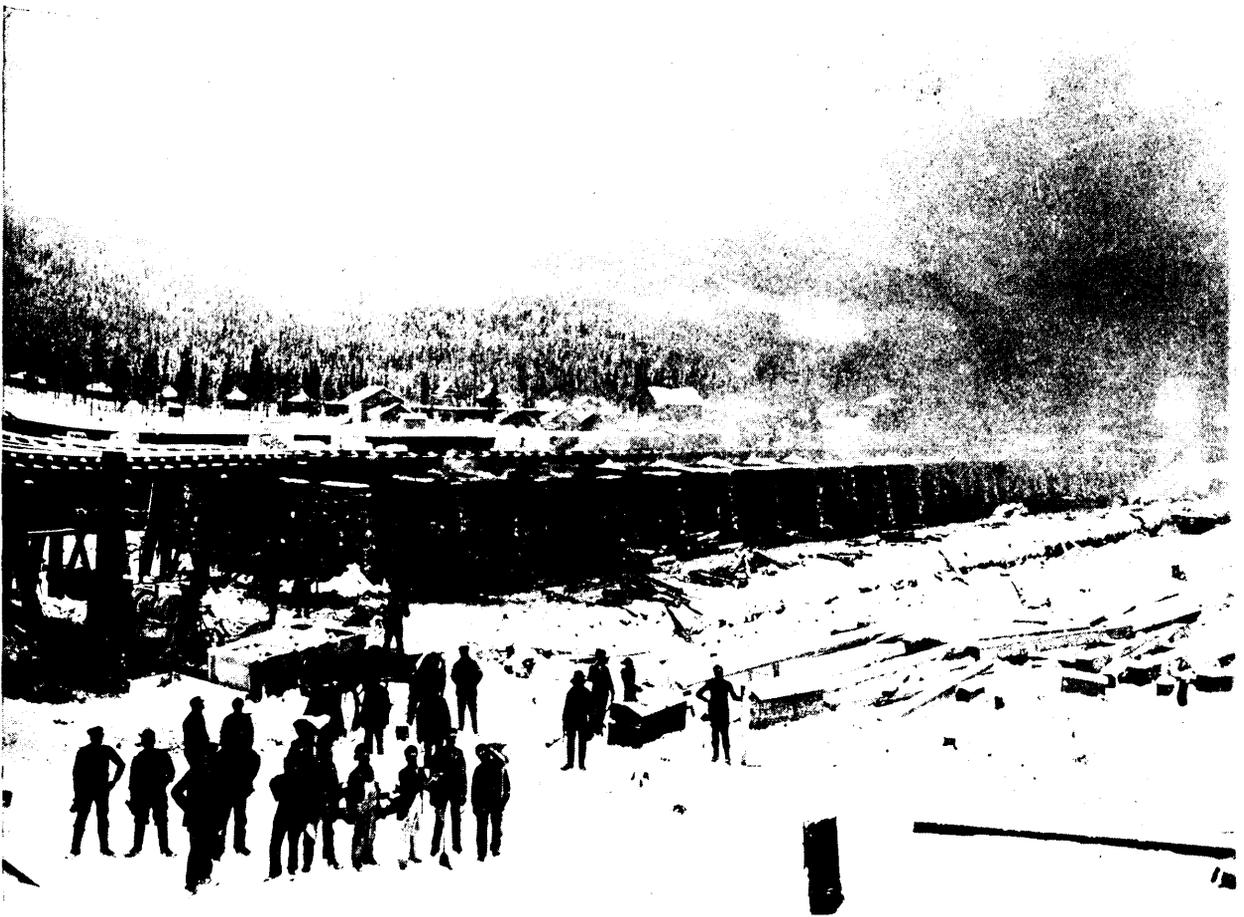
bituminous, the formation in which they occur is the lower cretaceous, the limestone being at the base of the lowest seam; the intervening strata consists chiefly of sandstone and shale, and as the measures lie at an angle of about 20 degrees, the upper workings are drained naturally. Dr. Selwin made a computation some few years ago as to the tonnage of coal contained in this field, and after making all the necessary reduction, he computed it as 75,000,000,000 tons.

CHARACTER OF THE COAL.

Of the cannel little need be said at present, as none of the seams have been worked, though we are informed that it is the intention of the Company to prospect these as soon as possible, with a view of

COKING OPERATIONS.

The public and mining interest in this concern centres around the coking operations, because the *raison d'être* of the enterprise was to enable the Company to furnish high-class coke in order to develop cheap smelting in the Province, and we must in fairness state that if lavish expenditures of money, and the erection of the most complete and modern coking plant is any criterion, the Company has fully realised its responsibilities in this respect. In addition to the 50 ovens already erected, there are 50 more under contract, and we understand it is the intention of the management that another 100 shall be added to them next year, and although it will be difficult to complete these in the time, if successfully accom-



THE NEW COKE OVENS.

supplying the gas coal market. The bituminous coals are most remarkable. Before erecting their coking-plant, the Company had the coals analysed in Canada, the United States, and Great Britain; the result showed little variation, and at the same time so high a quality as to occasion surprise. The fixed carbon in the raw coal varying from 78 to 80 per cent.; with ash, 3 per cent.; and sulphur, 0.50. This compares favourably with the best known coking coal, in fact it is purer than any except the very choicest. Speaking generally, the whole of the coals hitherto tested are coking, but several of them are giving the best results for steam and domestic purposes, and there is little doubt that when the property has been thoroughly prospected it will yield coal for all purposes.

plished, the end of 1899 will find 200 coking ovens in full operations at Fernie. We ought to say a word as to the layout of this coking plant because of its ingenuity and effectiveness: The coal is hauled from the mountain in self-dumping hopper cars, each carrying 15 tons; these are pushed up an incline until they stand over a bin, capable of containing 500 tons, when they are emptied through a bottom door. Under this bin a larry is operated by an electric motor on the trolley system. It is an iron larry and holds six tons, which is the exact charge per oven. A boy riding upon a tail-board runs the larry, which delivers its coal through side shutles, right or left as required, into the eye-hole of the ovens. The charge takes 72 hours to coke, and the product is long, lustrous and very firm, containing 94 per cent. of fixed carbon,

4.50 per cent. of ash, and 0.75 per cent. of sulphur. These figures will show that the coke is of the highest possible quality; and when it is borne in mind that West Kootenay smelters have hitherto been paying from \$12 to \$20 per ton for coke, and that this article from Fernie is now being delivered to the same smelters at about \$7, it will be seen how fully this property has already realised the high expectations indulged in if cheap smelting is to be, as we maintain, the *sine qua non* in the future success of British Columbia mining.

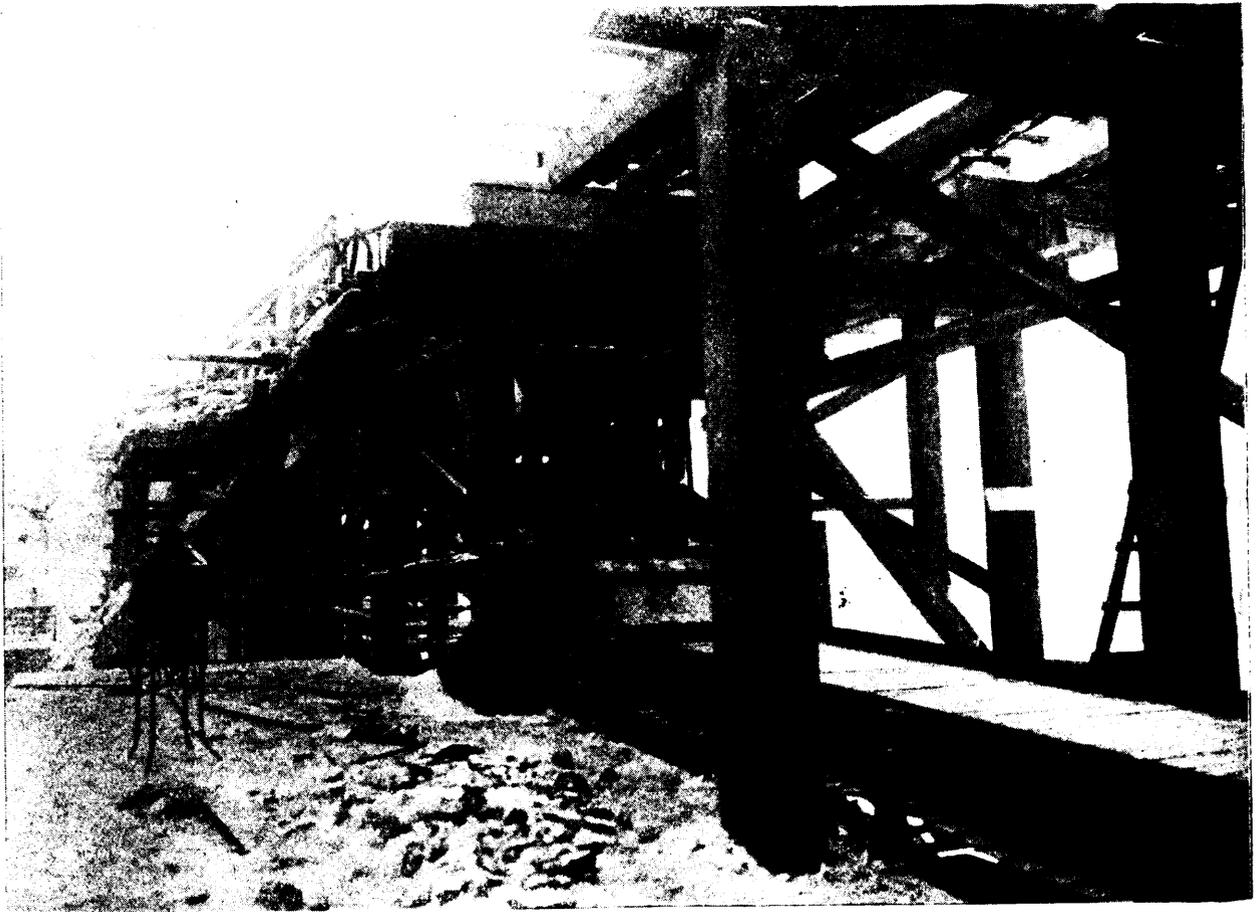
MODE OF WORKING.

The peculiar angle at which the measures lie occasioned some difficulty in deciding the best method to adopt in laying out the workings. The pitch of the

parallel levels, each 9 feet wide, and with the height of the seam; the lower is for drainage, the middle one for haulage, and the upper for breaking off the bords. The general haulage of the mine is operated by electric locomotives, furnished by the Jeffrey Manufacturing Co., of Columbus, Ohio, and run by an overhead trolley system. Each locomotive weighs 10 tons, and is capable of hauling 100 tons of coal upon a level grade. This Company has also furnished the electrical machines for mining the coal, as well as the electrical motors for running the ventilating fans.

PREPARATION OF COAL FOR THE MARKET.

In the centre of the trestle which connects the two mines is a large screen-house, 150 feet long and 30



THE ROCKING SCREENS.

seam was not sufficient to use "chutes," and too steep for direct hauling, consequently a balance system of haulage with bord and pillar workings right and left across the pitch of the seam was decided upon. The balances will be self-acting inclines, with a trolley to carry one tub of coal at a time, and a cast-iron weight running as a dummy underneath the centre of the track. These balances are driven from the level on the full pitch of the seam, a distance of 600 feet; the bords are 18 feet wide, and the pillars 30 feet; the thickness of the seams at present being worked are 5 feet 6 inches and 6 feet respectively, with a strong rock roof and floor. The upper workings yield a considerable quantity of gas, but the ventilation is good, fans being provided for both mines. The entrance to each mine consists of three

feet wide; in this is the most modern screening plant we are acquainted with, consisting of a shaker screen which deals with the large coal and delivers it to the picking belt, 40 feet long and 5 feet wide; below the first screen is one with a smaller mesh which prepares the nut coal, either for blacksmith or domestic purposes; and below this again is the slack bin, which feeds the dump cars for coking. The whole plant is operated by a 12-inch vertical engine, running at 200 revolutions a minute, with a steam pressure of 100 pounds to the square inch. This apparatus is entirely successful in freeing the coal from fine, and also in affording an opportunity for picking out the inferior pieces upon the belt. The satisfaction which has been expressed by all who have used the coal is sufficient evidence that the mode of handling meets

the requirements of the case. The apparatus is capable of dealing with 1,000 tons per day, but is so arranged that it can be duplicated; and we may incidentally remark that a similar plant which Mr. Blakemore erected for the Dominion Coal Co., in Nova Scotia, is at the present time treating 3,000 tons per day.

MARKETS.

If the development of metalliferous mining in British Columbia continues at the same rate as during the past year, the difficulty of this Company will not be to find a market, but to keep pace with that which already exists. The Canadian smelter, at Trail; the

Hall Mines smelter,

at Nelson; and the

Northport smelter,

just over the line,

require at present

200 tons of coke a

day, but with the

additions now be-

ing made to their

capacity, their re-

quirement in 1899

is estimated at 250

tons. It is cur-

rently reported that

the Pilot Bay smel-

ter, at Nelson, is

shortly to be re-

started, and we also

hear on the best

authority that a

smelter as large

as the one at Trail,

is to be erected

next spring in the

Boundary district.

This would raise

the consumption of

coke in the Prov-

ince to 350 or 400

tons a day, and

would require 300

ovens to produce

the tonnage, which

means that under

the most favourable

circumstances the

Crow's Nest Com-

pany will not over-

take the British

Columbia demand

for the next two

years, if they build

coke ovens as fast

as possible. In ad-

dition, the smelters at Great Falls are simply clamour-

ing for this coke, the present article which they are

using being of an inferior quality, except when they

import from Pennsylvania at high figures. As the

Crow's Nest Coke can be laid down in this place at

\$9 a ton, against inferior Montana coke at the same

figure, or Pennsylvania coke at \$12, it is evident that

this market will fall to the Crow's Nest Company as

soon as they are able to supply it; and if, as we are

given to understand, they can deliver to the smelting

city of the West, Butte, at \$9 or \$10, there is a

further demand of 1,000 tons per day awaiting

them. As we stated before, so far as coke is

concerned, it is not a question of market, but of production.

GENERAL ARRANGEMENT OF WORKS.

It may be interesting to give some idea of the general arrangement of the mine and town. The former is five miles from the new line of the Crow's Nest Railway, upon a plateau in Coal Creek, the elevation being 600 feet above the railway and about 3,000 feet above sea level. Owing to the narrowness of the plateau, it was found impossible to locate a town, or even build a coke oven at the mine. The town of Fernie was therefore placed on the main line,

and is beautifully situated on a level plateau, two miles long and half a mile wide, upon the eastern bank of the river Elk. It commands some of the most magnificent mountain scenery to be found even in this Province of mountains, and its elevation of 100 feet above the river insures sanitary conditions. The sub-soil is gravel, which is covered with rich alluvial soil; the temperature ranges from 80 above zero in July and August to 20 below in January and February. There is a heavy snow-fall, and good sleighing for three months; but the winter breaks up early, and spring often commences at the end of March. There is little or no wind, and only a moderate rain-fall, and owing to the large amount of sunshine, even through the winter months, the climate is healthy and



MR. WILLIAM FERNIE.

exhilarating. The Company have built a very good class of modern cottages, excellent boarding and bunk houses, hospital, and warehouses; and, so far as they are concerned, it is evident that in the selection of the site, the plotting of the streets, and especially in the class of buildings erected, the establishment of a well-arranged and attractive town has been the object in view. The miners are conveyed to and from their work in a passenger car, and are well provided with large houses and conveniences; and it is at once a testimony to the generosity of the Company and the popularity of their management that Mr. Blakemore has been able to induce all the miners required to

emigrate with their families from Nova Scotia and settle in this country. It is no light thing for men and their families to break up their homes in the East and travel 4,000 miles to a new sphere of labour, and nothing surely but absolute confidence in those who were advising them could have induced them to take the step. So far as we could see or hear, the men and their families are perfectly satisfied, and we were told repeatedly: "Mr. Blakemore has fulfilled every promise he made to us." The Company are to be congratulated on having gathered together such a set of sturdy, experienced miners, men of high character and thrifty habits, who have been accustomed to the best class of mining, and will no doubt contribute their full share to the success of this important concern.

PERSONAL.

This hasty sketch would be incomplete without a reference to the two men who have been mainly instrumental in discovering and developing this gigantic enterprise—Messrs. William Fernie and William Blakemore. The former may fairly be designated as one of "the grand old men" of British Columbia. Not so much because age has set her mark upon him, as because he has spent forty years in tramping through the dense forests and across the rugged mountains of the Province with an unerring instinct for the discovery of the mineral treasures in which it abounds.

If ever there was a born prospector it is William Fernie, for even now, in the days of his success and with a golden harvest well garnered, his greatest delight is to shoulder his pick and break new ground. The ease and comforts of civilization have few attractions for his simple and robust tastes; and the man who has in turns prospected nearly one-half of British Columbia, administered justice over a whole county, and acted as Government Agent and Gold Commissioner for one of the largest districts in the Province, is as natural and kindly in manner as a

child—the friend of all and the enemy of none—with the prospect of many years yet to come in which he may reasonably expect to reap the rich harvest of his long and honourable toil.

The other man, who fairly shares the credit of this promising concern, Mr. Blakemore, only came on the scene a year ago, when he was appointed Mining Engineer and General Manager to the Company; and if his previous record in Nova Scotia had not already established his reputation as one of the leading mining engineers in Canada, his work here would

certainly entitle him to that position. Those who have followed the mining reports of the Dominion are well aware how Mr. Blakemore undertook five years ago the arduous position of Mining Engineer to the Dominion Coal Co. in Cape Breton, and how he remodelled, on the most modern lines, the group of mines purchased by that syndicate, doubling the output, almost halving the cost of production, and especially distinguishing himself by opening up a new mine known as Dominion No. 1, in which he introduced coal cutting machinery for every purpose, and reached an output of 3,000 tons in a single shift. This work attracted so much attention that Mr. Blakemore was asked to write a special article on "Coal Cutting by Machinery" for the North of England Institute of Mining Engineers, of which he is a member, and the result was the publication of



MR. WILLIAM BLAKEMORE, GENERAL MANAGER, CROW'S NEST PASS COAL CO.

his paper in pamphlet form by the Institute and the awarding of a prize to the author. It should also be mentioned that Mr. Blakemore is a Vice-President of the Mining Institute of British Columbia, and a member of the Council of the Canadian Mining Institute. This admirable record has been fully sustained by Mr. Blakemore during his term of office with the Crow's Nest Pass Coal Co., and the immense amount of engineering and development work done in so short a time, as well as the splendid character of

the equipment, show that the company have made no mistake in his appointment. Mr. Blake-more's personal popularity is as great as his professional ability, and this was well evinced during the recent visit of the hundred or more West Kootenay delegates to Fernie, when there was but one opinion expressed on the General Manager and his work, and that the most complimentary. We can only wish to these two worthy officers and to the Company they so ably represent the meed of success their energies deserve.

THE WEST COAST OF VANCOUVER ISLAND.

By W. M. BREWER, M. A. I., M. E., ETC.

WITH the exception, perhaps, of the Alberni District, relatively very little is known to-day, even in this Province, of the mineral resources of the West Coast of Vancouver Island. I, therefore, propose to give my impressions of the Clayoquot district, which includes the country immediately adjacent to Kennedy Lake, Tofino Inlet, Warn Bay, Bodwell Sound, Cypress Bay, and Herbert Arm, and to which district I recently paid an interesting but somewhat hurried visit.

The most prominent water courses which empty into these bodies of water I have mentioned are, Elk River, emptying into Kennedy Lake; Deer Creek, into Tofino Inlet; Bear River, into Bedwell Sound; and Trout River into Cypress Bay.

Excepting Kennedy Lake, the other inlets and sounds are remarkably well located as regards deep water harbours. Steamboats drawing as much as 15 or 18 feet of water can sail to the mouths of Deer Creek and Bear River, thus affording the most favourable opportunities for the shipment of supplies or ore to and from the prospects located along the shores, or on the water sheds drained by the streams mentioned.

At present the principal supply centre of the Clayoquot district is on Stubbs Island in Broken Channel of Clayoquot Sound, where there is a well supplied store, hotel and a post office, as well as the station of the Provincial police. On another island in the near vicinity are located the office of the mining recorder, a general store and hotel, while upon still another is situated the Indian rancherie.

At the time of my visit there were probably forty prospectors working at assessment and development work on mineral claims located in the surrounding country. So far as opportunity was afforded to observe the work which had been done by these men, I found cause to congratulate the prospectors of the district. Most of these men have erected substantial cabins on their claims, cut trails, and are making permanent homes.

Although placer mining was carried on at Bear River some years ago, and a camp designated as Bear City was established, yet no effort was made until about 1896 to prospect or develop quartz or vein mines. The heavy iron capping, usually magnetite, which forms the out-cropping of the ore bodies here, was not thoroughly appreciated by prospectors in the early days, because they were unacquainted with the formation, but after the development of the Kootenay country, prospectors became familiarised with mineral indications of this character, attention was drawn to the excellent surface showings of the Clayoquot District, with the consequence that locations were staked by a few men who had had some experience in other districts. When specimens of these outcrops were

shown abroad a considerable number of prospectors went into the district in 1897 and 1898, notwithstanding the great difficulty of reaching the interior of either the islands or mainland of the West Coast. Owing to the dense growth of timber and underbrush, many of the later arrivals caused considerable confusion by staking mineral claims, the boundaries of which overlapped many of those which had been previously staked by the pioneers of the district. Especially is this the case in the Deer Creek division, but on Bear River less confusion has prevailed.

Owing to the fact that lime stone is the country rock of a considerable portion of the entire district many prospects, where good showings occurred on the surface were staked, have since been proven to be practically valueless, for the reason that the magnetite or other iron ore outcrop merely formed a shallow deposit on the top of the lime stone. But where greater care was taken in prospecting, and the contact between igneous rocks and lime stone or fissures in the igneous rocks discovered, there is great promise that these ore bodies will be permanent and develop into good mines.

Of the country immediately in the vicinity of Clayoquot, which embraces several groups of islands as well as the peninsula lying between Cypress Bay and Herbert Arm, I did not make any examination, but was reliably informed that work was being actively prosecuted on property near the mouth of Trout River, owned by the Helga Mining Company, also on the Iron Cap mineral claim on Mears Island. On the latter property an experienced miner, formerly from the Black Hills of South Dakota, has taken a lease agreeing to do a certain amount of development work for the ore extracted during the prosecution of the work. On the former property known as the Good Hope, the company have a force of men employed in developing and opening up the mine with the intention of shipping ore therefrom at as early a date as possible.

With regard to Bear River I found that the mountains adjacent to this stream had been more or less thoroughly prospected for a distance of about 10 miles above its mouth on both sides of the river. But so far, as a result of the inaccessibility of the country, prospecting has been confined to a comparatively short distance back from the river itself on each side. From the mouth of the river up some two miles a belt of granite is crossed, this is followed by a belt of crystalline limestone, through which occur dykes of igneous rocks, some apparently typical diorite, others porphyrite. But this classification may not be technically correct, because with an ordinary lens it is very difficult to properly classify these igneous rocks, and until microscopical and magroscopical examinations have been made by experts it is hardly safe to attempt any specific classification. The ore bodies which I myself examined occur both on the contact of the igneous rocks and limestone, as well as in fissures through the dykes themselves. These fissures bear a very strong similarity to those in the Rossland district. There do not appear to be two well defined walls, but the foot walling is usually persistent and pronounced, and the ore bodies occur as impregnations of sulphides in the country rock towards the hanging wall side. It is near the foot wall though, where is usually found not only the most solid ore, but the highest grade in value.

Sufficient work has not been done on any of these prospects to enable anyone to base an unqualified

opinion as to their future possibilities. The outcrops usually consist of magnetite, which at a shallow depth is replaced by sulphide ore containing chalcopyrite, iron pyrite and often pyrrhotite. Assays of samples taken by prospectors from many of these prospects have shown quite high values not only in copper but also in gold. So far as permanency is concerned it is my opinion that some of the prospects will undoubtedly maintain continuity as depth is attained in the workings.

At four or five miles above the mouth of Bear River there occurs a series of comparatively narrow quartz veins and stringers, which have undoubtedly been the source of the placer gold which was found in the river gravel several years ago, and even to-day is being worked to a limited extent by placer miners.

Of these quartz veins the writer is unprepared to give any opinion, as I only saw samples which had been taken by prospectors who have staked locations. Some of this material, though, I panned at Clayoquot, with very satisfactory results; in fact, if the sample brought to me represented a fair average, much of this quartz would yield at least \$25 per ton in gold, and be of a free milling character, at least near the surface.

In the Deer Creek division of the district the geology is more complicated: the country rock is limestone, more or less crystalline in character, with intrusions of igneous rocks similar to those dykes which occur on Bear River. The contacts, though, are not as well defined as on Bear River, the igneous rocks appear to have flowed over the limestone when in a molten condition, and consequently the line of contact in many places is horizontal or nearly so instead of vertical. Where these conditions exist the line of contact in many places is very irregular, with a wave-like tendency and, so far as the present writer's observations went, there appear to be but little evidence of mineralisation.

The most development work performed in this division has been done on the Crow claim, one of a group owned by a party of prospectors who were the pioneers in the district. A drift fifty feet in length has been driven on an ore body, and about three hundred tons of ore mined therefrom. This ore was taken from the tunnel during the progress of the work, and not from stoping ground. Some distance in from the mouth of the tunnel limestone occurred, and the ore body pinched to an inconsiderable thickness, but work being continued this body of limestone was cut through, and there is every appearance that the ore body will be again encountered. The foot walling is very well defined, and the fissure is the contact between igneous rocks and limestone, with the foot wall dipping almost vertical. In order to thoroughly establish the value of this property, further and deeper development work will have to be performed. This was the first claim staked in the Deer Creek district, and more work has been done on it than on any other, but there are several good outcrops showing on the mineral claims which surround the Crow, such as the Star, located about 1,800 feet higher up the mountain than the Crow location: also on the Lady Rone, of the Crow group, while on the Jumbo a good showing of bornite ore occurs in a spar gangue. The locators of the latter had recently commenced assessment work, therefore but little idea

could be gleaned as to the condition with regard to the structure of the ore body.

On the Star claim a tunnel is being run along the foot wall of a well defined contact, and considerable ore has been taken out.

None of the occurrences of ore bodies seen by me in this division have two well defined walls, the structure being similar to other ore bodies described in this article.

The altitudes of the mountains immediately adjacent to the mouth of Deer Creek, are much greater than those near the mouth of Bear River. In fact the extreme summit of the mountain on which the Crow, Star, and other locations have been made, is at least 3,000 feet above sea level, and the top not more than two miles from the mouth of the creek.

The owners of mineral claims in this division fully realise that not sufficient work has been done to establish the value of their properties. In shipping from this section, aerial or gravity tramways of considerable length and very steep grade will be absolutely necessary; consequently, all properties should be very well developed before investments in tramways ought to be made.

So far as shipping facilities are concerned, there are two natural deep water wharf sites, one on the John Irving purchase, on the extreme east side of the mouth of Deer Creek, the other on the extreme west side, which had not at the time of the writer's visit been acquired or appropriated. So far as the water front of the Indian reservation is concerned, the facilities for a good wharf are not desirable, because the shore slopes so gradually that to secure wharfage at which steamboats drawing even light draft could tie up, would require the building of some two or three hundred yards of trestle work on piles into the mouth of the inlet.

On the west side of Bear Creek several locations have been staked and recorded, and some work done, especially on the Hattie Green mineral claim, where, in a tunnel visited by the writer, a considerable thickness of ore was cut through at the immediate mouth and beyond the country rock was encountered. Work at this point instead of determining the existence of a mine, merely demonstrated that the outcrop had slipped from some higher altitude.

In connection with this group of claims I was informed that in consequence of a very flattering report having been made and sent to Scotland, an expert had been sent out to visit the claims in the interests of a Scottish syndicate which proposed purchasing after proving the reliability of the representations of the property. The result was very harmful to the entire district, because the Scotch expert necessarily returned home most thoroughly disgusted. I was, however, very pleased to find that the prospectors themselves, who owned other groups in the vicinity, expressed in unqualified terms their disapprobation of such methods of attempting to sell worthless properties through unreliable and exaggerated reports.

So far as the Clayoquot district, as an entirety, is concerned, I am satisfied that some good mines will be developed when sufficient work has demonstrated the permanency and extent of the ore bodies. The district is at present enjoying a healthy but a slow growth, which in the end will undoubtedly be vastly more to its advantage than any boom or unnatural progress.

THE MINES OF BOUNDARY CREEK.

(By Con Centrate).

NO. I.—THE WINNIPEG.

THE following descriptive article, contributed by one of the "pioneers" of the camp, is the first of a series we hope to publish from time to time in the MINING RECORD, dealing with the better known and more developed mining properties in the Boundary Creek district, which is just now beginning to attract widespread attention in view of its promise to become in the near future one of the largest and most notable copper and gold-producing centres in North America: Among the many properties in the Boundary Creek district which have passed the prospect stage and may now be classed as mines, none is better known

been one of the best known properties of the Boundary Creek district.

There are four leads on the claim, known as the East, Central, West and Diagonal veins. The East vein averages two feet in width. It has a gabro foot-wall and diorite hanging wall, and its strike is fifteen degrees east of north. At the contact the gabro is altered to serpentine, and the diorite to quartzite. The Central vein varies from two to eighteen feet in width, averaging ten feet. It lies in similar formation to the East vein, and has the same strike. The West vein is four feet wide, and runs about due north and south. It lies between a contact of quartzite and diorite. The fourth vein has not been developed to any great extent, but at a depth of fourteen feet from the surface its width is two and one-half feet. All



(Photo by T. McMunn.)

STAGE ON THE ROAD TO GREENWOOD PASSING WINNIPEG MINE.

or can with a greater certainty be classed as a future dividend payer than the Winnipeg, in Wellington Camp. This property lies about twelve miles from Grand Forks and eight miles from Greenwood, on the main stage road, and is thus very favourably situated for shipping ore whenever transportation facilities are afforded by the completion of the Columbia & Western Railway.

The Winnipeg was located by Mr. Duncan McIntosh (the President and Managing Director of the Winnipeg Mining & Smelting Co., the present owners), on the 14th of June, 1895, and a crown grant of the claim, which comprises 33½ acres, was secured in February, 1896. The quality of the ore at once brought the claim into prominence, it being of much higher grade than the ordinary ore of the district, and since the day of its location the Winnipeg has

the leads carry clean ore from wall to wall. The ore itself may be described as a pyrrhotite and silicious chalcopryrite, both carrying gold values from \$4 to \$2,100. In the silicious ores, however, the best values are found.

Shortly after the claim was located a 35-foot shaft was sunk by the discoverer, Mr. McIntosh, on the Central vein. Assays of ore from the surface to the bottom of this shaft ran from \$30 to \$223 in gold. Later on a cross-cut was run, showing up seventeen feet of ore. The same year (1895) another shaft, fifty feet deep, was sunk on the same vein, with equally good results. In the following year the small prospecting shaft was sunk on the Diagonal lead, the ore averaging \$13 in gold.

In July, 1897, the Winnipeg Mining & Smelting Company, capitalised at \$1,000,000 in \$1 shares, was

incorporated under the laws of British Columbia, for the purpose of acquiring and working this property. After the organisation of the company, work on the present $4 \times 8\frac{1}{2}$ feet double-compartment working shaft was commenced, the shaft-house and present buildings were erected and a steam plant installed. The latter consists of a 25-horse power boiler, 16 horse power hoist, and a No. 5 Cameron pump. The shaft was first sunk vertically 100 feet, between the Centre and East veins. At this depth the East vein was struck by cross-cutting. The results were altogether so satisfactory that the management decided to sink 200 feet more. At the present time the shaft is down 320 feet, the lower 225 feet, being at a slight incline, almost corresponding with the dip of the veins. At the 300-foot level the East vein was cut in the hang-

a forty-five foot shaft has been sunk, the ore from the surface to the bottom of which ranges in value from \$36 to \$178. Last February a trial shipment of unsorted ore from the Centre vein was made to the Northport smelter, and returns were received giving a yield of \$74.95 in gold to the ton.

A large quantity of ore lies on the dump at the present time, but no effort has been made to increase this except in the ordinary course of developing the property; but directly transportation facilities are provided—a question now of a very short time—the management expects to be in a position to ship ore steadily from this mine to the smelter. Meanwhile a branch line has been surveyed by the C.P.R., to run from the summit of the Boundary Pass to Summit, Greenwood, Wellington and Central Camps. This



(Photo by T. McMunn, Greenwood.)

MOUTH OF NO. 1 SHAFT, WINNIPEG MINE.

ing wall. It is the intention to use 25 feet of the shaft as a sump, and to cross-cut for the Centre vein, and drift on the east vein at the 300-foot level. Probably by the time this article appears in print the Centre vein will also have been reached by cross-cutting at this level.

Remarkable progress was made in sinking the last 200 feet of this shaft, the sinking being mostly done through the serpentine formation, though hard rock was occasionally encountered. This performance may safely be said to have established the record for rapid shaft sinking in the district, for including the timbering for a double compartment shaft of $4 \times 8\frac{1}{2}$ feet, the work was completed in the short time of fifty-five days, the working force consisting of six miners, two engineers and a foreman, the latter acting the part of blacksmith. On the West vein, discovered last March,

road is to pass at no greater distance than half a mile from the Winnipeg mine, and already a spur is contemplated from the railway to the Winnipeg dump, the necessary surveys having been recently made.

Stock in this company (chiefly held in North Dakota) is now very difficult to procure, the treasury shares having been taken off the market some months ago, previous sales having provided ample funds for carrying on the development of the property until the time arrives when production is possible. It is also gratifying to be able to state that from the commencement the affairs of the company have been economically and wisely managed, expenditure being entirely confined to the opening up of the mine, and so satisfactory is the outlook ahead it is not expected that it will be necessary to issue the 100,000 shares available for "treasury" purposes.

A very keen interest is taken locally in the development of the Winnipeg mine, and if ere long it does not prove to be a dangerous rival to the now famous Rossland "Le Roi," the Boundary Creek mining community will be sadly disappointed.

FORTY YEARS AGO.

(By Nicolai C. Schou).

UNDER this title it may not be uninteresting to glance over and comment upon a curious contemporaneous description of the Fraser River gold rush of 1858-9, which first brought British Columbia to the front—yet then but temporarily—as a territory of Greater Britain of vast potential value, now at last generally recognised in and by the world, after four oftentimes wearisome decades of work and waiting. The description in question appears anonymously in issues of *Chambers' Journal*, of London and Edinburgh, in September, 1858; and, doubtless—wide even then being the circulation and influence of that popular serial—attracted not a few British gold-seekers to our British Columbian Mainland. The writer begins by saying that, as usual, England could claim little credit for penetration or promptitude, for little notice was then taken by the British Colonial office, then administered by the Hon. Mr. Labouchere, afterwards Lord Taunton, the aristocratic uncle, I believe, of that pseudo-democrat "Labby, M.P.," of *Truth*. To Mr. Labouchere Governor Douglas, of Vancouver Island, communicated on the 16th April, 1856, the news that gold had been found in "British territory on the Upper Columbian, and that, in his belief, other deposits would be found in that country." The Governor got the usual dry reply from the *laissez aller* head of the Colonial office, as constituted in those days of "little Englanders." A correspondence followed, it seems, but not till the summer of 1858 was the full correspondence published in a parliamentary paper, when the whole world was in a blaze on the subject, as the *Chambers' Journal* writer puts it.

Then came the rush from all parts of the world, California in particular. The writer then naturally comments on the curious fact that though the Hudson's Bay Company and its unsuccessful rival the North-West Company had for very many years employed a host of clerks, factors and voyageurs in British Columbia, aiding in fur trading and general business, only in 1856 had any man among them apparently noted the presence of gold formations. It seems that, curiously enough, the first report was made by a Hudson Bay Company's clerk, Mr. Angus McDonald, who was in charge of a post at Fort Colville on the Upper Columbia, which is, if we mistake not, actually on the Washington side of the International boundary, and in the Indian reservation district which has at last been opened to the miner with very promising results. According to Mr. McDonald, the first gold winners there got from \$10 to \$40 a man in dust, much of which reached Victoria, whence a considerable migration proceeded, though the Colville Indians strongly objected to the white man's intrusion. Gold was next found *en route* on the Fraser and Thompson Rivers, the first skilled miner working on the Fraser being, according to the San Francisco correspondent of the *New York Tribune*, a Scotsman named Adams, who got his information from a brother Scot named Maclean that Indians were getting gold on the Fraser. This happened early in

1857. Adams got to work speedily with the hired aid of two Indians who had just previously begun to collect river gold and sell it to the Hudson Bay Company. He thus worked away for three months, and then returning to Puget Sound with about \$1,000. Adams after a while grew tired of lonely life amongst the Fraser Indians, and returned for a brief space to civilisation of a kind at Bellingham Bay, on Puget Sound, where he told the news of his success to a number of American sailors, who, joining their narrator, returned with him and made successful searches for the Fraser's gold. The news of their good luck naturally soon reached Victoria, and thence as naturally passed to the closely connected centre of San Francisco, where it infected and re-infected many Californians with the gold fever. Governor Douglas, however, grew fearful of the inrush of aliens that ensued, about 400 arriving in Victoria on one steamship, the Commodore, of San Francisco, on the 25th April, 1858. About 60 among the aliens, who formed the majority of some 450 new arrivals by the boat, were Americans, the others chiefly Germans, Frenchmen and Italians. They behaved very well on the whole—though a rough looking crowd—during their stay, *en route*, at Victoria, and delighted the few merchants of that city—then in the main a Hudson Bay post plus a very small centre of Crown Colony Government—by the lavish outfitting purchases that they made. But Governor Douglas grew greatly alarmed lest the foreign inrush should prove dangerous to Imperial interests by introducing a turbulent population of non-British sympathies. He urged, in a communication to that literary *roue*, Sir Edward Bulwer Lytton, the then Colonial Secretary, that some measures should be taken to limit the alien inrush after our gold. In this regard the history of the present inchoate agitation against the free admission of aliens to our placer gold fields was anticipated so far back as early in 1858; but the Governor's chief objection was not, like the one now most frequently used, largely economic, but based instead on political grounds. It would be difficult, he thought, to impose and collect adequate licenses, and he suggested an import duty on goods—British Columbia being at that time, in the main, a land of something like free trade, and not, as now, taxed to an extreme by ultra-protection, imposed largely for the benefit of Eastern Canada. Governor Douglas feared, in particular, that if the diggings failed, the mixed alien population might create grave disturbances and endanger the peace of the whole country, then sparsely settled—in addition to many thousands of somewhat turbulent natives—by some few thousands in all of British subjects.

The Governor, at a rather later period in 1858, reported—the story of the Klondike here again for a while being anticipated—that though there were excellent reports of gold finds on the Fraser from Yale upwards so far as Quesnelle Forks, no very large return of gold was forthcoming. "There will surely, if this lasts, be bad trouble," argued, in effect, the Governor, "amongst the American and other alien gold seekers who ought to be subject to somewhat discouraging restrictions in immigration." But the British Government took a broader and more liberal view than that of Governor Douglas, whose fears were not shared in England. He was told not to seek to impede or restrain the influx of Americans or other aliens, so long as they proved law-abiding, but to use caution, delicacy and liberality towards them.

return, no doubt, for the freedom with which British subjects had been and were being admitted to the Californian gold fields. The United States authorities naturally received this policy well, and it roused a better feeling towards England.

Another little matter had next to be settled—the choice of a name for the Mainland—then unstyled. “Vancouver Island” being the title of the undivided Crown Colony. It was first resolved to call our mainland “New Caledonia,” the only local relic of which decision is the title of the Anglican Bishop of the Northern Mainland, who is still styled “Bishop of Caledonia.” But, as it was found that a French island in the Pacific had first claim to the title of “New Caledonia,” it was resolved to call the Mainland “British Columbia.” This, the writer in *Chambers' Journal*, thought very clumsy, and “no doubt destined to be abandoned for something shorter and more pointed”—a prophesy, however, quite unrealised, as all of us know, since the name “British Columbia” has not only continued to style the Mainland, but made also a Provincial unification to include Vancouver Island. Colonel Moody was then appointed the first Governor of the separate Crown Colony of “British Columbia”—at first tentatively created for five years only—and thither, later in 1858, he sailed from Southampton, crossing from the Atlantic to the Pacific, *via* Chagres, now Colon, and Panama, and thence making north by San Francisco and Victoria and the Fraser River country.

The writer in *Chambers* then tells of the big land boom which set in at Victoria, and brought much money in exchange for several hundred acres of real estate into the coffers of the Hudson Bay Company. In a few weeks thousands came into Victoria, many there to stay and trade, and the steamers *Surprise* and *Sea Bird* began by midsummer to make regular trips up the Fraser River *via* what later became “New Westminster” as far as Hope. “Paper towns”—what we now call boom-townsites—then began to be laid out for lot-selling and “sucker” catching (at many points) in British Columbia, and some interested in these (when situated off the river) represented the Fraser has “a wild and dangerous mountain torrent.” The trips of the steamers, however, falsified this alleation, and proved the Lower Fraser navigation to be both safe and fairly easy. Now, too, more gold began to be got by August, 1858.

The writer in *Chambers* then quotes a description of Victoria as a town with two beautiful harbours, the better that on Esquimalt Bay, adding that the “place improves on acquaintance, there being plenty of fish in the bay to be caught from the bridge, and pleasant walks about and near the town, whilst the many tons of pebbles on the beach made good road material.” He notes the prevailing profusion of wild strawberries, blackberries and roses, young oaks and aspens, the undulating nature of the land, as also that mountain winds from the Olympics make the temperature, though warm in summer, “delightfully bracing.”

Town lots now began to be sold in Victoria like wildfire, the Hudson Bay Company gradually raising the price of 60x120 feet lots from \$25 to \$100, and taking in as much as \$25,000 on a good day's sale, though, to prevent “cornering,” no person was allowed to purchase more than six lots. Most of the buyers made good bargains, for the writer records that by August, 1858, Victoria town lots, five or six

blocks from the water front, began to realise from \$1,000 to \$1,200 each.

But here my summary of this early description of the Fraser River gold rush must for the time conclude, further details—some of them amusing—being left for notice in the next issue of the MINING RECORD.

(To be Continued.)

SOME ORE BODIES IN THE GRANITE OF SOUTHERN WEST KOOTENAY.

DURING the past year a very satisfactory advance has been made in the development of our dry ores, or such ores as are not peculiarly bullion or matte makers, but may be used in either branch of smelting, and at the present time have the advantage of a freight and treatment charge, which is little more than half that of the silver-lead wet ores of the Slocan proper, or from \$12 to \$15 per ton. Moreover, those dry ores are capable of being treated by methods, such, for instance, as free milling and wet processes, or concentration to a high grade product that cannot be employed in the case of the heavy sulphides of Trail or Slocan. These veins, usually of quartz, with scattered sulphides of iron, zinc and lead, and more or less free milling gold, are not confined to any one district or formation. So far they have been generally found in rocks of igneous origin, usually granite and basic rhyolites, the quartz of the Slocan slates being bunchy and barren. Present development of these veins is chiefly confined to a strip of country which reaches from the southern boundary of the Slocan slates, on Four-Mile Creek, to the International boundary at Wanita. Within that district they form the most common description of ore body, and have usually some gold values, the silver values being greater generally in the northerly portion of the district. That these ore bodies in the near future will contribute largely to the mineral output of the Province, and form another branch of mining distinct from the copper of Trail and the lead of Slocan, is probable. Meanwhile several stamp mills have been installed during the past year, and other processes apart from smelting will be introduced. The greatest development or occurrence of dry ore bodies carrying fair values of gold and silver is in the granites, and the greatest development of this granite is the great range between the Slocan slates and Kootenay Arm or Nelson. Other smaller bodies and dykes of a like composition occur throughout Southern West Kootenay, and concerning them Dr. Dawson writes as follows in his West Kootenay Report of 1889:

“The granites, which, however, occupy by far the largest area of coarser texture, generally grey, passing to black in colour, are characterised by black mica with frequently much black hornblende. They may be described as a whole as hornblende granites, but occasionally pass into mica syenite. In some localities they are not infrequently porphyritic, with large twinned orthoclase feldspar crystals, while sphene is also present as an accessory mineral. These granites are evidently intrusive, and of later date than the stratified rocks which are altered by them at contacts. They appear to have a rather intimate connection with the occurrence of metalliferous deposits in adjacent areas of stratified rocks, and the conditions which have resulted in the formation of the metalliferous veins probably occurred, for the most part, at the time of their intrusion.”

At the time this was written, the highly mineralised Slocan slates were undiscovered, but the occurrence of the rich ores at Ainsworth, near the contact of the granite mass, had been observed.

The silver-lead deposits in the Slocan slates are at no point far removed from the granite and other igneous rocks which almost surround them, and at times break through their mass. It is also observable that the richer combinations of silver, such as visible argentite, ruby and antimonial silver, are more common nearer igneous contacts, whilst the common but high grade galena is more evident in the more



CENTRE STAR GULCH—ROSSLAND, B.C.

of metamorphic rock, is a coarsely crystallised, or a sugar-grained quartz, of a white, opaque appearance.

These occur as narrow veins, from one to six feet wide. They have no common course or uniform dip, although a great many of them incline less than sixty degrees from the horizontal. Their outcrop usually occurs somewhat parallel to the longer axis of any given mountain, and they dip into the hill. This may be the nature of them, or it may be an accident of discovery, such as finds so many mines near the mountain tops or other exposed places.

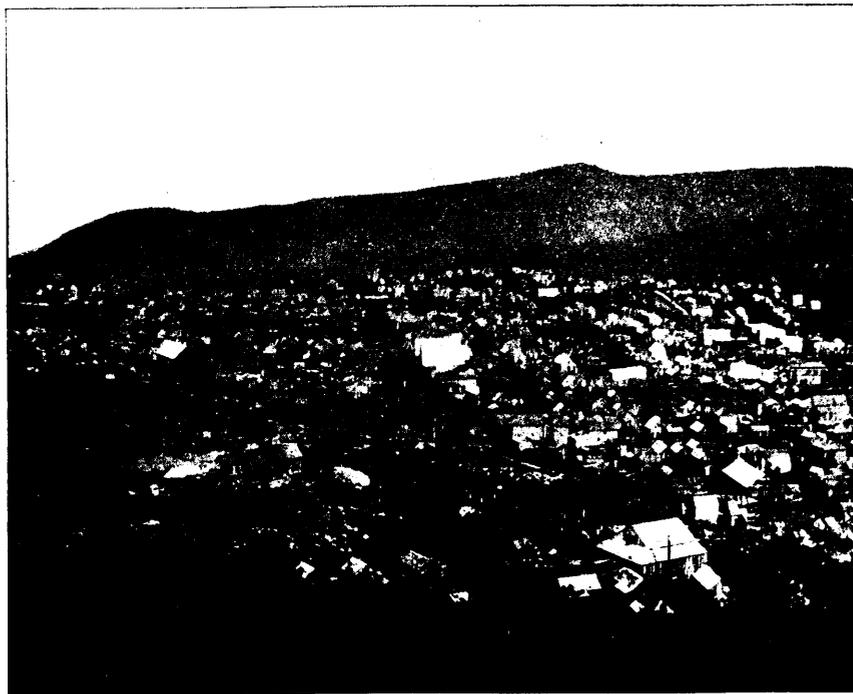
Surface ore is generally a honey-combed oxydised material, of high grade in silver and gold. This soon gives place to an intimate mixture of close-grained quartz argentite and argentiferous pyrites; or coarse white quartz (when gold is chief value) having bands and lines of iron pyrites, also some little galena and zinc blende, native gold and argentite crystals, the sulphides apparently filling up comb-like cavities in the quartz crystals, which often leave a beautiful impression on the pyrites. Such ore bodies as above described have been classed as "segregations," and abandoned after very little work done. Hence they are not now in much demand. It has been said that they are frozen to the walls, and that they pinch out.

One of the walls is often frozen, but well defined. The other, or both, are free, and show signs of movement and gouge matter. Lying so flat as some of them do, the walls have had less chance of movement and gouge-making agencies.

Concerning the pinching out, there is very little

removed slates. If it is acknowledged that the granite was a prime factor in the mineralisation of the surrounding contacts which it made with already existing formations, it does not follow that it should be well mineralised itself, or that its ore bodies were formed contemporaneously. As a matter of fact, however, these granites are highly mineralised, and the number of small and large ore bodies is astonishing. There can be no denial of this. That these ore bodies, veins or segregations as some call them, can be worked to pay, is a matter which has not yet been proved. Present developments offer considerable encouragement.

The objection that the granite is unfavourable to fissures is answered by the results obtained on the Enterprise, Arlington and Mollie Gibson, all in the granite, and as fine fissure veins as can be seen in Kootenay. These, however, are more or less lead ores, but having high grade combinations of silver as well. They are not the characteristic ores of the district, but they demonstrate its possibilities in the fissure line. The most abundant and characteristic ore body of the granite, when remote from dykes, mere basic intrusions and patches



ROSSLAND, B.C.

evidence of such having occurred. Small displacements have taken place, and inexperienced operators have covered their confusion by a statement of pinching out. The usual signs leading to a recovery of the veins along the plane of faulting are generally present, and the displacements do not greatly interfere with economical operation of the veins, some localities

being much more disturbed than others, the greatest throw so far observed being one of a hundred feet on the Enterprise vein. Besides the characteristic quartz veins, there exist a rather varied assortment of dissimilar ore bodies. Such are usually found in conjunction with the presence of differentiations in the granite mass, and they are not unimportant in size and value.

Patches of metamorphosed slate, dykes of mica trap and hornblende masses, appear to favour the appearance of silver bearing lead and zinc ores. Also local differentiation of the granite itself causing it to depart from the usual homogenous porphyritic texture. Some rather massive deposits of specular iron and zinc, and pyrrhotite and copper pyrites appear among zones

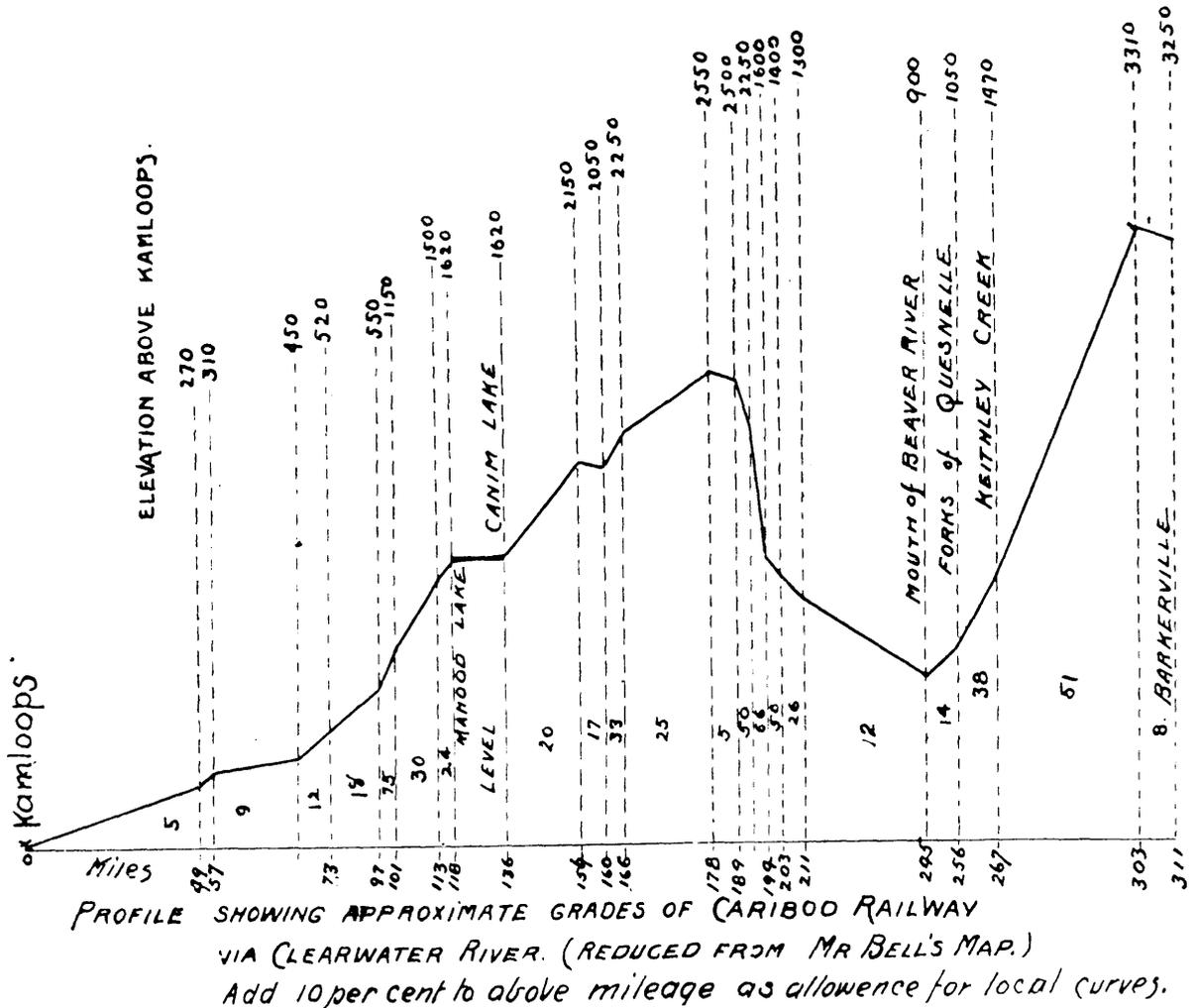
argentite or silver sulphide going off in slimes, but the product is very high grade concentrate.

Some wet or lixiviation process may be ultimately applied, when permanancy is assured, or the development of lead smelting in Kootenay may call for very favourable rates on such necessary ores as these would then become.

THE PROPOSED CARIBOO RAILWAY AND AVAILABLE ROUTES.

(By M. S. Wade, M. D.)

THE acquisition by the Cariboo and Omineca Chartered Company of the charter granted for the building of a railway to Cariboo from some point on



of later intrusive matter, and some native copper in a section much cut up with black porphyritic dykes.

Assuming the probability of the quartz veins becoming productive, there is another problem to face, and that is the mode of treatment. The gold-silver ores, with greater values in gold, are usually capable of easy and high concentration; even when highly sulphide they are more or less free milling. They are also readily treated by cyanide.

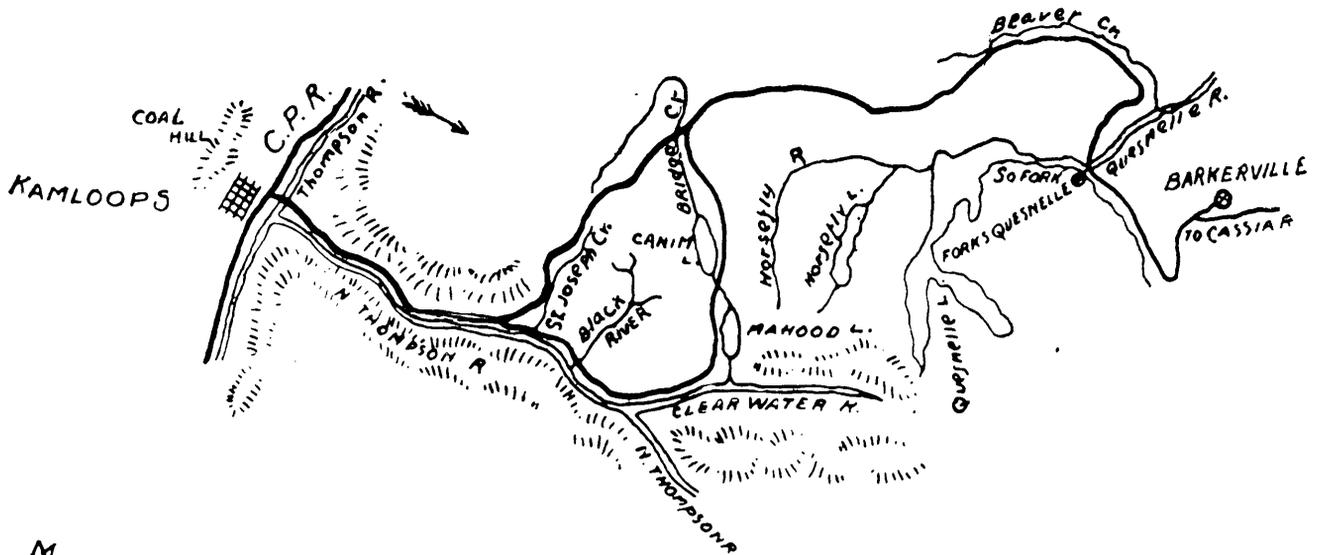
The silver-gold ores, value chiefly in finely divided argentite, are a more complex affair. There is usually a pay-streak of a few inches of high grade smelting ore, the remainder of the quartz vein carrying scattered values. Concentration is low, owing to the fine

the C.P.R. between Kamloops and Ashcroft, has induced the renewed and careful examination of the known available routes for railroad building to this rich northern mining field. Three such have been described by Mr. Bell, C.E., who, so long ago as 1886, made surveys and prepared maps and plans showing the distance and gradients of each.

Of the three routes described by Mr. Bell, two have Kamloops as the initial point, and both for a portion of their length, follow the west bank of the North Thompson River. At a point some seventy-five miles from Kamloops, St. Joseph Creek joins the main stream, and up the valley thus cut out by the creek, one of the routes lead to the Bridge Creek plateau.

The second route follows the North Thompson as far as the Clearwater River, where it continues along the valley of the latter stream to the point where Bridge Creek joins it. Hence, ascending Bridge Creek and looping between Mahood and Cansin Lakes, it ultimately unites with the St. Joseph Creek route at a common point, whence it proceeds north, and by the

countered on this route would seem to specially recommend it. Whether the surveyed routes are the only ones practicable is open to question, but of present known routes that by the Clearwater certainly offers the more conspicuous advantages and important avenues, which is the fact, that making the sweep round by Mahood and Cansin Lakes ren-



MAP SHOWING SURVEYED ROUTES OF RAILWAYS FROM
KAMLOOPS TO CARIBOO
(REDUCED FROM MR. BELL'S MAP.)



LONE PROSPECTOR MINE—NORTH THOMPSON RIVER.

valley of Beaver Creek reaches the Forks of Quesnelle. From this point it proceeds to Barkerville, and may thence be continued onwards to the gold fields still further north.

Though the length of the line if laid *via* the Clearwater would be greater than if either of the alternate routes were followed, the easier average grades en-

ders tributary to it a much larger area than does either of the other ways yet mapped out. The Horsefly has not been declared impassable, neither has the Blackwater, and could these valleys be utilised, while practically the same area would be opened up, the distance would be considerably lessened. For constructive purposes, the North Thompson River would be of service for taking in supplies and materials during favourable stages of the water, though the season is a short one. There is no doubt that the projected railway *via* the North Thompson and its tributaries would open up an extensive tract rich in timber, grazing lands, and mineral resources. Prospectors and others who have traversed this section are unanimous in the opinion that to the miner and rancher it is a most important district, lacking but transportation facilities to convert it, now neglected, into a land of promise and productiveness. A silver-lead belt is known to exist in that section; argentiferous galena has been located on the Homestake group of claims—upon which a great deal of money has been spent—near Adams' Lake, east of the North Thompson, and the Lone Prospector, a claim with a good deal of work done upon it, and for which a crown grant has been

secured, is in the valley of the North Thompson itself.

Numerous other galena ledges have also been found on the North Thompson and the Clearwater,

Cariboo Railway should prove a successful undertaking, alike beneficial to the builders and the country.



ON CLEARWATER RIVER.

and between the latter valley and the Quesnelle Lake country; copper ores have also been discovered, but the cost of getting in supplies and similar difficulties, due to the absence of more satisfactory transportation than afforded by a pack train, have, of course, militated against the proper development of these discoveries. This is, however, at present almost a virgin field for the prospector, and is worthy of better attention than it has yet received.

In the main valleys arable land exists; on the plateaux are fine stretches of incomparable grazing lands; but the isolation and remoteness of markets are not calculated to induce settlers, under existing conditions, to locate in this neighbourhood. There is an abundance of timber growing, and it is reported that in the vicinity of Clearwater Lakes there are groves of white pine of large size; and in the Thompson Valley cedar is very abundant. The wealth of the forest thus provided furnishes material for the establishing of the lumber industry in that section.

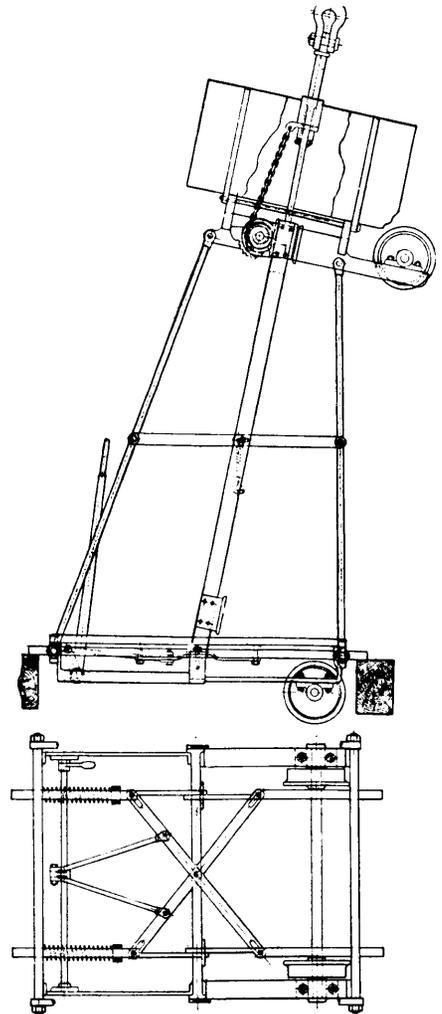
With the construction of a railway *via* the North Thompson and Clearwater, not only would the arable and grazing lands be eagerly sought after and quickly occupied, the argentiferous and cupriferous deposits worked, the timber utilised, but the coal seams near the Chuchuqualk Indian reserve, some fifty miles north of Kamloops, would then in all probability add another to the goodly list of industries the railway would promote and foster. With such industries along the line, together with the hydraulic and other gold mines of Horsefly, Quesnelle River and Cariboo in general, the Kamloops-

GRAY'S CAGE CHAIRS.

THESE chairs, which have been placed in the Hope, Leiter and other large mines, are adapted either for vertical or inclined shafts. Our illustration shows them as used for an inclined shaft.

The improvement over ordinary usage consists in having one set of chairs attached to the cage instead of a set of chairs for each shaft level. The chairs are thrown out by means of a lever, so as to rest upon wall plates at the several levels, and when the lever is out of operation springs draw in the cages so as to clear the wall plates.

These chairs are not only economical, substituting one set of mechanism for many, but furnish the convenience and security of operation from the cage. They are the patented invention of a Mr. Alexander Gray, of Butte, Mont., and are manufactured and sold by Fraser & Chalmers, Chicago, Ill.



THE MONTH'S MINING.

HARRISON LAKE.

(From Our Own Correspondent.)

ALTHOUGH Harrison Lake mining has not attracted much attention of late, the development of the district continues and a number of claims are being worked at various points, but many properties staked at the time of the excitement of two years ago have been allowed to lapse. In summarizing the properties that are being developed I must commence with the White Star Group, situated 28 miles from Douglas, on the old Cariboo wagon road. This group consists of five claims as recently surveyed. The work is being done on White Star No. 3 under the management of the discoverer and part owner, Mr. McAdams, and consists of a shaft down about 70 feet with cross-cut in galena ore—some of it very high grade—carrying gold. The ledge, which is very wide at this point can be traced on the surface for a long distance. Some ten men are employed on this mine. Mr. Wm. Murray, in the near vicinity, is working on an immense ledge of pyritic iron ore, closely resembling the Rossland ores. This ledge runs N.W. and S.E., and shows up on the other side of the Lillooet River on 27-Mile Creek, where the Iron King and other claims have been taken up by Clark and Smeel. The ledge here shows a width of about 20 feet and assays of \$20 to the ton have been obtained. Ten miles further down towards Tipella, on the same side of the Lillooet river, we come to Fire Mountain. Here the Fire Mountain Gold Mining Company control some forty claims, all of which I think have been surveyed. Since shutting down the Huntington mill last winter the company have done a large amount of prospecting and development work, and have very promising ledges on nearly the whole of these claims. On the Hardscrabble claim a deep open cut 40 feet long has been made and a 50-foot shaft sunk on the vein, which is copper and galena, with a percentage of lead, the assays giving as high as \$45 gold and lead. This ore can be successfully concentrated. On the Indian Chief are six veins averaging 18 to 24 inches wide, and only a few feet apart, of pyrite and gold quartz, with a large percentage of visible gold on the surface. A 26-foot shaft was sunk on the ledge and now in 47 feet is being run a tunnel to cross-cut the lead. On the Money Spinner the tunnel is in some 400 feet. At 320 feet a porphyry dike was encountered and the management have decided to sink a shaft following the incline of the ledge about 50 feet. This shaft or winze is situated about 300 feet from the mouth of the tunnel and the ore appears to get richer, especially in copper as depth is gained. It is meanwhile ascertained that the porphyry intrusion is not of great extent as the ledge shows on the surface further up the mountain running through the next two claims, Queen and Prince, with the same average wealth of 3 to 4 feet, and the same showing of free gold as characterized the Money Spinner on the surface. There is no doubt this will be a great mine when the proper methods of extracting the ore is understood and applied. The Golden Treasure Mining Company also have a group of five surveyed claims on this mountain. The ledge is the same as that on the Indian Chief, of which the Snow Storm is an extension. The ledge is being followed by means of an incline shaft down now about 42 feet, the ore giving average assays of \$15 gold and copper. This mountain is simply a net-work of ledges, carrying free gold and copper on the surface awaiting capital to develop them. Next we come to the Providence Mining and Development Company, of Harrison Lake, which at present is being worked on a larger scale than any other mine in the district, of course the situation on the shore of the lake with excellent steamboat facilities renders it a comparatively cheap mine to work, especially when the advantage of cheap transport is taken into consideration. This mine is under the general management of Mr. Adams, local manager, Mr. McMillan, and a force of about 30 men is employed. The company have so far discovered three parallel veins on the property, Nos. 1, 2 and 3. A shaft has been sunk 80 feet on No. 1, at the bottom of which a tunnel is being driven to cross-cut No. 2, which they expect to reach any day now. Some 50 feet from No. 1 No. 3 is still another 300 feet further, and it, together with No. 1, is very rich gold quartz, which it is thought can be treated by the Cyanide process; while No. 2 is largely galena and smelting ore. The Wm. Hamilton Company have just installed a six-drill compressor plant for the company at a total cost of some \$6,000, and it is expected that in the early spring the shipment of ore will be commenced in earnest, or as soon as the depth of water in Harrison Rapids will permit. A short distance back of the

Providence, Mr. Paul Watelet is carrying forward work on the Golden Crown with characteristic energy. Six men are being employed and a tunnel is being driven to cross-cut the ledge, which is supposed to be an extension of the Providence. The tunnel is in some 80 feet, and it depends upon the dip of the lead how much further they will have to go. Both of these last properties have splendid water privileges on the ground. This district, like any other new mining district, needs capital to develop it, and there is no doubt that owing to its proximity to the Lillooet country it has been seriously injured by the collapse of the Golden Cache, and will take time to recover from its effects, unless some very startling discoveries are shown up. One thing in its favor, our ledges are not blankets but most of them are true fissures, but have never been developed sufficiently to show what depth will do. Another feature which everyone recognizes who has been over the ground, is that the proper route for the Northern Railway, "so much talked about in Vancouver at present," should start at Tipella and follow the Lillooet to the Pemberton Meadows, thus avoiding all of the serious engineering difficulties on the route proposed by the promoters, and also that it would be over 100 miles shorter, as well as having local traffic from the start. The district is still under obligations to the owners of the steamer City of Tipella for their postal facilities, as the Dominion Government seem to have completely shut their eyes to the needs of this district in that respect, notwithstanding the many petitions that have gone to Ottawa. People remember that it was not thus in the time of the Conservatives.

ROSSLAND.

(From Our Own Correspondent.)

War Eagle.—The chief work on this mine is being done on the installation of new machinery. This should have been in place before this date, but the management have not been too lucky in their arrangements and delay has ensued. However, everything is now in shape and the completion of the big job on the hill above the Le Roi is near at hand. The railway service is not as yet adjusted and the shipments from the mine are not as large as they would have been under better shipping facilities. The Trail smelter have refunded the mine the difference between \$7 and \$7.50 on the War Eagle, having furnished the daily contracted amount of 175 tons for a period of six months. This amounts to \$16,000. A fresh dividend has been declared, and the fortunate shareholders received a cent and a half per share. This is practically a monthly payment and therefore amounts to 10 per cent. per annum on the dollar share, or 6 per cent. to those who purchased at \$3. The value of the shares is advancing, as it is inferred from the ease which the mine has paid its dividends on an incomplete machinery and a not too good shipping service that with these two factors being placed on a proper basis the profit should be much greater in the near future. Nor is this taking into account the prospects of fair returns from the Crown Point on the south belt. Work has been discontinued for many months since the faulting of the strikes in the spring of 1897. It is an open secret that the manager thinks very highly of the property nevertheless. With the conclusion of the improvements on the main property it is possible that work may yet be resumed on the out-lier on the south belt.

Le Roi.—There are about 240 men at work on this mine. Their energies have been of late chiefly directed to the careful timbering of the various workings on the mine. This is practically completed and shipments, which have necessarily suffered somewhat, will be resumed. Still for the present they will be kept down till, in the opinion of the management, the development work is quite apace with the shipments. At present the shipments are to be confined to 200 tons daily, but this will shortly be increased to 300, and then to 400, at which figure it is expected that the mine will be able to sustain the output. As the B. A. C. are reported to intend to send the whole of its ore to its smelter at Northport it will readily be seen that a substantial addition to the capacity of the works there is very necessary. The chief work of the mine outside the timbering is centering on the main shaft, which is now down 850 feet, and will be carried on to the 900-foot level. Drifting is in progress at the 700-foot and at the 800-foot level.

White Bear.—Work is steadily proceeding on the cross-cut at the 250-foot level, where the ore is looking good, though of a low grade. It is thought that there is sufficient of a paying quality to allow the shipments being started in the near future and thus place the White Bear on the shipping list.

Iron Mask.—The issue of the late preliminary case between this mine and the Centre Star has given a stimulus to the belief in this fine property. The electrical compressor is nearly completed and should be at work by the 1st of February. Work is proceeding in all directions. The upraise is within a few feet of the surface. Drifting is going on east and west at the 250-foot level and the quality of the ore is better than hertofore met on the main level. A level is being driven to meet the Centre Star tunnel, which will connect the winze with it. This is being undertaken in view of the litigation between the two mines and is expected to settle the Iron Mask view of the case. Should the court take the side of the Iron Mask people the value of this mine will be considerably enhanced.

Centre Star.—Progress is being made on the main shaft, which is down to the 200-foot level and is being continued down. A prospecting shaft is also being undertaken on the north vein. It is the intention of the management to install a forty-drill compressor at a 90-lb. pressure, and also to put in an electric hoist. The contracts for the arrangements in contemplation are completed.

Monte Christo.—Nothing is being done. It was reported that work was to be started after the expertation of the mine early in the year. This has not come off. Nothing can be learnt as to the intentions of the management, beyond that it is indefinitely stated that the report on the property will be made some time this spring.

Virginia.—The 500-foot level has been reached and a cross-cut will be driven to meet the ore body, which is expected will be met near at hand, as the ore-chute is supposed to dip to meet the main shaft at depth. The management seem confident as to the result.

Iron Horse.—Work is being pushed rapidly on the main shaft, which is a double compartment. It is now down about 140 feet. There are two machines at work and work is going on in eight-hour shifts.

Commander.—The shaft is now down to the 300-foot level, and is being carried on further down. At the level named drifting is going on in both directions and some fair ore has been encountered.

Gertrude.—The shaft is down some 165 feet and is timbered all the way. It is intended to carry it on to the 200-foot level and then cross-cut both ways. Not only is the main ledge of the property expected to be met but it is thought that the cross-cut should also expose the No. 1 vein.

Mascot.—The electrical motor has arrived and the new compressor and machinery are in full work. This is the first of the kind in the Dominion, but this camp will shortly see a few more put to work. The War Eagle machinery is also of this type. Work is principally proceeding in the tunnels, though good progress is also being made in the winze.

Novelty.—Work is still proceeding on the cross-cut, which is now in some distance. Nothing new is reported.

Evening Star.—Drifting is going on in the lower tunnel and some very good-looking ore is being met with.

Jo-Jo.—Work is proceeding on the shaft which is down about 600 feet. Some fair ore, which assayed \$16 to \$18, was lately met with.

Coxey.—The west drift in the upper tunnel has conclusively proved the presence of a large body of fine ore, though of a not very high grade. As this is at the point of fracture this is to be expected. But similar work is now being undertaken on the lower tunnel, where the same lode is expected to be encountered at greater depth of higher value. So far the development has shown the prognostication to be accurate.

Giant.—Work has been resumed on the shaft and a cross-cut at its foot is now undertaken.

Jumbo.—Some negotiations are on foot with regard to the sale of this mine. An examination by W. Hastings of the War Eagle and by Messrs. Freeburn and Ferrier, has been made, but the report is not made public. Work is proceeding on the upper and the lower tunnels. The latter is in about 120 feet.

Annie.—This mine is still worked from the Josie, and the drift is in 80 feet on the vein. Values are improving, and it is probable that shipments will be started with the advent of spring.

No. 1.—The cross-cut at the 200-foot level in the shaft (not the 200 as reported last month) has evidently struck the vein that was located in the tunnel. It is fifteen feet wide but is low grade. The main tunnel is now in 560 feet and the vein is about 5½ feet in width, low grade as in the cross-cut.

Josie.—A raise is being made to connect the 300 and 100-foot levels from the point where the strike was made. The

ore-chute is still averaging four feet in width, carrying good value.

Nickel Plate.—Much work has been done on this mine, especially at the 200-foot level, where Superintendent Haskins has done over 3,000 feet of work since last May. The ore met with in development is considered to be encouraging.

Great Western.—Sinking is proceeding from the 200-foot level and will be carried on down to the 300-foot, where cross-cutting will again be done.

Columbia-Kootenay.—Work is proceeding in Nos. 4, 5 and 6 tunnels and an upraise is being made between Nos. 4 and 5. Very good ore has been met with in No. 5, and the ore in No. 6 has proven to be of the value expected. Cross-cuts will shortly be run on this level in order to discover the mineral matter in that tunnel thoroughly. The ore in No. 4 is of shipping value and that in the others, especially the late strike in No. 5, is not very far behind.

Deer Park.—There are now a total, including woodmen, of thirty-three hands employed on this mine. The work is being concentrated at present on the 100 and the 150 foot levels where the showing is very satisfactory.

Grand Prize.—Work has been stopped on this mine, but will be resumed in the spring. Three shafts have been sunk on the property on three different ledges. One of these is the Deer Park vein. The main shaft has been sunk and timbered 46 feet, and the assays from the ledge matter exposed have run as high as \$21. The other shafts are down 38 and 15 feet respectively but do not have so good a showing as that of the main shaft at the east end of the property.

Homestake.—The shaft is down about 215 feet. As it is being carried on outside the vein nothing can be said of the progress of the mine. On the attainment of the 300-foot level a cross-cut will be made to cut the vein. If the values are not up to expectation the shaft will be immediately carried on down another 200 feet.

Abe Lincoln.—A new stage in the development of this mine has been entered upon. The main shaft is down 200 feet and a cross-cut is being driven to the south to intersect two veins which have been uncovered at the surface and which run into high values. This will entail a drait of some 150 to 200 feet. On the completion of this the cross-cut will be run in the opposite direction to cut the third vein which dipped north from the mouth of the shaft.

Lily May.—The main shaft is being continued and is nearing the 200-foot level. Two shifts are being run.

Silver Bell.—The first contract for the sinking of the main shaft has been completed. The vein has not been met but the rock encountered has been so well mineralized as to encourage the management. Work has ceased, but as the company has still plenty of funds it is probable that it will shortly be resumed.

Velvet.—Work is going on in the main shaft though nothing of any importance has been reported.

Sunset No. 2.—The long cross-cut which is expected to cut the vein on the discovery ledge at a depth of 400 feet was on the 15th January with thirty feet of the expected termination. The vein was not cut at that distance, but two very excellent stringers have been encountered which carry good values have been run in upon. The vein which has already been sunk upon from the surface is expected at the 400-foot level to have widened, judging from the indications in the discovery shaft, to a big body of ore. If the values which were found at the surface have not increased with depth they will still be, it is thought, good. The assays from these showed nothing less than \$50.00, and ran as high as \$91.30. Thus the strike which is daily expected will be of the utmost value. Not only will it prove immediately the worth of the Sunset, which it will at once place in the list of shipping mines, but the consideration in which the south belt is held will be very much higher. So note it be.

Y.M.R.

(From Our Own Correspondent.)

The following is my summary since last issue of the *MINING RECORD*:

Mr. T. A. Helm, one of the owners of the Rio Grande Group, has put a force of men at work on his property, which is situated on Porcupine Creek. A large amount of development work has already been performed upon the property, which shows up a well-defined ledge carrying good values. Messrs. Cole and Chape are working the Pathfinder on Barrett Creek, the ledge of quartz and iron being here eight feet wide. Mr. P. White has let a contract for the laying of steel rails up to the Wilcox Mine, and intends to make a number of trial shipments of ore. In the spring a mill is to be erected upon this property. Workmen are busy putting the finishing

touches to the Ymir Mine mill, and at present are employed installing the electric light plant, and building the flume. All the machinery is here and the management expect to have the mill in operation by the end of February. The Ymir Power Company has been incorporated for the purpose of developing the Wild Horse falls for power purposes.

The Simcoe Gold Mining Company has been incorporated at \$1,000,000 in \$1 shares by E. Vint, of Rossland, B.C. The company has taken over the Big Horn Group, consisting of five claims, which are situated on the South Fork of Porcupine Creek. Much work has already been done on these claims. Iron which assays as high as \$63 in gold have been claimed by the locators.

One of the best-appearing prospects in this district is the Hope Mineral claim, located on Barrett Creek. The vein is a true fissure in porphyry, the lead being 4 feet wide. Only 20 feet of work so far has been done, but the lead has widened out from 2 to 4 feet, having an average value of \$34.50 in gold. The ore being mined is identical with that of the Porto Reco. Messrs. Buckworth, Cole and McMullen own the adjoining claim, which has the same showing as the Hope.

SLOCAN.

(From Our Own Correspondent.)

The year that has just closed has been a prosperous one for the mine-owners of this district; but this statement does not necessarily imply that it has been all that could be desired to the actual resident of the Slocan. The production most certainly shows a considerable increase over '97, but the conditions have been such as to conduce to steadier and more conservative methods of mining. This, of course, looked at in the right light is a distinct advantage and its effects will doubtless be seen in all-round improvement during the ensuing year.

It is strange what a nomadic disposition the majority of dwellers in mining camps evince; notwithstanding the palpable advantages of staying in a country of proved capabilities, as the Slocan is known to be, the least little excitement from outside suffices to draw their attention and too often their presence as well. Last winter and spring we suffered from an exodus to the much-boomed Klondike, and this year it is being repeated on a smaller scale to the Boundary Camp. Without offering any disparagement to that promising field for enterprise and industry, I submit that the vast majority who are leaving would find it very much to their interest to stay where they are.

Our home smelters are at last awakening to the fact that there is such a district in the province as the Slocan, and that the output of galena therefrom is indubitably worthy their attention. One serious obstacle at present seems to be the scarcity of siliceous or dry ores to smelt in conjunction with those containing an excess of lead, but doubtless this will be overcome when communication with many of the newer camps is finally established. Both Trail and Nelson are now in the field for lead ores and when sufficient has been accumulated, operations will commence at both places. The advantages to the shipper are, of course, obvious; he can visit the smelter personally and supervise the sampling without much effort, receiving almost immediate returns in place of having to wait from three to five weeks as is frequently the case when dealing with American concerns. Any difficulties arising from the Customs regulations are, too, thereby avoided, which is a source of considerable satisfaction to all who have experienced trouble in the past.

An important move is being made in the proposed erection of sampling works at Rosebery. The subject has, however, been so frequently discussed of late that there is no need to go into the same arguments again, it is enough to remark that this time there is no doubt about the scheme being bona fide, those having the work in hand being men of experience and integrity, who will strain every effort to bring it to a successful issue. I can speak for the whole community I am sure in wishing for it the hearty co-operation and support of all mine-owners and ore-shippers in the Slocan.

A good many mines around Sandon have been reducing their forces lately for one reason or another; the facilities afforded for shipping depend so largely on the state of the roads, that the number of men actually employed will always vary considerably; a slight thaw sometimes renders the roads and trails absolutely impassable, and in some instances as at the Idaho, the danger from snow-slides is so great that men refuse to work under any consideration.

The Whitewater Deep, aient the prospects of which there has been so much speculation and at times unfavorable criticism, has been closed down as a result of orders received

direct from London. The cause of this action is not made known and the future policy of the company is wrapped in mystery.

The Monitor at Three Forks, after lying idle so long is again being operated, taking its place at once on the shipping list. The ore from this property, it will be remembered although of the usual variety of Slocan galena carries appreciable values in gold; enough under ordinary conditions to more than balance the cost of mining.

As a result of the completion of its tramway, the Last Chance is beginning to assume its legitimate position near the head of producing mines. It is now sending out a car a day on an average and if it continues at this rate, will not long remain behind the leaders.

The ore-body at the Payne appears to full maintain its old-time excellence, it is reported that that in the face of No. 4 there is over six feet of sparkling galena. The concentrator at the Noble Five has not apparently become rusty or deranged in any way by long disuse; it was operated for a short time last week on some of the ore now being obtained from the mine.

Much has taken place on Silver Mountain during the month; the Bosun continues as formerly, with the exception that in the face of No. 2 tunnel three feet of ore has been struck at a distance of nearly 350 feet. This mine has now passed the 500-ton shipping mark, and is easily able to continue at its present rate of production, viz.: a hundred tons a month. Lower down on the flat a shaft has been sunk in order to catch the vein nearer the lake, but as it is already seventy feet deep and still in wash, it is uncertain how much work will have to be done before it is accomplished. At the first annual meeting of the company, held in London, the other day, every satisfaction was expressed at the condition in which the shareholders found themselves; emphasis being laid on the fact that in addition to meeting current expenses, they had just received a draft of \$10,000 from their manager at New Denver. Of a radically different nature was the meeting of the company operating the unfortunate Galena Mines, and in justice to the Slocan I wish to remark that the difference lay, not so much in the value of the properties obtained, but in adhering to careful business principles in the one instance, as compared with the grossest extravagance and over-capitalization in the other. It is to be hoped this latter will prove a never-to-be-forgotten lesson in the matter of again placing Slocan properties on the London market.

The Fidelity, adjoining the Bosun, made a small three-to-one shipment during the month, but actual operations will probably not be begun for some time yet. Ore is being packed down from the Marion, which lies south of the California, and very soon a car lot will be on its way to Trail for treatment. This is one of the most promising properties on the hill, and with two good veins, both showing ore, should eventually make a name for itself. A curious feature was observed in driving one of the tunnels; the ore, which consisted of solid galena, suddenly gave way to a streak of pure pyrites, and this continued uninterruptedly for a distance of over forty feet, when it resumed its normal appearance. Such a condition has not, I believe, been observed in the Slocan before, the presence of pyrites being quite the exception in veins of galena. The Convention, in the same locality, likewise gives indications of proving very valuable with the expenditure of a little more work. Fine ore is being encountered in the tunnels, and it is generally understood that a deal for its purchase is now pending in Spokane.

From Silvertown the usual satisfactory conditions have again to be recorded; two mines, namely, the Vancouver and Wakefield, are shipping almost continuously, while the Comstock is only prevented from following suit by the fact that the concentrator is not quite ready for operation. Excellent reports, too, are heard from other properties up the Creek, including the Fisher Maiden and Emily Edith. The management of this latter, by the way, endeavoured to stop all Sunday work at the mine, a proceeding which was fraught with an element of danger, as was evident when the men came down the hill in a body and refused to work under these conditions. At the Bosun, on the other hand, the men acquiesced in the arrangement with a good grace, and as the mine is situated not far from either New Denver or Silvertown, the closing down on Sunday is in this case proving a benefit to all concerned. For a like reason everyone employed there, is allowed the privilege of boarding where they like, any unpleasantness which is likely to be observed in connection with a mine boarding-house being thus obviated. The question of Sunday labour is receiving serious attention from the religious representatives in Nelson, the idea being to present a petition praying the Government to make Sunday closing imperative. I have authority for saying that it will meet with

the most strenuous opposition from the mines in the Slocan, men and masters being a unit in their condemnation of such a measure, and rightly so I think. While it is doubtless a splendid arrangement where practicable, there are so many instances where it is absolutely the reverse, that to make the observance compulsory would have a sorry effect on the mining industry.

Eight-Mile Creek, which is situated between the Galena Farm and Ten-Mile, both silver-producing districts, gives every evidence of becoming known as a gold region. Even at this season of the year specimens of remarkably rich quartz are finding their way to be assayed.

The Enterprise has relapsed into a state of coma, whatever the reason; there will doubtless be a time somewhere in the future when we shall reap the benefit of possessing a mine of such latent potentialities, but the question is, when? During the prevailing soft weather great danger from snow-slides exists in that neighbourhood.

The purchase of the Evening Star on Dayton Creek is proving to be a stroke of good fortune for Hugh Sutherland; the vein, which contains typical dry ore appears to have been faulted and fractured a good deal near the surface, but so far it has always been a comparatively easy matter to relocate.

Much talk has resulted over an alleged strike on the Two Friends, and I hear that preparations are being made to ship almost immediately. Without wishing to detract in any way from the value of this discovery, I desire to protest, as many others have done, against the absurdly boom methods frequently employed to gain prominence to a particular mine or district. So many—at one time—marvellous mines, sink gently into oblivion so far as the public eye is concerned and are never heard of again, that one can be excused for asking the public to accept all such reports with the proverbial grain of salt. Another unsuccessful effort appears to have been made to put the Arlington on its legs again, at least so far as visible results go. All kinds of agreements are reported to have been made, but this has been done so often before, that people are beginning to lose faith in anything short of actual operations.

HOWARD WEST, A.R.S.M.

SILVERTON.

(From Our Own Correspondent.)

Considerable activity has been shown here of late in the transfer of mining property. The Noonday claim, adjoining the Galena Mines, has been leased by Messrs. Benedum & Stewart Bros. of Silvertown, who have started work on the properties. The lease will run for eight months, the lessees having the privilege of bonding it at that time on a basis of \$35,000 for a further sixteen months. The Fidelity Fraction, lying near the Bosum Mine, about two miles from here, has been sold for \$1,000 cash by a Silvertonian to Mr. G. N. Dawson, owner of the Essex Group on Silver Creek. Another deal was begun this week, a ten-day option being taken by W. J. Wilson of Nelson on a one-third interest in the Tremont. Osborne & Nicola claims, on Silver Creek, near the Fisher Maiden Mine, the price to be \$3,000.

The Wakefield and Vancouver are the only heavy shippers. All is ready for the installation of the machinery at the Comstock concentrator, the present delay being caused by the non-arrival of one car of machinery, it having been on the road now nearly two months from Chicago. The closing down of the Galena Mines and the determination of the company to suspend operations have occasioned absolutely no local concern. Locally no interest is taken in the action of the company, popular opinion going to show that the Galena Farm flat has received no set-back by the failure of this particular company. Three men are still working on the property.

EAST KOOTENAY.

(From Our Own Correspondent.)

Wild Horse.—News of a rich strike of gold quartz comes from Donald Creek, a tributary of Wild Horse Creek, distant from Fort Steele six miles. The news, which is well authenticated, is that the ledge has been opened up by a drift some 75 to 100 feet lower down than the No. 1, or main drift. There is a full breast of ore in the cutting and the same rich pay-streak of 18 inches on the hanging wall. Undoubtedly this property has a very promising future. It is well situated, and has there every advantage in the way of good tunnel sites, water powers and timber. The values are equally good in both tunnels.

Bull River.—A small force of men are now at work on the Chichamum Stone claim and have moved into their new cabins for the winter. The tunnel on this property is now in

50 feet, and a body of copper pyrite carrying gold, the average value of which is about \$70 per ton has been exposed.

St. Mary's District.—On the North Star the new machinery is in good working order and a force of 35 men is employed at the mine. The chief development work at present is being done close to the intersection of the North Star, Midnight and Gold Bug claims. At this point a double compartment shaft is being sunk and is now down over 120 feet through a porphyritic dyke. It is the intention of the owners to cross-cut for the lead, which lies a short distance to the west of the shaft, when sufficient depth is obtained for their purpose. The porphyry carries gold and shows traces of copper.

The owners of Sullivan mine are erecting a gallows for the main hoist and will shortly have the balance of the machinery in position, when the number of hands will be considerably increased.

Moyai.—At the St. Eugene the construction of a 200-ton bin on their concentrator site, which lies between the C.P.R. track and the Moyai Lake, has been completed and surveys for a tram line from the mine to the concentrator site has been made.

Windermere.—Work is steadily progressing on the Delphin Group on Toby Creek. The main shaft is now down 50 feet and shows the ledge to have widened out to 3½ feet of solid galena with a gross value of \$98 per ton. There are 60 tons of ore now on the dump ready for shipment.

THE LONDON FLOTATION OF THE LE ROI.

(From Our Own Correspondent.)

24 Coleman Street, London, E.C., Jan. 7, 1899.

AFTER many days the Whitaker-Wright group have at last floated the Le Roi on the London market, passing over the property "at a profit," in the naive language of the prospectus, to the new company, apparently as and from the 2nd of December, 1898. I am still very much in the dark, however, as to what is implied in the prospectus as to the exact nature of the transactions. The opening paragraph runs:

"This company has been formed to acquire and work the celebrated dividend-paying mines known as the Le Roi." Then later on we are told:

"The British-American Corporation having acquired control of the Le Roi Mining and Smelting Co., of Spokane, have entered into a contract with this company, dated December 2nd, 1898, for the sale of the property to the company at a profit."

1st. Is the new company simply securing a transfer of the control which it has cost the B. A. C. so many dollars and so many months fighting to obtain?

2nd. Is the smelter included in the control?

3rd. Does the B. A. C. actually contract to transfer (a) the Le Roi, and (b) the smelter, or simply the mine itself?

We are still unenlightened on these very material points; and those who have subscribed their money,—and it is at present impossible to say how much was put up by the public—have done so blindly, simply trusting to the alluring statements put forward in the press regarding the famous property. But then, we are used to bold statements from the Whitaker-Wright group. Did I not over and over again point out that the prospectus of the B. A. C. itself was absolutely unintelligible. Then an "option" on the Le Roi was included. Let us hope the "control" will prove a more tangible asset than the option. Of course Mr. Whitaker-Wright can draft his prospectus in the way which best suits his purposes, but I do really think that to ask the public for a cool million pounds sterling on the prospectus put forward on December 6th was really trading too much on the confidence of those investors who compose the Whitaker-Wright companies. Beyond giving the cabled reports and opinions of half a dozen experts,—connected in most cases, I believe, with the group—there was absolutely no information on which to base an opinion as to the value of the property, which one of the most valuable of the Le Roi assets—its smelter—was practically ignored—which makes me more and more convinced that this 'bonne bouche' is being left for subsequent treatment. But despite the barrenness of the statements the issue seems to have been fairly subscribed, and the shares were rushed up by the group's dealers in the Stock Exchange to a premium of about £1, a purely artificial movement. The fact of the matter is, Whitaker-Wright understands the art of working the press for all it is worth. In proofs of this I may assert that to my certain knowledge he paid a sum of about £1,500 to two papers alone in connection with the flotation of the Le Roi during the four days the lists were open. The advertising

bill" in connection with the Le Roi—quite apart from any preliminary press work—must have run into five figures. Add to this lavish display of advertising the creation of a premium necessary to help the issue to a successful termination, and it will be readily seen that Whitaker-Wright and his friends did all in their power to make the Le Roi "go." It was asserted—ostentatiously—that the issue had been over-subscribed. I wonder how much of this excess subscription could be classified under the heading of "Under-writing." I believe it was largely "under-written," a fact which does not inspire one with admiration for a group, presumably so strong and influential, for if Whitaker-Wright and his friends felt so sure that the issue would be a great success—vide the Whitaker-Wright mouthpiece, the "Colonial Goldfields Gazette,"—it seems a little foolish paying big commissions to other people to secure applications that they were certain would be put up by the flock of financial sheep who follow this particular financial shepherd. Since the issue of the premium has fallen away to half on each £5 share, making the London valuation for the Le Roi—all the while the group are in a position to support their own market—£1,100,000 presumably exclusive of the smelter. The Le Roi is a good mine, and its shares even in their new form and run by the Whitaker-Wright crowd may be a good investment at £5 10s each, but for my own part I sympathize with the shareholders in the fact that their fortunes are apparently to move in the same channel as those of the rest of the Whitaker-Wright companies. The shares of the chief Whitaker-Wright Company, the London and Globe Financial Corporation, despite its recent dividend stand, at a discount of about 25 per cent; the B. A. C. shares close to-day at about 30 per cent. discount, while a number of the less brilliant concerns which have been rushed out by this promoter of many companies—well, they are very much in the rear, and it would be difficult to find buyers for some of them at any price. Indeed, quite a number of his Westralian schemes are to be merged—almost immediately, it is said, into one big company, presumably on the bundle of stocks theory. Had the Le Roi been floated by some big firm of such repute as the Rothschilds, Antony Gibbs, or John Taylor & Sons, the public would have thought better of its prospects. As it is it is purely a Whitaker-Wright group, and whenever anything depressing occurs regarding this particular coterie, down will go Le Roi in sympathy. Sneeze he ever so slightly, the rumour will trot round the city that "the City Llama" is ill; if he is away from the city for a few weeks, "his market" is left unsupported; let one of his companies issue a bad report,—down will go Le Roi and all the other Whitaker-Wright shares, for sympathy is a very patent factor in the London mining market, and the shares of the Whitaker-Wright companies are hyper-sensitive in this respect—and when we remember and analyse the course of events carefully it is perhaps not surprising that this should be so. While glad to find the Le Roi at length figuring in the list of British Columbia shares dealt in in the London mining market yet for the peace of mind of those who subscribed for the recent issue of share I could have wished that some other group had introduced the famous Rosslund mine to the English public. The Whitaker-Wright group is far too mercurial to satisfy the requirements of those who believe that the Le Roi should be regarded more in the nature of a permanent investment than a mere mining venture.

A MONTH OF MEETINGS.

While the B.C. market has been as dull as ever the investors who have been putting up the funds during the past two years to develop the mines of the province have been afforded ample matter for careful digestion. December is the month of meetings, and in the last few days of the old year there is always a rush of companies anxious to comply with the requirements of the Joint Stock Companies Acts. Among the British Columbia and Klondike meetings were the Hall Mines, at which it was decided to sanction the scheme put forward by the directors for increasing the capital by the issue of £50,000 debentures to properly develop the mine; the Dominion Mining Development and Agency Co.; the Klondike Hydraulic—a company I severely criticized at its inception—decided to wind up; the White Pass and Yukon Railway—a full report of whose meeting I send you herewith; the New British Columbia Development Corporation—a Leeds concern, of which very little has been heard; and Klondike Bonanza, a company brought out to buy up Ironmonger Sola's claims, and presided over by Lieut.-Col. MaceGorge. This concern has had some startling experiences, and if I had space I could tell you tales about many of these Klondike companies which would throw a curious side light on the amazing simplicity of the English investor's

character, proving beyond all manner of doubt that the fool and his money is indeed, in this at all events, soon parted. At the meeting of the Galena Mines, Limited, it was resolved to wind up, and after the shareholders had listened to the very melancholy statement put forward by the chairman of this over-capitalized concern, it did not seem possible that any other course was open to the company. Mr. Callahan seems to have worked incalculable mischief to this concern. The meeting of the Vancouver and B.C. General Exploration Co was not much more cheerful than their offspring, the Galena Mines, but the directors are hopeful of better times, and satisfactory results from some of their other properties. A moderately capitalized concern, the Northwest Mining Syndicate—according to the report and statement at the meeting—seems to be doing well. The most satisfactory statement put forward by any B.C. company was that of the London and B.C. Goldfields, Limited, an ably managed concern, whose progress amply justifies good opinions formed of it at its inception. Twenty per cent in cash, and one fully paid up share for every ten, L. & B.C. shares held is not a bad year's result. The price of the shares is double that of the B. A. C., for whereas the latter are only about 14s 6d, the former, even ex their dividend and share-bonus, stand at £1 10s each. There was quite a little breeze at the meeting of the British Columbia Development Association, Limited, while Sir Charles Tupper had to sing in a very minor key at the Klondike Mining, Trading and Transport Corporation, wish and fulfilment having been very much served. Satisfactory statements were put forward at the second general meeting of the shareholders of the Alaska Goldfields, Limited.

PUBLICATIONS.

THE SLIDE RULE.—Under this title Messrs. Spon & Chamberlain, of N.Y. have recently published a very handy and valuable book, the author being Robert Gordon Blain, M.E., Senior Demonstrator City Guild's Technical College. The moderate price of this work is \$1.00, and after a perusal of its pages we can very cheerfully recommend it to the public.

It is in fact a teacher of the theory and use of the slide rule, for making calculations. The author has very clearly demonstrated the advantage gained through the use of this rule. He has also compiled a large number of examples in which all the usual difficulties are fully brought out and explained. By a careful study of these even the beginner can in a short time master the use of the slide rule for making calculations in engineering, mechanics, hydraulics and electric technology, which would, if worked out by ordinary arithmetical methods occupy much valuable time. The early pages treat of contracted arithmetical methods and logarithms. These are followed by a comprehensive description of the slide rule itself and instructions how to read and use the rule, as well as the cursor and goulding cursor.

Circular slide rules, especially Prof Fuller's spiral scale, are discussed, briefly but very comprehensively. Full instructions for the use of this instrument are also given and carefully illustrated by examples, to the solution of which the author has evidently devoted much time and care. The publication of this little book is calculated to encourage the universal use of the slide rule as an aid to students, engineers and others.

"Lectures on Explosives," by Willoughby Walker, U.S. Artillery Instructor, Fort Monroe, Va., published by John Wiley & Sons, New York.

This book is intended as a guide to those engaged in the study of explosives, and the writer has certainly presented the subject in a very systematic and lucid manner.

Beginning with the least sensitive explosives the author explains the chemical composition and mode of manufacture. He then passes on to consider the so-called "High Explosives," embracing the dynamites, nitroglycerine, explosive gelatine, melinite and a number of other modern explosives.

In the introductory lecture the writer deals with general considerations respecting explosives. The products of explosive reactions are represented by equations carefully worked out and explained in detail.

The chapter on thermo-chemistry forms a solid basis for the study of explosive and detonating materials, while the "General List" of explosive substances is of great interest and importance.

The chapter on ingredients entering into the composition of explosives gives the proportions, source and chemical

characteristics of all the ordinary substances used in the fabrication of explosives, as well as various tests that may be employed to determine the purity and strength of the various substances.

The manufacture of ordinary "Black Powders" (gunpowder) is fully explained, following which is much interesting information concerning the so-called "Coca" powder, which held such a prominent place as an ordnance powder in European combines up to a recent period.

The next lecture is on the chemical theory of the combustion of gunpowder, explaining the nature of the changes brought about by the action of heat on the various constituents of the powder.

The explosives of the "Chlorate Class" are interesting as they embrace among other compounds the so-called fusc-mixtures and primings for cartridges, etc.

The classification of explosive compounds is carried out in lecture ten and the picric acid and nitrobenzine compounds are fully explained.

The important substance "Guncotton," so extensively used in torpedoes and sub-marine mines, is next taken up, and the entire process of manufacture is treated of in Lecture XI.

"Service Tests for Guncotton" is the subject of Lecture XIII. and is very completely treated, including methods of testing ignition, temperature and the determination of the various alkaline substances that might be left in the guncotton after manufacture.

A most important part of the work is the lecture on smokeless powders. These mixtures, which have become of such great importance in modern warfare, are here carefully considered, and all the essential points connected with the manufacture are set forth.

After this follows lectures on the various fulminates, such as are used in detonators and the caps of shells, torpedoes and sub-marine mines.

In the lecture on manipulation, storage and transportation of high explosives there are many useful hints and a series of "warnings" as to the uncertain stability of the nitro-explosives.

Altogether this little volume is an admirable resume of the whole subject of explosives, and cannot but prove both useful and interesting to persons engaged in the substances employed in ordnance, rifle and torpedo explosives.

SHIPPING MINES.

ROSSLAND.

ORE shipments from Rossland Camp for the year ending December 31, 1898, were as follows :
December 31, 1898, were as follows :

	Tons.
Le Roi	66,200
War Eagle	42,779
Iron Mask	3,500
Centre Star	2,907
Poorman	453
Monte Christo	416
Velvet	350
Cliff	140
Giant	114
Sunset, No. 2	32
Deer Park	6
Total.....	116,697

For the three weeking of the present month, ending January 21st :

War Eagle	480
Iron Mask	50
Le Roi	1,180
Total.....	1,638

Matte from Trail smelter

Pounds.
418,000

The noticeable falling off in the tonnage this month is principally attributed to the extensive timbering work and the consequent cessation of shipments from Le Roi. This work is now completed and henceforward minimum average shipments of 200 tons of ore are to be daily made from this mine.

SLOCAN.

We are indebted to the Collector of Customs at Kaslo, B.C., for the following returns from that port :

October	7,079,625 lbs.	Value.....	\$312,494.
November	5,211,218 "	"	207,819.
December.....	7,262,268 "	"	290,287.

Total shipments for twelve months ending 31st December, 1898 :

Tons ore..... 32,038. Value.... \$2,550,669.

During 1898 rather over 32,000 tons of ore, valued at \$2,550,669 was shipped to United States smelters from the Slocan mines via the Kaslo & Slocan Railway. Considerable shipments were also made over the C. P. Railway, thus bringing the value of the original output to approximately \$3,000,000. 2,477 tons of matte, valued at \$2,093,299 was exported from Nelson during the year. Of the Slocan shipping mines, the Payne still occupies first place on the list, with a production of 8,780 tons of ore, the Slocan Star, with a record of 1,900 tons, occupies the second place, and the Ruth, with a total output of 1,700 tons, third.

The shipments of ore over the Kaslo & Slocan Railway from January 1st to 18th, inclusive, were as follows :

SANDON.

	Tons.
Last Chance	329 2/3
Whitewater	198
Rambler	45
Reco	40
Slocan Star	40
Ruth	15
Sapphire	18
Dardanelles	15
Total.....	961 2/3

By the C. P. R.—

Payne

240

THREE FORKS—JAN. 7TH.

Queen Bess

Tons.
62 2/3

WHITEWATER—JAN. 20TH.

Whitewater

93

Jackson

15

Total..... 108

SLOCAN—JAN. 16TH.

	Tons.
From Bosun Landing—	
Bosun	60
From Silverton—	
Fidelity	3
Vancouver	100
Wakefield	60
Total.....	163
Grand total.....	223

NELSON.

The General Manager of the Hall Mines Limited, kindly sends us the following :

The results of this Company's smelting operations for the four weeks ending December 30th, 1898: For 21 days' 13 hours' smelting, 2,575 tons of ore were smelted, yielding 48 tons copper, 42,730 ounces silver.

COAL SHIPMENTS—DECEMBER.

Following were the foreign shipments for December, by the New Vancouver Coal Mining and Land Co., Limited :

Date.	Vessel.	Destination.	Tons.
1—SS. Siam		Port Los Angeles	4,329
6—SS. Wyefield		San Francisco	5,122
12—Bark St. Katherine.....		Honolulu, H. I.	1,699
13—SS. Titania		San Francisco	5,370
13—Str. Wanderer		Port Townsend	25
17—SS. Siam		Port Los Angeles	4,336
22—SS. Wyefield		San Francisco	5,136
28—SS. Titania		Port Los Angeles	5,014
30—SS. Amur		Alaska	168
Total.....			31,201

Shipments of same mine till 20th January :

Date.	Vessel.	Destination.	Tons.
4—SS.	Siam	San Francisco	4,360
6—SS.	San Macto	Port Los Angeles	4,344
11—SS.	Wyefield	San Francisco	5,148
16—SS.	Titania	San Francisco	5,030
18—SS.	Amur	Skagway, Alaska	192
Total.....			19,074

Following were the Wellington shipments for December :

Date.	Vessel.	Destination.	Tons.
1—Ship	Big Bonanza	San Francisco	2,248
1—Str.	Pioneer	Port Townsend	36
1—SS.	Bristol	San Francisco	2,500
6—Str.	Angeles	Port Townsend	70
8—Ship	Oriental	San Francisco	2,500
10—Str.	Wanderer	Port Townsend	35
10—SS.	Wellington	San Francisco	2,500
14—SS.	City of Topeka	Mary Island	150
16—SS.	Bristol	San Francisco	2,500
16—Ship	St. Nicholas	San Francisco	2,550
16—Str.	Holyoke	Chemainus	70
17—Str.	Wanderer	Port Los Angeles	40
24—Bark	Harry Morse	Honolulu	2,000
27—SS.	Wellington	San Francisco	2,550
27—SS.	Cottaga City	Victoria	80
Total.....			20,829

Following were the shipments from Union for December :

Date.	Vessel.	Destination.	Tons.
3—SS.	San Mateo	San Francisco	4,150
3—SS.	Rapid Transit	Seattle	259
4—Str.	Resolute	Seattle	47
3—Bark	Mercury	Seattle	1,192
12—SS.	Miowera	Vancouver	1,250
12—SS.	Protection	Port Townsend	365
17—Ship	Glory of the Seas	San Francisco	3,250
17—Str.	Holyoke	Port Townsend	23
17—Str.	Rapid Transit	Seattle	256
24—SS.	San Mateo	San Francisco	4,150
24—Str.	Rapid Transit	Seattle	250
31—Bark	Richard III.	Mary Island	1,725
31—Str.	Pilot	Mary Island	91
Total.....			17,008

J. W. Harrison's coal circular gives the receipts of coal at San Francisco, Wilmington and San Diego for the year 1898 as follows :

	Tons.
British Columbia.....	651,208
Australia.....	201,931
English and Welsh.....	75,115
Scotch.....	5,056
Eastern.....	37,560
Seattle, etc.....	283,963
Carbon Hill, etc.....	348,474
Mt. Diablo, Coos Bay, etc.....	172,506
Japan, Rocky Mountain.....	25,560
Total.....	1,821,373

This total includes 154,402 tons delivered at two Southern coal ports. Deliveries of coke foot up 41,630 tons, over 50 per cent. of which comes from England. Ruling prices are 15 to 20 per cent. above 1897.

THE METAL MARKET.

[Compiled from special telegraphic quotations to the B.C. MINING RECORD, from the *Engineering & Mining Journal*, New York.]

The year has opened very auspiciously and the outlook for a steady increase to the volume of business is most promising. The effects of general prosperity and large purchases are meanwhile evident in many directions, the money market being somewhat closer, notwithstanding. The speculative spirit is very strong and is shown in high prices of securities and large dealings on the exchanges.

SILVER.

This market displays more firmness owing to smaller offerings, but no great change is yet perceptible. Prices have ranged from 59 to 59 7/8, this latter figure being realized on the 4th inst. Our quotations to-day (Jan. 29th) are 59 1/4, 59 7/8. The average price of silver for the month of January, 1898 was 56.77.

LEAD.

The improvement has made still further progress, the market to-day, (Jan 26th), closing firm at 4.20c., New York, notwithstanding the fact that supplies have been coming forward much more liberally of late. The present demand is excellent for this season of the year, and there is every indication of a material improvement in the near future. Prices now are higher than since August, 1897, when \$4.30 was reached. The average price of lead during January of last year was \$3.65.

SPELTER.

This market has shared in the general improvement, the price having advanced to \$5.25 St. Louis, and \$5.37 New York. The demand is very brisk, both in America and Europe.

COPPER.

The market has been wonderfully brisk, with a continued upward tendency, prices for the 24th, 25th, 26th insts. being 14 1/8, 14 1/4 and 15c, respectively, for electrolytic copper in cakes, wire bars or ingots. These are the highest prices recorded for many years, the average price of this metal last year being \$12.03 and \$11.29 for 1897. Manufacturers have been buying very freely and consumption seems to be at its best. Producers, however, have not been able to meet the demand wholly, and almost all of their product has been sold until the end of March.

THE STOCK MARKET—JANUARY.

THE local stock market has been very active during the month. There has been a very persistent demand for the shares of the Crow's Nest Pass Coal Company, and since our last report these shares have advanced from \$28 to \$34, one firm of brokers in Victoria having received orders aggregating \$400,000.

In Slocan stocks activity has been chiefly confined to Dardanelles, Rambler, Noble Five and St. Keverne. Since last month Dardanelles have advanced from 11 to 16, and Rambler from 14 to 28.

In Nelson division Dundees, Tamaracs, Fairmonts and Athabascas have been in fair demand.

In Rossland Iron Mask, Iron Colt, Iron Horse, Evening Star, Virginia, War Eagle, Commander, Jumbo, Monte Christo and Deer Park have been the principal sellers. The market is pretty well cleared of all Monte Christo offering under 10 cents, all Iron Colt under 10 cents, all Evening Star under 6 cents. Virginia is again becoming a favourite at 45c, and Iron Mask has been in good demand at 90 cents.

In Camp McKinney, Cariboo is the favourite, and is in demand at from \$1.45 to \$1.50, Waterloo at 8 1/2 to 9 cents, Minnehaha about 17 to 18 cents.

In Fairview Camp Smuggler has dropped from 20 to 10 cents in the last few weeks.

In Boundary Creek, Old Ironsides are in good demand in the vicinity of \$1.05, and Knob Hill is quoted at 85 cents.

Coast stocks have been quiet, although the Van Anda property is reported to be looking very well.

THE ROSSLAND STOCK MARKET FOR THE YEAR.

(Special report and quotations by Messrs. Dickson & Orde.)

WE have this month presented to the reading public who are interested in the fluctuations of the stock market in this city, where nearly all the stocks of the British Columbia mines are dealt with, a succinct resume of the year's progress in shares. It will be noted in perusing the attached list of the principal stocks upon the market that the prices ruling one year ago are set down against those which are now in vogue. There are twenty-four stocks quoted which are peculiar to Rossland alone. Of these it will be seen that with the exception of Monte Christo, which has suffered a loss of 50 per cent. on its old-time value, every one of the others has either remained steady or has advanced—some merely a point and others very much more. War Eagle, Iron Mask, Virginia and Iron Horse the advance far more than makes up for the drop in Monte Christo. On the other side, where twenty-five other stocks of this province are quoted, but which are not situated in Rossland, the record, though good, is not equal to the first list. There has been a bad drop in Golden Cache, also in Dundee, Reco, Slocan Star and Tinhorn; also, a small drop is to be marked in Rambler Cariboo and Smuggler. After all these only num-

ber seven out of the total of twenty-five. In other words, 72 per cent. have advanced. Cariboo (Camp McKinney), Old Ironsides, Knob Hill, Athabasca are notable examples where the value of the shares in some of these mines has gone up many hundred fold. There is one patent conclusion to be drawn that one of the safest ways of investing ones money is in mining stocks. For does not Bradstreet inform us that the relative failures to successes in business are as nine to one. Pick out the better class stocks and invest all round the above figures conclusively show that there is less of a gamble than the speculation involved in embarking in a business which is usually looked upon as conservative.

	1898.	1899.		1898.	1899.
Abe Lincoln ...	\$ 5	\$ 12	Athabasca ...	\$ 25	\$ 43
Big Three	6	16	Brandon, G. C. .	20	25
Deer Park	12	20	Cariboo, CMcK	52	1 60
Eureka	5	10	Cayoosh Cr....	45	50
Gertrude	10	12	Dundee	75	28
Giant	5	Dardanelles ...	13	18
Gopher	2	4	Golden Cache..	1 20	2 00
Grand Prize ...	2	4	Goodenough ...	23	18
Iron Colt	11	12	Knob Hill	16	86
Iron Horse	11	18	London Hill ..	18	18
Iron Mask	35	95	Nelson Poorm'n	24	30
Jumbo	46	47	Old Ironsides..	18	1 10
Le Roi	7 65	8 50	Rambler, C'boo.	30	28
Lily May	18	20	Reco	1 65	1 20
Monte Christo..	21	12	Salmo	10	20
Mugwump	5	5	Smuggler	16	12
Novelty	3	4	Slocan Star....	2 40	1 25
Poorman	10	13	Sable Cr.	5	5
R. Homestake..	6	6	Tamarac (p'd)	6	9
Silver Bell	2	6	Noble Five	14	17
St. Elmo	5	5	St. Keverne ...	5	5
Victory Tr'mph	3	6	Tinhorn	55	15
Virginia	11	1.50	Two Friends ..	15	17
War Eagle	91	3.25	Van Anda	5	6
White Bear ...	6	7	Victoria Texada	5	11

INDUSTRIAL NOTES.

WE learn that Messrs. Armstrong & Morrison of Vancouver, have been successful in tendering on a large contract for the City of Vancouver Water Works. This contract is for four miles of 22-inch double rivetted steel water pipe and fittings, the cost of which is to be in the neighbourhood of \$40,000.00. This well known firm have completed the largest orders of steel pipe for water works and mining purposes, given in British Columbia, and last year satisfactorily supplied the City of Vancouver with 3½ miles of water pipe. Their plant for the manufacture of hydraulic pipe is the largest in Canada, and when engaged on a large contract their works present a very busy appearance, 75 to 100 men or more being employed, as occasion demands. This year it has been found necessary to greatly enlarge the buildings on their premises, principally their boiler shop, as the orders in this branch have come in so rapidly that the space in the present building has been found inadequate, for the excellent reputation already gained by Messrs Armstrong & Morrison for boiler building is sufficient to place the firm on an equal footing with the most reputable manufacturers of this class of machinery in the country.

In mentioning the boiler and steel pipe departments of the works, it would not be fair to overlook the thoroughly equipped machine shop, where, during the last three months, two car loads of the most modern machine tools have been turned out.

Our Ymir correspondent sends us the following special despatch, dated January 29th: The Dundee concentrator commenced running this afternoon, all the directors being present. The preliminary run proved very successful, and henceforward the machinery will be in continuous operation.

Owing to pressure on space this month we have been reluctantly compelled to leave over several interesting letters from correspondents. Our "Answers to Correspondence" column has also been crowded out of this issue, enquirers receiving replies by mail.

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Rossland.

62 Government St., Victoria.

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Mining Stocks.

Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., Jan. 26, '99.

Company.	Capital.	Par Value.	Price.
TRAIL CREEK.			
Alberta	\$1,000,000	\$1	\$ 4½
Big Three	3,500,000	1	17½
Bruce	1,000,000	1	10
Butte	1,000,000	1	02
California Con	1,000,000	1	5½
Caledonia	2,500,000	1	15
Camp Bird	1,000,000	1	05
Celtic Queen	750,000	1	03
Centre Star	3,300,000	1	
Commander	500,000	1	12
Deer Park	1,000,000	1	19
Enterprise	1,000,000	1	20
Evening Star	1,000,000	1	07
Georgia	1,000,000	1	02
Gertrude	500,000	1	11
Golden Drip	500,000	1	15
Gopher	1,000,000	1	04
Hattie Brown	1,000,000	1	03
High Ore	500,000	1	05
Homestake	1,000,000	1	6
Imperial	1,000,000	1	10
Iron Horse	1,000,000	1	18
Iron Mask	500,000	1	95
I.X.L.	1,000,000	5	10
Iron Colt	1,000,000	1	11
Jumbo	1,000,000	1	52
Le Roi	500,000	1	
Lilly May	£1,000,000	£5	£6
Mabel	\$1,000,000	1	\$0 20
Mayflower	1,000,000	1	15
Monita	1,000,000	1	10
Monte Cristo	750,000	1	19
Morning Star	2,500,000	1	11
Nest Egg-Firefly	1,000,000	1	08
Northern Belle	1,000,000	1	05
Novelty	1,000,000	1	10
Palo Alto	1,000,000	1	05
Phoenix	1,000,000	1	05
Poorman	500,000	1	13
R. E. Lee	500,000	1	14
Red Mountain View	2,000,000	1	5
Rossland, Red Mountain	1,000,000	1	3
St. Elmo	1,000,000	1	13
St. Paul	1,000,000	1	06
Silverine	1,000,000	1	12½
Silver Bell Con	500,000	1	6
Victory Triumph	500,000	1	25
Virginia	1,000,000	1	9
War Eagle Consolidated†	1,000,000	1	17
West Le Roi	2,000,000	1	3 20
White Bear	500,000	1	28
	2,000,000	1	08
AINSWORTH, NELSON AND SLOCAN.			
American Boy	1,000,000	1	6
Arlington	1,000,000	1	6½
Argo	100,000	0 10	10
Atabasca	1,000,000	1	43
Black Hills	100,000	0 10	10
Buffalo of Slocan	150,000	0 25	—
Canadian M. M. and S. Co.	2,000,000	1	07½
Channe	250,000	0 25	06
Cumberland	500,000	10	
Dundee	1,000,000	1	28
Dardanelles	1,000,000	1	16
Dellie	1,000,000	1	16
Eldon	700,000	1	12
Elken	1,000,000	1	05
Elkhorn	1,000,000	1	07½
Exchequer	1,000,000	1	10
Fern Gold	1,000,000	1	10
Goodenough	200,000	0 25	55
Gibson	800,000	1	15
Grey Eagle	650,000	1	17½
Hall Mines	750,000	1	
Lerwick	£300,000	£1	£1
London	\$1,500,000	\$1	15
Minnesota	150,000	1	25
Nelson-Poorman	1,000,000	1	
Northern Light	250,000	0 25	26
Noble Five Con	250,000	1	16½
Ottawa and Ivanhoe	1,200,000	1	18
Payne	1,000,000	1	12½
Rambler Con	2,500,000	2 50	
Reco	1,000,000	1	28
Slocan-Reciprocity	1,000,000	1	1 30
Slocan Star	1,000,000	1	06
Santa Marie	500,000	50	1 50
Silver Band	1,000,000	\$1	05
Slocan Queen	250,000	0 25	12½
Star	1,000,000	1	10
St. Keverne	1,000,000	1	07
Sunshine	1,000,000	1	03½
Tamarac	500,000	10	
Two Friends	1,000,000	1	08
Washington	240,000	30	13
Wonderful	1,000,000	1	25
	1,000,000	1	05
LARDEAU.			
Lardeau Goldsmith	200,000	1	04
Consolidated Sable Creek Mining Co	1,500,000	1	10
TEXADA ISLAND.			
Gold Bar	100,000	10	10
Raven	1,000,000	1	10
Texada Proprietary	250,000	0 25	25

Texada Kirk Lake	600,000	1	1 00
Treasury Mines	250,000	0 25	25
Van Anda	5,000,000	1	04½
Victoria-Texada	150,000	0 25	10
VANCOUVER ISLAND.			
Alberni Mountain Rose	250,000	1	05½
Consolidated Alberni	500,000	1	5
Mineral Creek	500,000	1	05½
Mineral Hill	750,000	1	05
Quadra	500,000	1	05
CARIBOO.			
Cariboo Gold Fields Ltd	£100,000		
Cariboo Hydraulic Consolidated	\$5,000,000	1	85
Cariboo M. & D. Co	300,000	1	
Golden River Quesnelle	£350,000	£1	1 40
Horsefly Hydraulic	\$200,000		
Horsefly Gold Mining Co	1,000,000	\$10	1 50
Victoria Hydraulic	300,000	1	85
LILLOOET DISTRICT.			
Alpha Bell	500,000	1	
Cayoosh Creek Mines	500,000	1	
Excelsior	500,000	1	
Golden Cache	500,000	1	04½
Lillooet Gold Reefs	200,000	25	
FAIRVIEW CAMP.			
Smuggler	1,000,000	1	10
Tin Horn	200,000	0 25	12
Winchester	2,000,000	0 25	13
BOUNDARY.			
Golden Crown	1,500,000	1	25
Knob Hill	1,500,000	1	88
Old Ironsides	1,000,000	1	1 20
CAMP MCKINNEY.			
Camp McKinney Development Co	1,000,000	1	13
Cariboo	1,250,000	1	1 50
Minnehaha	1,000,000	1	20
Waterloo	1,000,000	1	09
REVELSTOKE.			
Carnes Creek Consolidated	1,000,000	1	10
VERNON DIVISION.			
Hidden Treasure	100,000	10	10 00
CROW'S NEST PASS.			
Crow's Nest Pass Coal Co	1,500,000	25	34 00

† Dividends paid to date are as follows: War Eagle, (new company) \$180,000; Trail Creek District—Le Roi, \$825,000; War Eagle (old company), \$217,000; Camp McKinney—Cariboo, \$221,000; Nelson District—Hall Mines, \$26,750; Fern, \$10,000; Slocan District—Payne, about \$1,000,000; Slocan Star, \$400,000; Reco, \$287,000; Idaho, \$240,000; Whitewater, \$154,000; Rambler-Cariboo, \$40,000; Last Chance, \$40,000; Two Friends, \$6,000; Hidden Treasure \$11,000.

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THE MINERAL INDUSTRY, ITS STATISTICS, TECHNOLOGY AND TRADE, VOL. VI. 1897.

(By R. P. Rothwell, Illustrated, Price \$5.00.)

Among the especially valuable papers in this number are:—Calcium Carbide and Acetylene, by A. H. Cowles; The Manufacture of Hydraulic Cement in the United States, by F. H. Lewis; Manufacture of Sulphuric Acid without Lead Chambers, by George Lunge; Progress in Electrochemistry, by H. Borns; Manufacture of Clay Ballast, by H. F. Bain; By-product Coke Ovens, by W. H. Blauvelt; Briquette Manufacture, by P. R. Bjorling; Progress in Electro Copper Refining by Titus Ulke; The Copper Industry in Arizona, by James Douglass; Copper smelting in the Caucasus, by G. Rolle; Telluride Gold Ores, by J. F. Kemp; Gold Mining in Siberia, by K. De Batz; West Australian Gold Mining, by H. C. Hoover; Progress in the Metallurgy, P. Argall; Mining Practice in South Africa, by E. D. Chester; Progress in the Metallurgy of Lead, by H. O. Hoffman; Recent Smelting Practice in Colorado, by L. S. Austin; Progress in Electro-Metallurgy of Nickel, by T. Ulke; Occurrence and Treatment of Platinum, by Henry Louis; Metallurgy of Quicksilver in Italy, by V. Spirek; The American Slate Industry, by H. L. J. Warren; Progress in the Metallurgy of Zinc, by W. R. Ingalls; Progress in Ore Dressing, by R. H. Richards; Accidents in Mines, by F. L. Hoffman, and Tunnel Rights by R. W. Raymond.

The Scientific Publishing Company, New York,
253 Broadway.

Canadian Pacific Navigation Co., Ltd.

TIME TABLE NO. 36.

(Taking effect September 1st, 1898.)

VANCOUVER ROUTE.

VICTORIA TO VANCOUVER daily except Monday at 1 o'clock.
VANCOUVER TO VICTORIA daily except Monday at 13 o'clock or on arrival C.P. Railway No. 1 Train.

NEW WESTMINSTER ROUTE.

LEAVE VICTORIA—For New Westminster, Ladner and Lulu Island Sunday at 23 o'clock; Wednesday and Friday at 7 o'clock. Sunday's steamer to New Westminster connects with C.P.R. Train No. 2 going east, Monday.

FOR PLUMPER PASS—Wednesdays and Fridays at 7 o'clock.

FOR MORESBY AND PENDER ISLANDS—Fridays at 7 o'clock.

LEAVE NEW WESTMINSTER—For Victoria Monday at 13:15 o'clock. Thursday and Saturday at 7 o'clock.

FOR PLUMPER PASS—Saturday at 7 o'clock.

FOR PENDER AND MORESBY ISLANDS—Thursday at 7 o'clock.

FRASER RIVER ROUTE.

Steamer leaves NEW WESTMINSTER for CHILLIWACK and way landings every Tuesday, Thursday and Saturday at 8 o'clock during river navigation.

NORTHERN ROUTE.

Steamships of this Company leave Victoria for Fort Simpson via Vancouver and intermediate ports on the 10th, 20th and 30th of each month, and for Queen Charlotte Islands on the 10th of each month.

KLONDIKE ROUTE.

Steamers of this Company leave weekly for Wrangel, Juneau, Skagway and Dyea.

BARCLAY SOUND ROUTE.

Steamer "Willapa" leaves Victoria for Alberni and Sound ports the 1st, 7th, 14th and 20th. Extending latter trip to Quatsino and Cape Scott. The Company reserve the right of changing this Time Table at any time without notification.

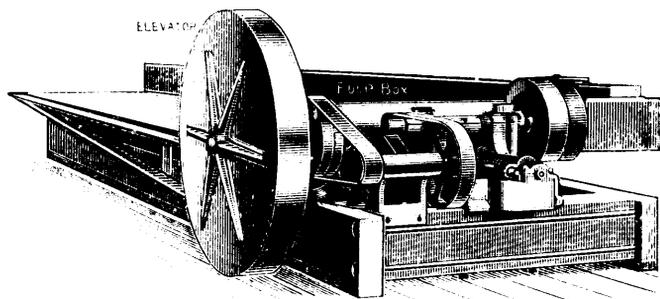
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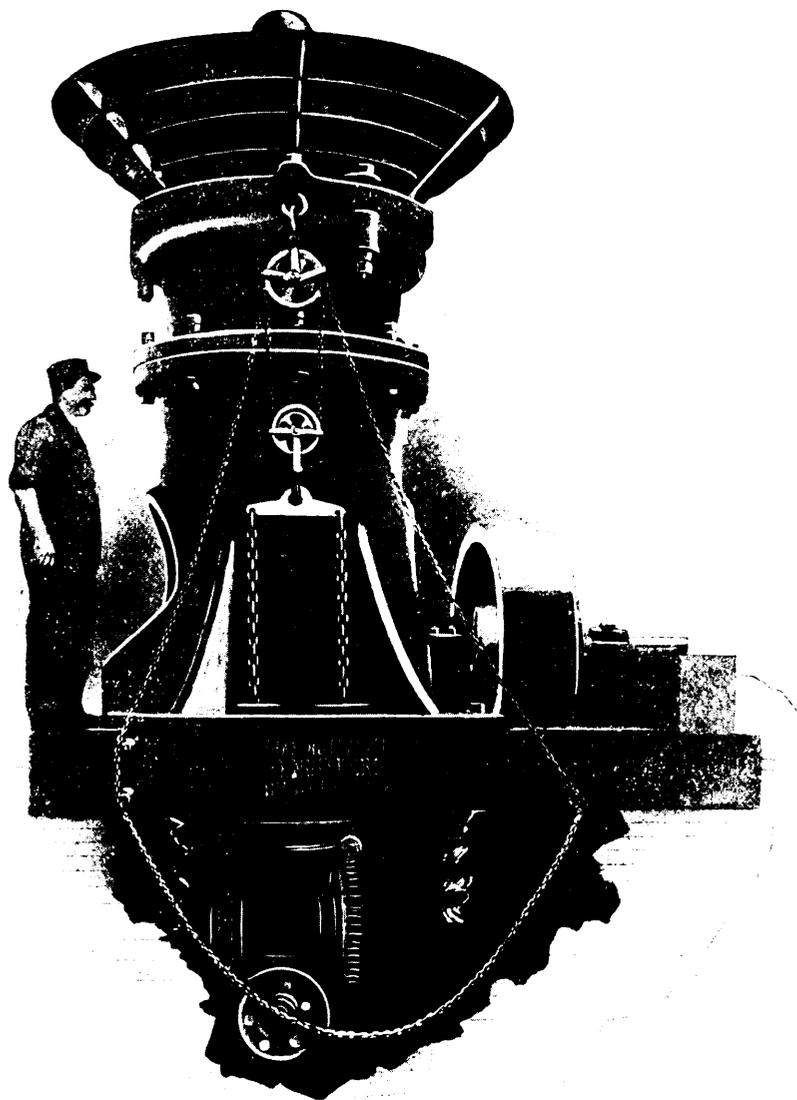
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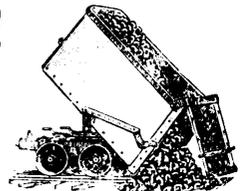
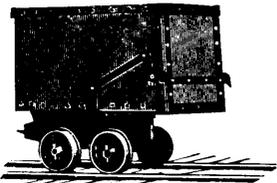
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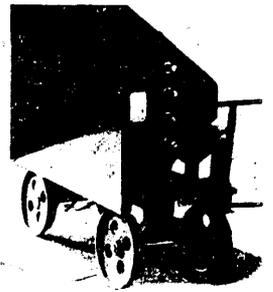
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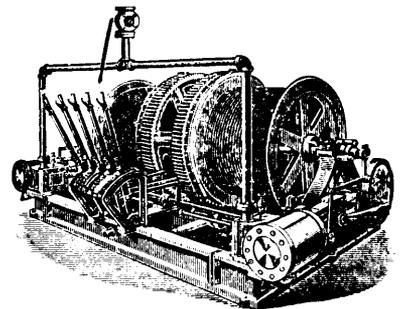
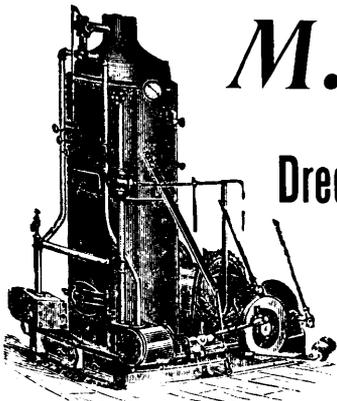
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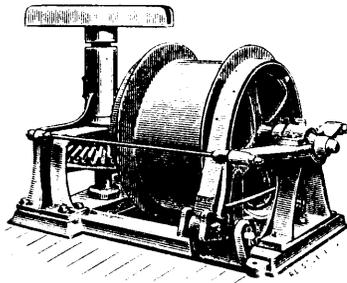
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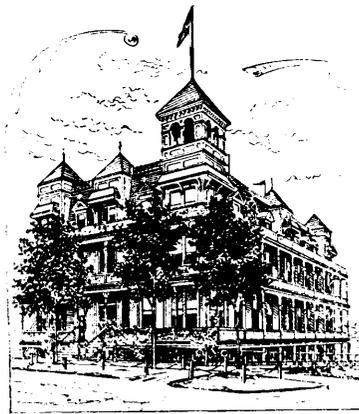
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