

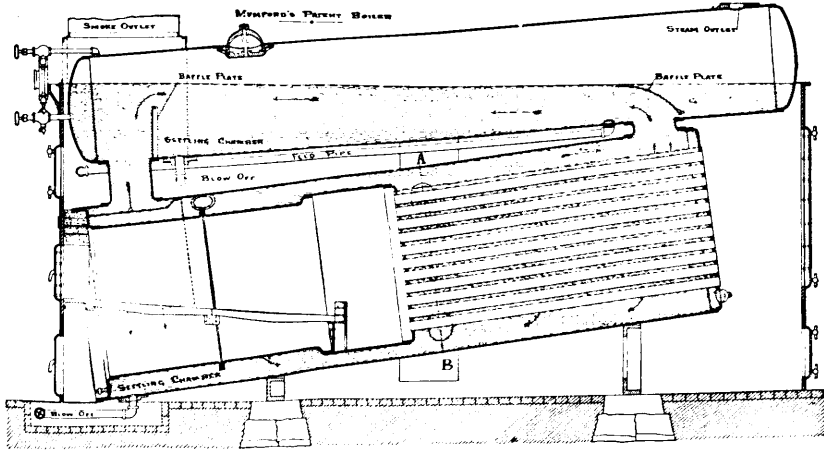
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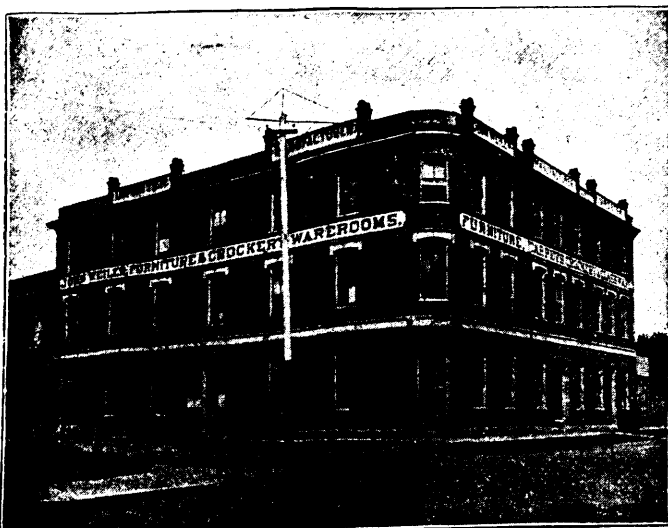
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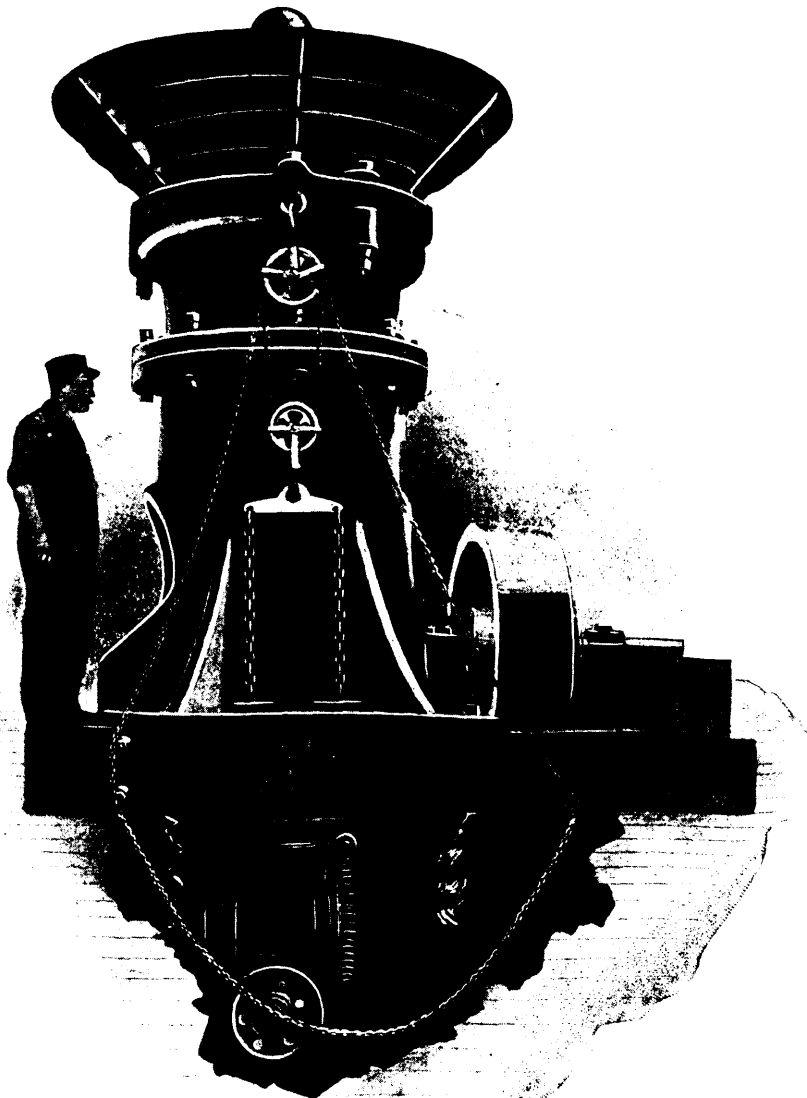
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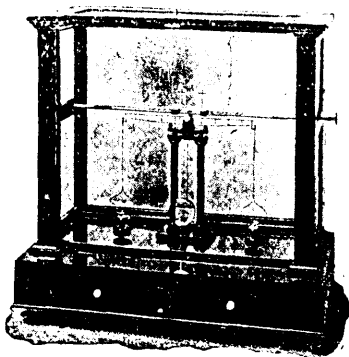
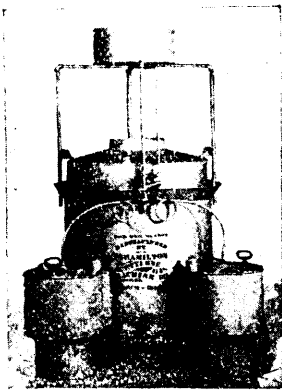
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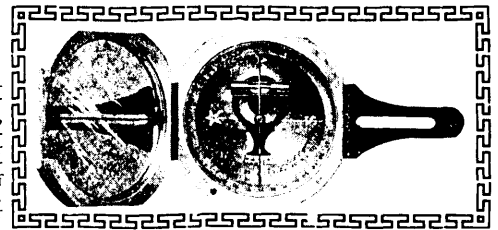
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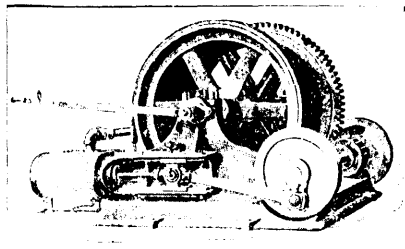
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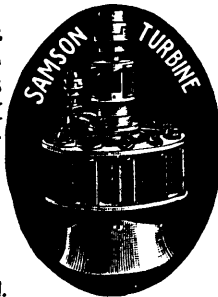
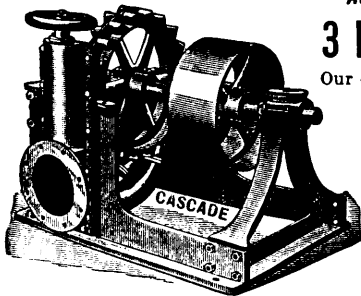
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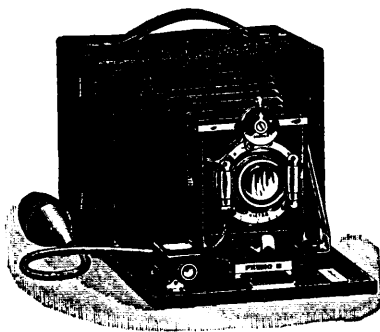
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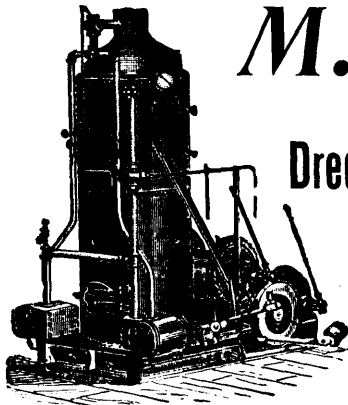
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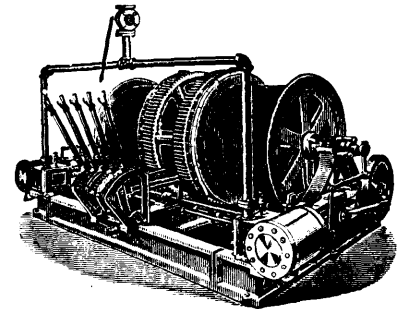
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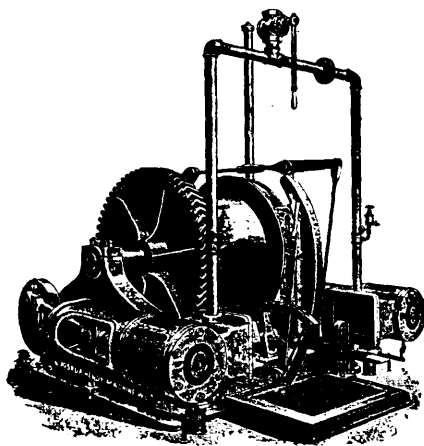
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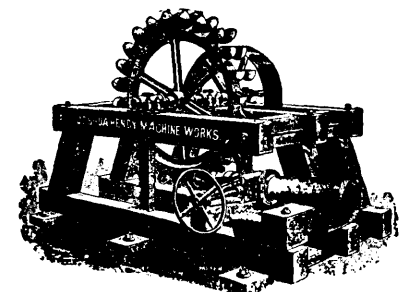
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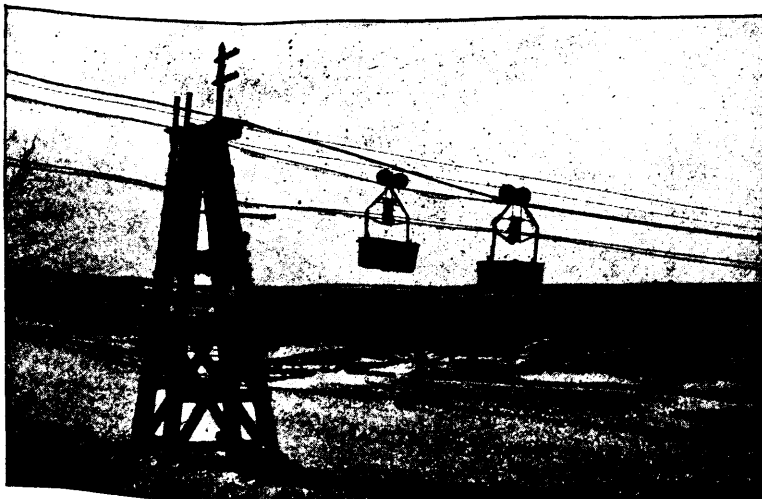
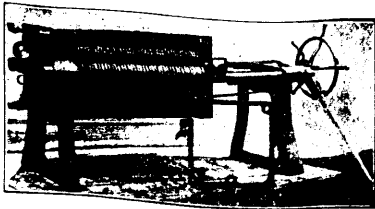
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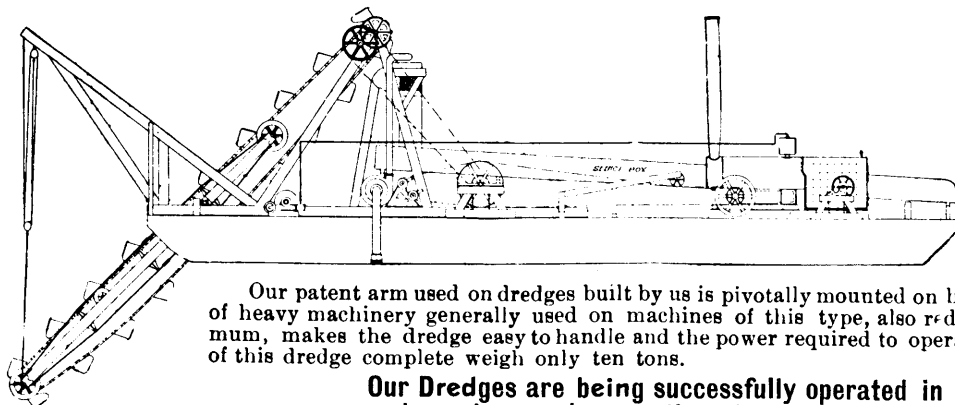
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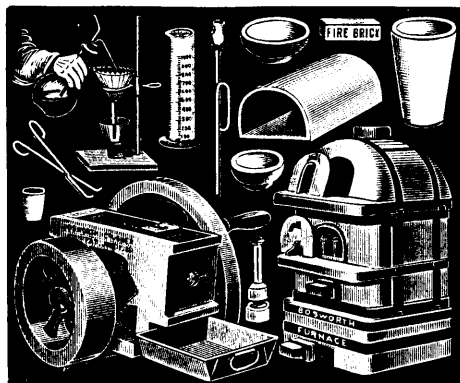
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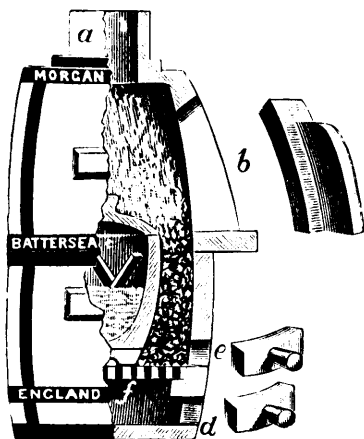
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THE MONTH.

"THE most remarkable development the country has seen in any similar space of time," is a phrase that stands in imminent peril of becoming hackneyed when used by the reviewer of British Columbia history, as each year draws to a close and he summarises the events of the preceding twelve months. And, verily, like the stone that once set rolling down hill gathers fresh impetus with every rebound, so is now the progress annually evidenced in the successful opening up of the great natural resources of Western Canada—a possession of which the Empire has ever increasing reason for being eminently proud. What part the discovery of quartz and the subsequent operations of the mines in the Kootenays has played in changing the condition of industrial and financial depression experienced in the Province little more than six years ago, to that of the quite exceptional prosperity and commercial activity of to-day, would be, perhaps, difficult to accurately estimate; but it is nevertheless a noteworthy coincidence, to which the Board of Trade reports testify, that with the beginning of mining in Rossland came the revival and improvement of trade in British Columbia, and since an expansion which, in so short a period, is little less than astonishing. With regard to lode mining, each year since 1892 the output of metals—both precious and base—has been practically doubled, and although all the returns for 1898 have not yet been received, there is ample evidence of a like, if not a still more relatively satisfactory increased production to show for the past twelve months. The most notable events of the year have been, briefly: First, the Klondike boom, which, while it may in certain respects not have exercised an altogether beneficial effect on the Province's mining industry, at least resulted in attracting attention to British Columbia from all parts of the world, and hence stimu-

lated the investment of outside capital in the Kootenay mines. Then, by no means secondary in importance is the building of the Crow's Nest Pass Railway, which, besides opening up the valuable East Kootenay coal fields and reducing thereby the cost of smelting by the cheapening of coke, will also necessarily result in the development of the exceedingly promising but hitherto, in most cases, little prospected districts of East Kootenay. The commencement of actual construction work on the long-promised Columbia & Western Railway from Robson into the Boundary Creek district has given the greatest satisfaction in South Yale, and when probably early next summer the line is completed, it is not too much to expect that some of the mines in this camp will, in a very short space of time, take their place among the largest producers of copper ore on the American continent. But to take the mining divisions of the Province in order, one should perhaps begin with Vancouver Island and the Mainland coast districts first. On the West Coast of Vancouver Island, then, the chief activity has been confined to the old established

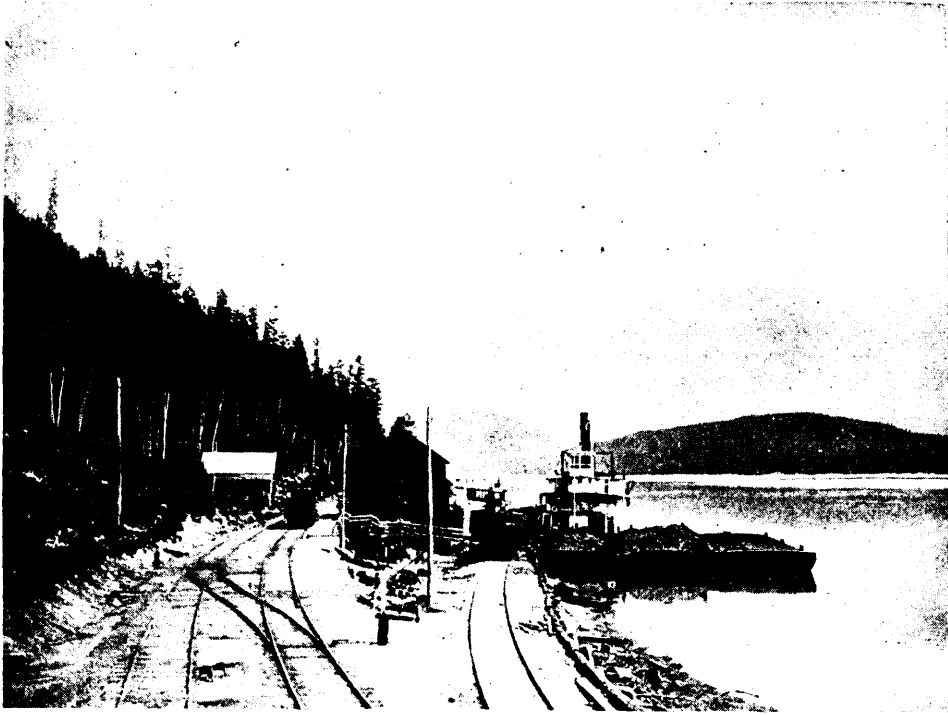
district of Alberni, with, we regret to say, not altogether satisfactory results. Alberni has been under several disadvantages this year, and perhaps more "wild-cattling" has been done in this district than in any other part of British Columbia. There is also far too little development work carried on in proportion to the area of territory staked out, and one instance could be cited at least of the grossest mismanagement on the part of an English Company professedly operating in this field. The only mine at all entitled to the name—the Alberni Consolidated—has proved of late somewhat disappointing, but many competent to express an opinion hold, nevertheless, that the property is a meritorious one, and under skilful management could be profitably operated. In the Clayoquot and Quatsino districts some very prominent discoveries have been made, and capital, chiefly American, is already being introduced to develop the properties more. The special facilities for cheap ocean carriage of ore and the economic advantages of an abundant local lime, wood and water supply, should, when mining is commenced in earnest in these districts, contribute largely to their rapid development. Near Victoria, at Goldstream, a good deal of quiet work has been done during the year, and on the Phair claim, which has been opened up by a three hundred-foot tunnel, a very fine body of copper ore has been exposed. At Mount Sicker the outlook is most encouraging. A large number of properties are being developed, the Lenora, Copper Canyon group and the Tyhee group being at present actively exploited. On the Mainland coast, at Phillips Arm and Shoal Bay, important developments have taken place during the year, and some very valuable finds have been made. The principal property at present, the Dorothea Morton is now well equipped with a new type of mill, a cyaniding plant and an aerial tramway, and the prospects before this mine and several others

in the vicinity is very bright. On Texada Island the past year has witnessed a very marked change. A number of properties, but notably the Van Anda, Marble Hill and Surprise have been opened up to a considerable extent, and with the most encouraging results. Several shipments of ore from the Van Anda have been made to Swansea, netting a handsome return to the Company, and next month a matting plant and other machinery is to be installed.

The future of Omineca now depends very largely on adequate transportation facilities and the proving of the quartz discoveries which this year have been reported. As a placer mining field it no longer offers much inducement either to the prospector or capitalist, although hydraulic mining may yet be profitably conducted. Little has been done in Omineca during the past season, with the exception of the partial equipment of one hydraulic claim. In

two seasons of mining in Cariboo. The completion of the Moorhead ditch to furnish a more adequate supply of water to the famous Cariboo Hydraulic mine; the large expenditure by the Golden River Quesnelle Company, in the construction of an enormous dam on the South Fork of the Quesnelle River; the installation of hydraulic elevators by the Cariboo Gold Fields Company; the exploration and development work that has been carried on in every part of the district, can within the scope of this article be thus merely mentioned. Next year the results will speak more forcibly.

Kamloops must still be regarded as a camp of "prospects," having regard for the limited amount of development work yet performed, but this notwithstanding, the progress that has been made during the past twelve months has been by no means inconsiderable, and by the proving of the Pothook claim to



On the Arrow Lake.

Cassiar the results of the explorations of the Cassiar Central Ry. Co. are not said to have been particularly encouraging. The country is, however, heavily covered with moss and wash, which of course renders prospecting extremely difficult. Further north yet the remarkable finds in the Atlin Lake district has caused great excitement, and if the reports which have been received up to the present time concerning the richness of these diggings are not utterly untrustworthy, there is every reason to believe that this far northern field will increase very largely, next year, British Columbia's gold production.

Although the actual gold yield from Cariboo for the past year will not greatly exceed, if at all, that of 1897, we are, we believe, quite justified in saying that larger aggregate sums of money have been expended in mine development and equipment than during any previous

depth of one hundred and sixty feet, where a better grade ore than on the surface is found, encouragement is given to continue the exploitation of other properties.

Since the spring of '94 a ten-stamp mill has been in operation on the Cariboo claim, resulting in the production of over half a million dollars.

The ownership recently passed into the hands of Toronto people, and is now known as the Cariboo Con. M. & M. Co. During the year the mill has been increased to twenty stamps, and 7,530 tons of ore have been crushed, yielding 11,000 ounces of bullion, value \$135,000, and 360 tons of concentrates, value \$20,800. The mine development for the year has been 950 feet of drifting on the fourth level, and two upraises of 85 feet each, to the third level. The fourth level is 250 feet below the surface at shaft. This shaft is now being sunk to the fifth level, which will be 350

feet below the surface at shaft when completed. Other properties, notably the Minnehaha, on which the lode has been exposed for some 700 feet, the Sailor, Fontenay, Old England, Waterloo and many others have been well developed, and never in the history of the camp was the outlook brighter than to-day.

The year 1898 in Fairview, has hardly proved as satisfactory as the previous fall had promised. Among the reasons for this, no doubt the chief, are want of experienced management and lack of capital. The first named reason most certainly accounts for ill luck attending the Tinchorn, Comstock, Fairview Consolidated and Win-

gradually transported to the ore bin at the new mill just completed. The first mill runs has now commenced, and will continue for thirty days or so. At the end of that time the directors are confident that the mine will have proved itself to be possessed of paying ore in sufficient abundance to rank among the dividend paying mines of the Province. The Smuggler Company has been badly handicapped in the past by lack of funds sufficient to carry out the plans of the directorate. The Oro Fino mine, Ltd., have done much work to develop their claims during 1898, and have now installed a small prospecting mill through which it is hoped that the development work will be made to pay expenses.



A Steamer Passing Through The Canyon.

chester ventures. The above companies are now all incorporated under an entirely new directorate, the Fairview Corporation, Limited. This will at least enable the stockholders to arrive at some idea of the value of their stock, provided of course that the new directorate sees fit to employ a thoroughly experienced and capable mining engineer. The Stewind mine which is the most promising property of the Fairview Corporation, is certainly looking so well as to justify a large expenditure in further developing that property, and will no doubt prove a paying concern. The Smuggler mine has been well worked during the past year, and the ore dump, which has been steadily increasing for the last eighteen months, is now being

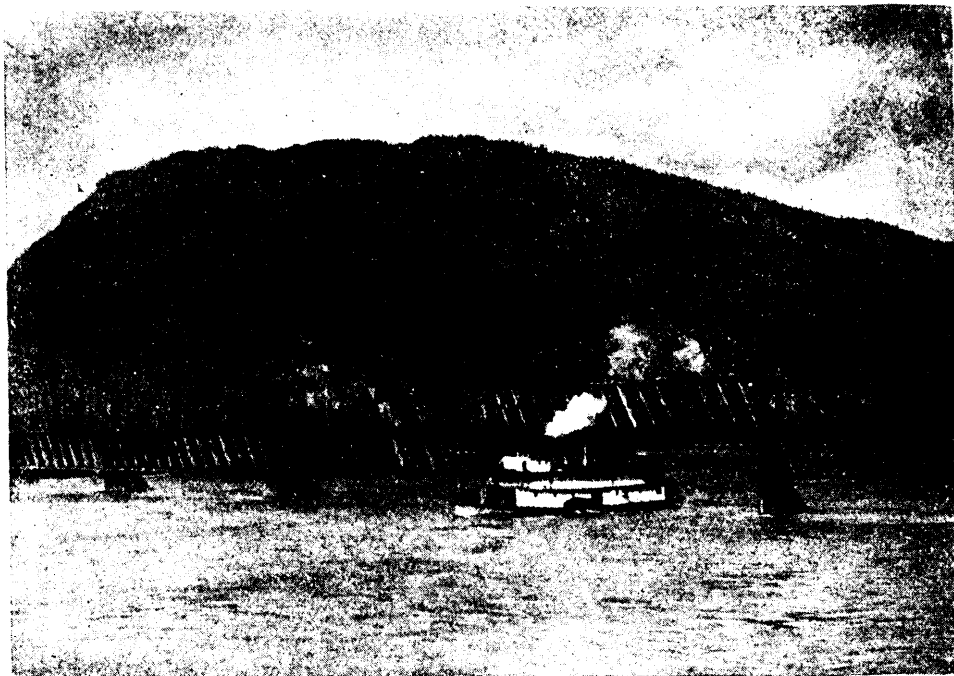
We have already briefly alluded to the result of the commencement of construction work upon the Columbia & Western Railway in stimulating mining activity in the Boundary Creek district, and our Boundary Creek correspondent recapitulates elsewhere the great work of the year. We shall, therefore, content ourselves by stating that more has been done in the last twelve months to prove the permanency of the enormous ore bodies as indicated by the surface showings here than was before accomplished in this direction since 1892.

It is now possible to estimate approximately the

yield and value of the Trail Creek ore shipments for 1898, although at the time of writing complete returns for the year are not available, as the hour of our going to press anticipates by some few days the 31st December. The year's ore shipments of the Rossland mines will be found to represent at least 127,000 tons, and stand for a value of over \$3,800,000 or in sterling £780,000. These are conservative estimates, and compare very favorably with the output of the same district for last year, given in the report of the Provincial Minister of Mines as \$2,097,280. The output has, therefore, nearly doubled in amount and value during the twelve-month, though it even yet represents, as regards its larger proportion, the yield of two great shipping mines, the Le Roi and the War Eagle. Next year we may confidently anticipate the addition of several other large ore shippers to the Rossland list, some of them having already at intervals been making moder-

Rossland camp of late, and development work on a much larger scale has been prosecuted.

On reviewing the proceedings of the last twelve months there is every reason for the people of Nelson district to be well satisfied with the steady advance made. A good many properties have been bonded during the year, and though (as may naturally be expected) all the bonds were not taken up, a good many were, and work has been done on the claims almost without intermission. The Silver King—Nelson's pioneer mine—is shipping more regularly, and there is every hope that the large amount of development now being done will before long put the mine on its old basis as a champion producer of first-class ore. Hard by the King is the Athabasca group, which seems to be continually exceeding expectations—the stamp mill and other machinery are all working



Steaming Up the Columbia River at Revelstoke.

ate advance outputs, amongst these being the Iron Mask and Centre Star. The Rossland ore output for 1899 should, therefore, more than maintain its present rate of advance, and almost certainly show at least twice the yield and value of the returns for the present year. The purchase of the Le Roi, Columbia & Kootenay and other big properties by the British-American Corporation should rightly be regarded as being one of the most notable occurrences of the year in Rossland, while the operations of the Gooderham-Blackstock syndicate resulting in the development of the War Eagle and the purchase of the Centre Star, are of equal importance. The investments of the big British company have created more than anything else in London financial circles, the present interest in British Columbia mining, and no less, the purchase of the War Eagle and Centre Star mines by the Toronto capitalists has inspired Eastern Canadians with fresh confidence in the future of the Kootenay mines. In consequence, both British and Canadian capital has been much more freely invested in the

smoothly, and the result of the last clean-up a few days ago was an \$8,000 gold brick, the third this season, in addition to smelting concentrates. This Company has a very bright future before it, and affords an example of capable management. Adjoining is the Exchequer group, which has not been yet worked very extensively, but the product is most encouraging. And close to the Exchequer is the California group, lately bonded for some \$50,000, according to rumor. This is being steadily worked, and though the ore is more smelting than free milling it is rich enough to return a handsome profit to the new owners. Further south on Toad Mountain, the Nelson Copper Fields Co. are tunnelling and drifting on the Last Chance mine, which at last accounts was looking very well and will be worked all through the winter. Going west, down the Kootenay river, a large amount of work is being done on Eagle Creek, on the groups of claims known as the Royal Canadian and the Granite—a recent assay from the former giving \$125 in gold to the ton. This is probably a

specimen and not a *sample* (the two things are as opposite as any two things can be, though many don't recognise the fact), but the vein is well known to be rich, and is chiefly free milling. In the Ymir district, which is tributary to Nelson as well as to Rossland, there has been much activity during the past year and the outlook is most encouraging. The Porto Rico mine has a large supply of ore that will concentrate and mill (free) worth \$40 per ton, and a 10 stamp mill with accessory machinery has been installed recently. Some 1,000 feet of tunnelling has been done and the property looks well. The Dundee has its machinery almost in place, and will deal with at least 50 tons daily; the value of the ore has been on a shipping test \$45 per ton. The Second Relief, Arlington, Elise and sundry others must not be overlooked, as all have a very large amount of development work done, and all are showing assays that run high in gold.

means of a wire ropeway to the Nakusp & Slocan railway. The Last Chance has, under this year's development, taken a very much higher place in the list of Slocan producing mines, and next year the shipments from this mine will be very considerable. At Whitewater a concentrator has been set up at the Whitewater mine, which in the course of the year was acquired by an English company, and is now making large and regular shipments, and at the Whitewater Deep a compressor was recently installed which will greatly increase the capacity of the mine. On Slocan Lake, some depression has been experienced of late in the vicinity of Slocan City, and but three properties—the Evening Star on Dayton Creek, and the Golden Wedge, which is, perhaps, more properly speaking tributary to Nelson, and the Arlington—are at present being operated. On the Golden Wedge a 10-stamp mill is now in course of building. On Ten Mile Creek interest has been confined to the Enterprise,



A Lumber Camp Near Revelstoke.

The Slocan shipments for the year show a considerable increase in ore production, though possibly the ratio of gain will not prove to be so large as was the case at the close of 1897.

At Sandon, the Ruth and Slocan Star mines have maintained their relative positions as large producers next to the Payne. The Noble Five has been vigorously taken in hand and ore reserves have been blocked out, so that now this property can be placed again upon a shipping basis. The Reco has been strangely inactive during the year, and an impression, which we trust is unfounded, is nevertheless gaining ground that the former heavy shipments from this mine were made with a view to manipulate the sale of stock. The Payne, meanwhile, has easily distanced all competitors, and stands to-day as the model mine of the district. Shipments have of late been greatly facilitated by the completion of the three-rail gravity tramway from the workings to the Kaslo & Slocan railway track, and its further extension by which for some reason has not lately been worked to

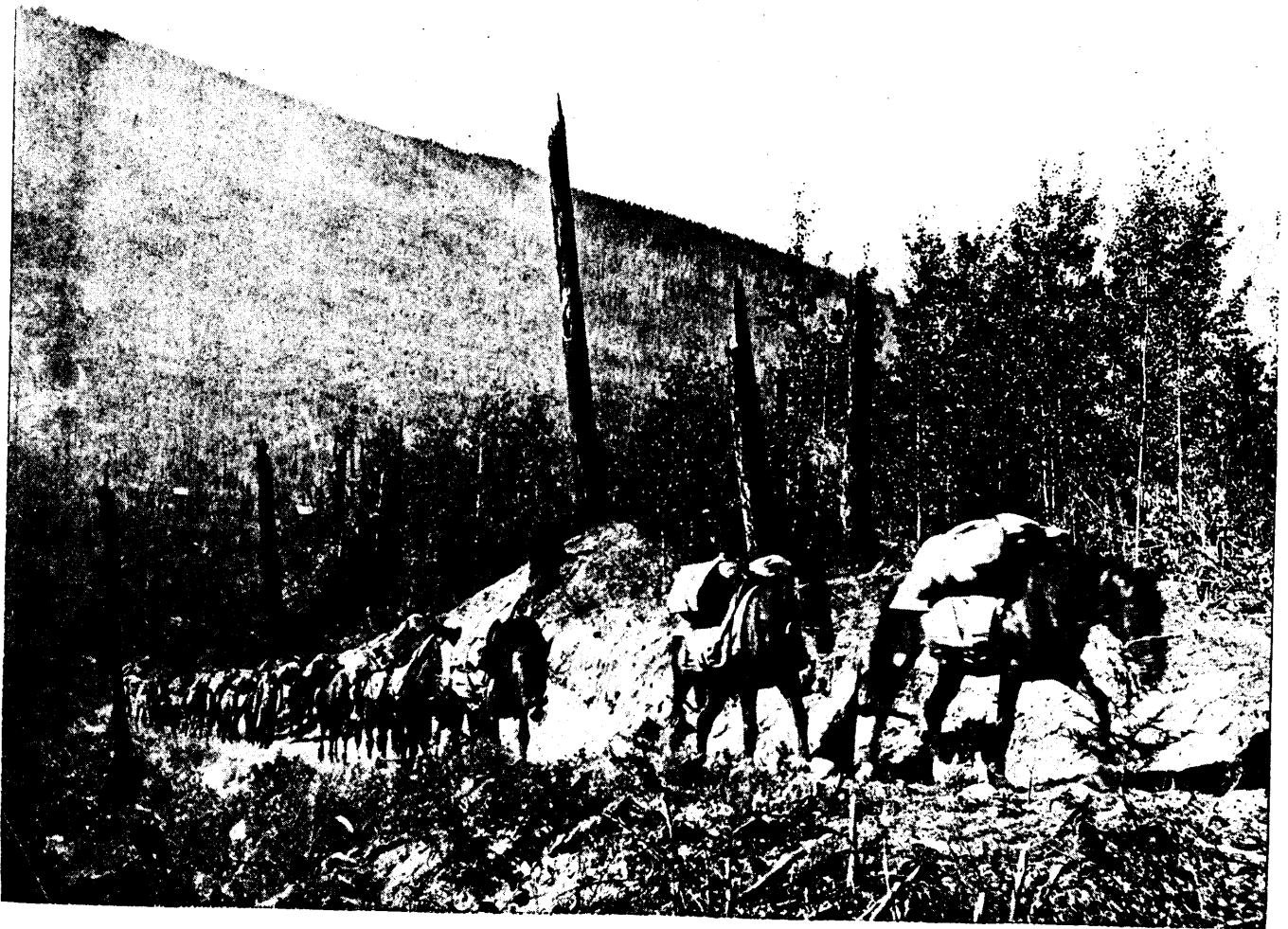
which for some reason has not lately been worked to its full capacity. At Silverton there has been much activity, and some half-a-dozen properties have commenced to ship heavily. On Eight-Mile Creek some discoveries of copper-gold ore, much resembling that at Rossland, were made during the year. The discovery and operation of the Bosun mine, which has up to the present time shipped over 400 tons of high grade ore, has attracted increased attention to properties in the vicinity of New Denver, and other prospects are being developed. The Idaho, Alamo and Queen Bess have all been put on a basis of regular shipping mines, and the Queen Bess especially has given a capital account of itself since coming into the hands of its present British owners. Throughout the Slocan, transportation facilities having vastly improved since the beginning of the year, much needed roads having been built in every section of the district.

In these districts the work carried on has been

chiefly of a prospecting character, and rich quartz discoveries are reported to have been made in the vicinities of Laforme and BIG BEND, Lardeau and Carnes creeks, Keystone mountain TROUT LAKE, and Ground Hog Basin. A local Revelstoke syndicate, known as the Carnes Creek Company, has very pluckily developed a group of claims in this neighborhood, and it is gratifying to learn, is meeting with very encouraging success. On French Creek machinery for hydraulicing was installed during the past season and very sanguine expectations are entertained, on the result of the first experimental washings regarding the profit-

several shipments of high-grade ore, the Ethel, Great Northern, and others, will become large producers.

The advent of the Crow's Nest line has had a very marked effect on the mines of East Kootenay, and while that country has long been known to carry mineral in abundance, the difficulty of access and consequent cost of transportation proved an insurmountable barrier to systematic development of most claims. The North Star has been working steadily, however, and also the St. Eugene, which latter property seems to be exceedingly valuable. Transportation facilities, and the presence of ample fuel close at hand, will surely bring East Kootenay forward as an ore-pro-



A Typical Pack Train.

able nature of this enterprise. At Albert Canyon, the development of the Waverley and Tangier mines has been continued; steady work has also been carried on in the Illecillewaet camps, shipments having been made from four properties during the year. In the Lardeau and Trout Lake districts much progress has been made, and it now seems very likely that a branch line of the Canadian Pacific Railway will be built tapping these districts from Arrowhead to the head of Kootenay Lake in the very near future, and when adequate transportation facilities are provided, many properties such as the Silver Cup, which this year has made

producing country in the very near future. Smelters at central points are also likely to be established.

Complaints have, on more than one occasion, been made to us by assayers of recognised standing practising in different localities in the AN ASSAYERS' Kootenays of the unfair competition ASSOCIATION, to which they are subjected by men who, having perhaps acquired a just sufficient elementary knowledge of their subject to enable them to make more or less correctly the simpler tests for determining the precious metal contents of an ore, set themselves up as analytical

chemists, and thereupon secure custom by reducing charges to an extent quite inconsistent with good work. As a matter of fact, not infrequently in such instances no actual tests are made at all, the ingenious, but far from ingenuous, operator getting therefore very well paid for his services, which are merely confined to the making of skilful guesses. That many so-called assayers have adopted this easy means of securing a livelihood, claim owners and prospectors in every section of the Province, and particularly on Vancouver Island, are beginning to learn to their cost; but even if these have profited by past experience there are seemingly always others ready to be victimised. The disclosures concerning the method employed by a man named Knowles who, after successfully defrauding the Victoria public for some months, decamped the other day taking with him a sum of money which he had received as a premium from an unfortunate individual whom he had under-

formed and of the results then obtained. When later Knowles' room was searched the sole evidence that assaying had been conducted on the premises was the discovery of three bottles of acid and several sacks of ore specimens, these latter in exactly the same condition as when sent to Knowles by customers some weeks previous, and for the alleged testing of which payment had been made. Indeed, the man carried his impudent swindle to such lengths as to recommend the installation of an extensive cyanide plant on the claim from which these samples were taken, on the strength of the big results he professed to have obtained from his tests, and the owners were consequently much chagrined when afterwards informed by a competent authority that the property was absolutely worthless. Meanwhile, without going into the question whether people who are foolish enough to engage for important work such as assaying the services of men of whom nothing favourable is



Before Mr. Ogilvie's Time—Sorting Mail at Tagish.

taken to instruct in laboratory work, may, however, serve as a further warning against swindlers of his type, and the following facts have been ascertained; Knowles came to Victoria in the early part of last summer, giving out that he was an Australian metallurgist and that he had invented a new process of assaying rock, using cyanide of potassium as the principal dissolvent. He advertised this so-called process very extensively and succeeded in attracting some attention, and subsequently business, to himself. Things then for a time went on swimmingly, but presently suspicion was aroused by the curious fact that none of the assays made by Knowles corresponded with the returns from similar samples sent for check purposes to other assayers, the only occasions upon which anything like accurate values were given by him being those where he had taken pains to ascertain if previous tests had been per-

known, in preference to established and reliable firms, do not deserve to be "fleeced," the fact still remains that the interests of the reputable assayers of the Province demand the adoption of measures to prevent, so far as possible, repetitions of the species of fraud to which we have referred; and the occasion therefore seems particularly opportune for suggesting the necessity of co-operation among duly qualified and reputable chemists of the Province for protective purposes, having in view the organisation of an association or society which could be regarded throughout the country as representative of this class of professional men. Such an association need not necessarily be conducted on an elaborate or expensive plan, but if properly constituted it would unquestionably be in a position to serve a most useful purpose in many ways, such as for instance the regulation of fees, charges in Western Canada being at present

far below the standard of New York or London prices for assay work. Then, too, regular meetings for the discussion of subjects of general or technical interest would of course be arranged. But in addition to the many advantages which assayers as a class would derive from the promotion of an association on these lines, the public generally would benefit at any rate to the extent of the protection incidentally afforded against incompetent or disreputable persons, who, not being able to produce satisfactory credentials, would necessarily not be admitted as members of the society.

The following trenchant criticism by the well-known money editor of the *London Daily Mail*—whom, by a trick that failed, Mr. Hooley, by the way, sought recently to discredit and oust—shows that our Western system of issuing non-assessable mining stock at a discount is not in the least understood in England, and, therefore,

“There are,” he writes, “so few people in this country who appreciate the issue of shares at a discount that it is quite surprising to find such a vigorous denunciation of the existing system as is contained in a letter signed ‘Lex’ in the *Pall Mall Gazette* of the 16th of November,” as follows:

A good deal has been recently said in your columns and elsewhere as to the evils of over-capitalisation of companies in their inception, but very little as to the causes which have led to this evil. So far as I have been able to observe, there does not seem to have been any real attempt to trace it to its real source. I venture to suggest that to cure an evil an accurate diagnosis is first necessary. Original over-capitalisation exists only in cases of those companies floated by professional company promoters. Why, then, have company promoters? Because the law practically compels it. The law enforces the issue to the public of capital at par, but permits at the same time the issue to the promoter of the same capital as is offered to the public at par to the promoter at a discount. This discount, added to the original cost price of a venture, goes into the hands of the promoter and produces over-capitalisation and its artificial market manipulation.

That the law enforcing the issue of capital at par and preventing its honest issue at a discount is a rotten law needs no demonstration. The permitted use and almost universal



A UNIQUE TEAM.—Using goats to haul supplies in Yukon.—(The strange building in the background is the photographer's dark room).

when there used, is apt to discredit enterprises thus organised. Says the *Daily Mail*:

“Prospectuses of the British Pacific Gold Property Company, Limited, are flying about. The head office is in Victoria, British Columbia. The undertaking was incorporated in March, 1897, and the capital is \$5,000,000 in shares of \$1 each, which are fully paid and not liable to assessment. The agents in this country are informing those whom it may concern that these dollar shares can be bought outright for 10 cents, or 5d. each. This sounds a little too bad to be true; but if the company's agents are pressing investors to buy them at so low a price, we may take it as good evidence that they are not worth having.”

Strangely enough, our London correspondent also takes up this subject in a letter to the *MINING RECORD* this month.

adoption of the waiver clause is sufficient proof of its rottenness.

Do away with the necessity for its use, permit the issue of capital at a discount, enforce the disclosure of the amount of the discount a vendor is willing to take and give, and the promoter's only source of profit is gone, and with it the chief inducement to over-capitalisation. But so long as the law prohibits a company from issuing its capital at a discount, but permits the same capital to be secretly issued through the company promoter, a great blot remains upon the whole system of company formation. To prevent secret underwriting may possibly prevent many companies from coming into existence, but at any rate it will not prevent any company from coming into existence which is really worthy the investor's notice. If a vendor has a good business to sell he can and will be his own promoter.

Of course capitalists, bankers, brokers, underwriters, and all those whose income is derived from the company promoter,

will tell you that such a change in the law will be fraught with grave and terrible dangers—that you cannot deal in shares issued at a discount, that bankers will not look at them—in fact, that a great part of their business will be gone. The answer to all this is that in some of the colonies and elsewhere no such prohibition of capital at a discount exists. What the public needs is to be educated to purchase shares at a discount rather than at a premium. It is notorious that the public prefers a premium, and will only buy at a premium, and so it comes to pass that only in cycles when booming times occur the public come into the market.

All this could and should be done away with if the absurd law which prevents a company from issuing its capital at a discount were abrogated, and the public, and not the promoter, and capitalist, and broker, were permitted the sole right to appreciate the advantages of buying at a discount.—
I remain, your obedient servant,
LEX.

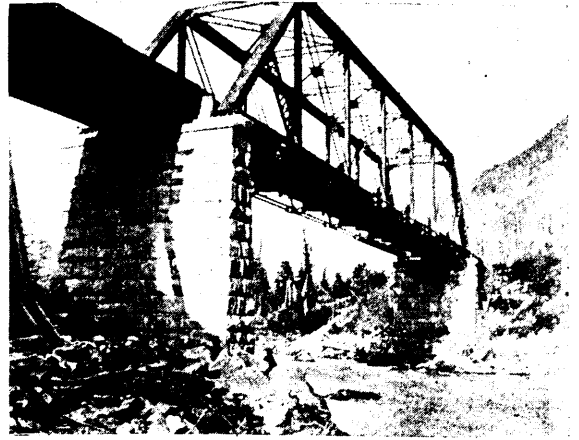
In England it is illegal to issue shares at a discount, and the result is that whenever the shares of a company are quoted in the market below par there is a disposition to view askance the particular company. The public who originally applied for the shares have



Transporting Ore Cars on the Arrow Lake.

to pay par for their holding, and they cannot understand the selling of the dollar share at 1-20 or 1-10 of its face value. Lex is one of the first to recommend an adoption of the principal obtaining in "some of the colonies and elsewhere." But it must not be imagined for one moment that because this correspondent is allowed to ventilate his opinions in such a leading journal as that quoted, that there is any desire for a change in the law governing the issue of capital in this country, or any prospect of an agitation in this direction. The issue of capital at a discount no doubt has many advantages, but English investors are far more ready to pay a premium for shares than to acquire them below par. Public estimation of a property or prospects is in the same ratio as the market price. It is for this reason that the English investor has not taken kindly to the quantities of dollar scrip which have been hawked about London during the past two years at very substantial discounts. Although incurring a greater risk, the investor would rather pay £1 a share for a hundred shares in an English company than buy 500 dollar shares in a Canadian at say 75 cents, which point for point might be a much more attractive venture, and more deserving of support than the English registered concern. But while in Canada the market price of a company's shares is based upon intrinsic merits, in England directly a security falls below par people begin to think it must be in a bad way; quite ignoring the particular conditions which may govern the

quotation, such as the pressure on the market of a deceased account, politics, dear money, and all those other factors which are constantly harrassing the stock market and making the dealers undesirable of buying the parcels of shares offered them except at reduced prices. Quite apart from the discount question," continues our London correspondent, the writer, whose letter I have quoted, has



A Span of the Railroad Bridge Over the Columbia River.

some strong remarks to make about "over-capitalisation." This is a subject which I have myself dealt with in previous letters, and it is encouraging to find such a prominent journal as the *Pall Mall Gazette* taking up this matter. It is the greatest curse of



Damming a Stream in Illecillewaet.

joint stock company promotion, and the evil is most noticeable in the cases of these mining ventures launched here by the unscrupulous sharks who infest the city, and who are so seldom brought to book that they do not hesitate to float as promising mining ventures third-rate prospects. I know of British Columbia and Klondike promotions which were simply launched in order that the promoters might secure large parcels of shares, and foist the same on the public by means of fictitious premiums, and market prices, which were only "made" in order to entice fools, who apparently have more money than brains. No doubt by and by (if the Lord Chief Justice's recent suggestions are adopted and reforms of our company law are instituted) some of these promotions may receive the searching criticism which they deserve. In the meanwhile the knaves who brought

them out flourish like the green bay tree, and the particular quotations stand at substantial discounts. Inquiry is fruitless, only vague replies being vouchsafed to the dejected and depressed shareholders, who, responding to the premium bait, parted with their money for scrip in companies which were never meant to be anything more than a means to an end. A property may be a mere prospect or two, bought in British Columbia, or a valueless claim in Klondike, acquired for a few thousand dollars—at the most \$25,000 would be paid. A company is then formed with £100,000 capital and the vendors are paid by a vendor's subservient board £90,000 in cash, or shares, just as the public "may come in." There is perhaps a stipulation that so much money shall be set apart "for working the property;" usually a small and quite inadequate sum. If investors are not invited publicly to subscribe, the vendor probably gets £90,000 of shares, and arranges to find a small sum for working expenses. He then proceeds to "make a market" for the shares, and as the public (who may not even have had an opportunity of knowing where the particular property is even located), "come in," he unloads as rapidly as possible. When he has finished, the price vanishes, or becomes "nominal;" the company as a rule in nine cases out of ten soon gets into difficulties, the shareholders are summoned, and usually—quite without effort to compel a compulsory liquidation by the court—which none of these sharks dare face with equanimity—the necessary resolutions are adopted, often by means of packed meetings, and the concern joins the great majority of forgotten swindles. There are hundreds of instances like this which have come under my own notice; and in many cases the promoters even dared to start the company, and market their shares, without taking the preliminary trouble to give the company the veriest apology for "a mine." It is, however, worth noticing that these latter are *extreme cases*, for even the worst of sharks knows that this is going too far even for those financial pirates whose lives are spent (in company with third rate and disreputable attorneys) in solving the problem of how close it is possible to sail to the wind. The law of joint stock companies is at present wholly inadequate to cope with these disgraceful scandals, one of the worst of which is "over-capitalisation." Reform is promised; but to those of us who regret the villainies perpetrated by vicious promoters, reform seems to move with leaden feet. British Columbia has already been exploited, and many of those who have been caught in the toils will feel so disgusted when they discover the mistakes they have made that they will hate the name of British Columbia for many a long day. And in this way it may come to pass that by and by even sound propositions deserving of support will be cold-shouldered by those who cannot distinguish for themselves between the good and the bad, and having been hurt once will not believe that good can come whence they first experienced evil fortune. Let us hope for the sake of British Columbia that things may remain quiet and depressed long enough to enable these much talked of reforms to be introduced, and if possible render impracticable or impossible the flotation of such flagrant cases as have already disgraced the promoters who have found British Columbia an excellent medium for the consummation of their base projects.

It is eminently probable that the Great Northern Railroad Company intends in the early future to make

strenuous efforts to obtain as large a share as possible of the ports of British Columbia by means of new connecting lines, provided always of course that the necessary powers of construction can be obtained. The obviously assumed ignorance and many curiously worded disclaimers of President Hill, when recently interviewed by several pertinacious Provincial press representatives, all lead to this conclusion. Mr. Hill has indeed made the suspicion that he has important new schemes on hand a certainty, when he went so far as to "know nuffin" of the future plans of several branch lines tapping certain districts of South Kootenay, which are known to be connected, and have indeed been advertised to the investing public as connected with the Great Northern system. Mr. Hill said among other things that his system would not tap the Westminster-Vancouver district, since even the well managed C. P. R. could not make money out of it, and also asserted that Sir William Van Horne might, so far as he was concerned, have the whole of the Boundary Creek territory, which Mr. Hill further characterised as not a region of prospects. Evidently the Great Northern's astute President has in so talking followed the suggestion of the famous diplomat, who asserted that language was given to conceal one's thoughts.

Meanwhile the Canadian Pacific Company do not propose to be left in the lurch, as witness the extensions now in progress at the Trail smelter, whither large consignments of new plant have lately been got in weekly; and note, too, the surveys and other preparations which seemingly indicate an early extension of the Crow's Nest line from Nelson to the very promising mine district of Ymir, which can thus be approached, so it is stated, by an easy grade.

If the British American Corporation succeeds in securing par value for the fully paid shares in part taken for the Le Roi mine purchase money of £950,000, the Corporation will make a very large profit on the transfer to the new company undertaking that is to own and work the mine. Making all allowance for the cost of buying out the original stockholders, as also estimating at the fullest probable amount expenses on commissions, litigation and flotation, a sum representing in sterling about £800,000 should cover the cost of the mine to the Corporation. This means a possible profit on sale in the neighbourhood of £150,000. It is interesting to note in this connection that had the whole of the original Le Roi stockholders been bought out at the value ultimately received by the minority who stood out for what they deemed the fullest amount they could get—the equivalent of \$8.25 a share—the mine and its smelter accompaniments would cost \$4,125,000, or £850,000 in round figures. The price at which the Le Roi properties are being transferred to the new company represents therefore, reckoning at par fully paid shares taken as part of purchase money, about £100,000 more than the value placed on the properties by their former American holders. They, however, in estimating the sale value of such undertakings reckon on larger average dividend returns than the British investor, and want ten or twelve per cent., where the latter would be well content with seven or eight, plus the setting apart of a sufficient reserve or depreciation fund.

How greatly mining men need a narrow gauge railroad into Cariboo is suggested by figures recently given by a Barkerville correspondent of the *Ashcroft Mining Journal*. He states that it has cost a big hydraulic mine company from \$70,000 to \$80,000 to get in its heavy machinery by waggon road and trail, whilst mine workers often have to spend in similarly getting into the country well nigh half their net summer wages. Even allowing for the fact that the correspondent in question quotes somewhat extreme cases, it is clear that a Cariboo railroad would vastly reduce the cost of getting into and working the mines of that country. The question to be solved by would-be railroad projectors is whether or not such a railroad would earn dividends, and this seems to be still a point not finally settled to the satisfaction of those who are believed to have the enterprise in view. If, however—as generally expected—the coming season shows a big advance in Cariboo's gold production and general mining development, the earning possibilities of railroad enterprise in that country will be more clearly shown. Meanwhile, having regard to the present state of the Province's finances, and the attitude of the present administration in opposition when such questions as the subsidising of similar undertakings arose for discussion, it seems improbable that a Cariboo railway would receive much aid from the Provincial Government of any kind.

The Estate, Finance & Mines Corporation of London has recently issued an interesting and well illustrated circular to its shareholders, stating the present position of the subsidiary company known as the Fairfield Exploration Syndicate, Limited, in which the Corporation owns nine-tenths of the present capital of £33,000. The circular shows that among the assets in respect of this capital, the Syndicate owns the very promising Dorothea Morton gold mine, now under development at Shoal Bay, in addition to some ten other adjacent undeveloped, full and fractional claims. The report shows the extent to which development has gone on the Dorothea Morton, and further places the cost of the crushing of the ore from this property on the estimate of the engineer, Mr. J. Lang, at about \$4 a ton, while the very lowest average contents of the ledges runs to \$10 a ton in gold. The Syndicate, with a view of having at least two strings to its bow, has also acquired five lots with a double frontage to Granville and Pender streets, Vancouver, on one of which sites business premises are now erected, while on the others a second large block is being built. It looks, therefore, as if the syndicate has secured good value for its investments in general, sufficient to justify the proposed increase of its capital to £50,000. The future values of the site and buildings in Vancouver should alone prove worth more than the present capital of £33,000 within the course of very few years, as central site values are increasing steadily, and must for at least a decade continue to increase in such a centre as Vancouver.

The making of the Nicaragua Canal must have a beneficial effect in reducing the time and cost of shipments of various ore products from British Columbia to sea-board points in the United States and the United Kingdom, and already many consignments of crude ore are being made to Swansea. It is therefore satisfactory to learn from a mining as from a more

general commercial standpoint, that there is now every disposition at Washington to regard favourably continued adherence to the Clayton-Bulwer Treaty, by the terms of which any Nicaragua Canal is, if constructed, to be under the joint aegis of the Empire and the United States. Having regard to the growing vastness of British and Canadian interests on the Pacific, its islands and its continents, it were worse than folly, even for the sake of ultraconciliation of our neighbours to the south, to hand over, as the *Spectator* lately suggested, the sole control of a Nicaragua Canal to the United States. The rulers and people of the States fortunately recognise, too, that it will be safer for their own interests to secure joint protection for the great canal, if, as is now probable, its construction is to be shortly carried into effect, and it is to be hoped that both British and American capital will be invested in the enterprise.

Since the accident on Sunset No. 2 a few more have occurred, with the usual loss of life, in the Kootenays. It is not to be said that the owner is invariably to blame, but just the same if the Mining Inspector were ubiquitous many of these accidents would not occur. As that official cannot be everywhere at once, it would seem to be necessary that more should be appointed. But this would add very considerably to the expenses of government, and the inevitable result would be the increase of taxation. There is little use in the multiplication of laws. The usual trouble is that the laws that do exist would cover the case could they be adequately administered. If the mine owner knew that it lay in the power of any person cognisant of the facts to lay an information and get a moiety of the fine in case of conviction, he would be apt to think, despite the well known disinclination on the part of our people to earn money by "informing," that he had a mine inspector in every person that approached his workings, and would govern his acts accordingly. The law-abider would have to fear nothing, but the law-breaker would be at the mercy of the chance informant. Nobody hesitates in giving a criminal up to justice, and from an ethical standpoint there should be no hesitation in surrendering a constructive convict to manslaughter. The way suggested would not be an expensive method and would probably prove an effectual deterrent from any overt acts, and should work equally well if the fines were made sufficiently heavy with sins of omission as with sins of commission.

The rush to the Atlin gold fields is about to yield very substantive returns to the companies jointly operating the White Pass & Yukon Railroad—in which British home capital is, in addition to American money, very largely invested. The terminus of the line above brings the gold fields in question within eighty miles of Atlin, and it is understood that those behind the railroad contemplate, providing the necessary parliamentary powers can be obtained, an early extension to the new gold fields. It is satisfactory to learn that the White Pass Railroad is, especially for a line through such a rough country, exceptionally well and substantially laid, almost after the fashion of an English railway. This, however, is only what might have been expected of a company having the advantage of both a substantial capital and aided by the best engineering skill.

Upon the concurrence, we understand, of Mr. J. D. Kendall, and no better engineering opinion is obtainable in British Columbia—to whom the situation was fully explained—the directors of the Golden Cache Company have decided to raise the necessary money, as recommended by the shareholders committee, to continue the development of the property. There can be no doubt that providing the work is capably superintended, this measure is the best that could be adopted under the circumstances. It is just a case of make or “bust.” If the affairs of the company had been wound up by the sale of the machinery and plant at the mine, which are the only assets, the shareholders would have realised possibly half a cent per share. On the other hand if Col. Rives, the present superintendent, knows what he is talking about, there is still a good chance of finding pay ore on the property by carrying out the plan of development as already outlined by him. It is but pious to add that such a consummation as the profitable working of the Golden Cache mine is devoutly to be wished in the interests of the Province’s reputation in Great Britain, but one can hardly be sorry for men such as Mr. Oldroyd, M. P., who has behaved as regards his connection with this company very much after the pattern of the celebrated “Jubilee Plunger.”

Apropos of the Golden Cache affair, we feel bound to say that Mr. MacKinnon, who a few days ago requested an interview with a representative of the MINING RECORD, has given us a very plausible and very likely a perfectly true account of his connection with the company, which if his statements can be verified, would seem to require an apology from us for some of the criticisms we felt obliged to make in last month’s issue anent his conduct in resigning the chairmanship of the company at the last moment, and in reference to other actions which to us had an exceedingly dubious appearance. Upon the invitation of our representative Mr. MacKinnon expressed his intention of writing a statement for publication in the MINING RECORD, giving the true story of the Golden Cache Company, with facts not at present known to the public, and also promising to forward a copy of his agreement with the English syndicate who purchased the timber limits at Takush Harbour, to show that it was impossible for him to have acted in any other way but honourably in this affair, to which it will be remembered we also referred last month. Up to the time of going to press Mr. MacKinnon had not kept his promise in either of these respects, but no doubt, in the publication of next month’s issue he will find an opportunity to do so. It is, meanwhile, worthy of note that whereas at the meetings of Golden Cache shareholders held in Vancouver in November, more than one gentleman referred to Mr. MacKinnon, who was not present, in the reverse of complimentary terms. At the meeting of the 7th of December, Mr. MacKinnon having then returned, these strictures were not repeated to his face. We desire above all things to be fair, and if Mr. MacKinnon can prove that he did his duty as president of the Golden Cache Company, it will afford us a real satisfaction to admit that we were too hasty in forming the conclusion, to which he has taken exception. The same remark applies to Mr. McQuillan, formerly vice-president of the company, who has demanded a retraction and apology from us. Mr. McQuillan, we feel sure, will fully appreciate our reasons for not instantly complying with his request. But while awaiting this apology perhaps it would not be altogether inappropriate if he

would pass the time by recounting for the edification of a large number of people the part he played while a member of what was, if we remember aright, known once as the “Japanese Syndicate.”

Instances of capably managed and profit-earning English companies operating in British Columbia mines have hitherto been only too rare, and it is therefore with very genuine pleasure that we turn to the report of the second ordinary general meeting, held the other day in London, of the Dominion Mining, Development and Agency Company, Limited, to note the eminently satisfactory statement that the chairman of this Company was able to make to the shareholders. The Company as, of course, is known, have among other valuable or promising properties an interest in the Queen Bess mine, near Sandon, which is turning out wonderfully well, being this month, in fact, the fifth largest producer in the Slocan. The property was acquired in the same manner as others this Company own. That is to say, it was purchased as a prospect pure and simple, at a moderate enough price, and afterwards developed, until now it has been opened up to the extent of five thousand feet. Some few of the prospects exploited in this way have proved disappointing, but the generally excellent working of this plan, which is, be it remembered, that universally followed by Americans but rarely by Britishers, is plainly to be seen by a glance at this Company’s balance sheet. The Company has paid its own way for a period of sixteen months, during which time, besides the Queen Bess, a large number of prospects in different parts of the Province have been acquired and developed. Of these, seven so far have been abandoned as worthless. In the New Westminster District the Company also own a very promising group of high grade copper claims at Pitt Lake. In concluding his report the chairman asked the meeting to confirm the substantial dividend which it was proposed should be paid. Much, however, of the success that has rewarded the enterprise of the Dominion Mining, Development and Agency Company in British Columbia is due to the integrity and ability of the Company’s local managing director, Mr. C. Kingsley Melbourne; and this fact, it is gratifying to learn, is properly recognized by both his colleagues on the Board and the shareholders generally.

Yet another well managed English Company, the London and British Columbia Gold Fields, is assisting in proving to home investors the profitable scope for legitimate enterprise this Province affords. Thus it is reported that this Company has declared a cash dividend of twenty per cent., and also divided 20,000 shares in the Ymir Mines Company, the par value of which is £1. The London & British Columbia Gold Fields has operated in West Kootenay not longer than two years, during which time it has paid its shareholders nearly fifty per cent. in dividends on a capital stock of \$200,000. The Company holds controlling interests in the Ymir and Whitewater mines, two of the most promising properties in Kootenay.

Mr. Frank S. Taggart, who runs a sort of “bucket shop” in Vancouver, and in connection therewith a little weekly print, pretentiously styled the *British Columbia Mining Critic*, very naturally takes great exception to the paragraph we quoted last month

from the London *Critic*, in which he was deservedly "slated," and, as a means of defending himself, pretends through his paper to believe that the paragraph in question "bears indubitable evidence of having been sent to the London publication from Victoria" in order to injure the Vancouver Chamber of Mines. The insinuation is quite worthy of Mr. Taggart. But we should seriously like to ask those among the executive of the Chamber of Mines who are gentlemen, whether, providing of course they desire that this institution shall in due time attain to a proper and representative standing, they consider it advisable that Mr. Taggart should continue as their colleague? The paragraph in Mr. Hess' excellent paper was not written in Victoria, it is hardly necessary to say. But since Mr. Taggart challenges us we can state confidently that it was because of Mr. Taggart's connection with the Chamber of Mines that the Chamber of Mines came in for a part of the condemnation that was especially aimed at Mr. Taggart. Following the paragraph we quoted last month was another which, perhaps, foolishly, we omitted to quote. This referred to Mr. Taggart's treatment of his London correspondent, Mr. C. J. Walker, who is both well known and highly esteemed in London journalistic circles. Mr. Taggart induced this correspondent to contribute some dozen lengthy letters to the *British Columbia Mining Critic*; then, after Mr. Walker had asked repeatedly for the remuneration due him for his services, Mr. Taggart sent him a cheque for the amount. This cheque was dishonoured and Mr. Walker was obliged to pay the protest charges. Mr. Walker then put the matter in the hands of a firm of professional collectors who succeeded in getting Mr. Frank S. Taggart to give them an order in favour of their client, on Messrs. Street & Co., the London news agents. Unfortunately, however, Messrs. Street & Co. were not in Mr. Taggart's debt to anything like the amount he requested them to pay, and there the matter now stands. The Chamber of Mines should truly be proud of its disinterested champion, should it not?

One of the best known mining men in Nelson, Mr. A. H. Holdich, writes to the MINING RECORD on the subject of the inauguration of Science Classes in the mining districts, as follows: Whether the Government will be able to see its way to assisting in science teaching must of course be doubtful till Parliament meets; but a course or courses of lectures on scientific matters generally (which should be experimentally illustrated) would be of the utmost value. Take the subject of mineralogy for instance, surely it is of the greatest importance to our prospectors to know a piece of rock when they see it; and the first elements are not at all hard to learn. Maybe when that bright day comes, as it is to be hoped it will, we shall hear less about "bromides" in connection with the copper-stained quartz, and possibly even "chloride of gold" will not be so common as some think when they wipe off some dry ochre from a piece of iron stained schist! Surely a sound if slight acquaintance with mineralogy, geology and mining is an attainment well worth having. Let us hope that some such scheme can be arranged whereby sound instruction can be imparted to those who want to learn (and they are many), and then nothing but a brilliant and highly profitable future can await this section of the Province.

The publishers of the *Boundary Creek Times* are to be cordially congratulated upon the publication of a quite superb holiday issue. The number, which is handsomely illustrated throughout with views of the Ironsides, Knob Hill, Mother Lode and other mines of the district, contains also an exceedingly valuable article by Mr. J. C. Hass, M. E., describing in detail the ore deposits of the several camps, and a careful and conservative paper on the same subject, but dealing more particularly with the question of smelting and concentration with relation to the Boundary Creek ores, by Mr. Frederic Keffer, M. E., manager of the Mother Lode mine. We are glad to learn that the "Holiday Edition" of the *Boundary Creek Times* is to be widely distributed.

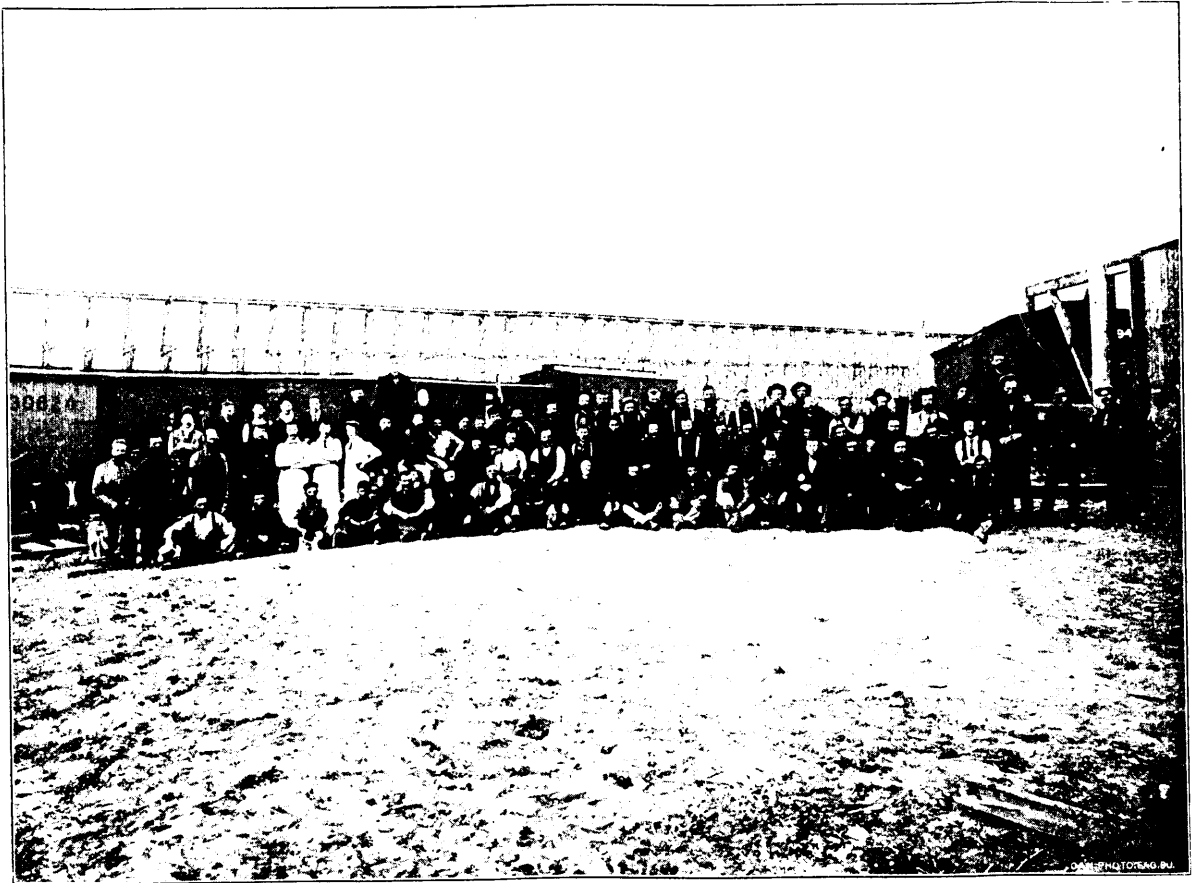
The announcement is made that the Canadian Pacific Railway Company has decided to proceed with the erection of a smelter of large capacity in the Boundary Creek district. While this report has not been officially confirmed, there is at any rate much in favour of its authenticity. The great railway corporation has within the past month, we understand, received eminently convincing proof from the Rossland district of the satisfactory results obtainable from the operation of custom smelting works in combination with the carrying business; and as we have repeatedly pointed out, the enormous but generally low grade bodies of ore, characteristic of the Boundary Creek district, cannot be mined at a profit until local reduction works are established. The C.P.R. by taking steps to build a smelter at once at a conveniently central point in this district should do so in order to provide for the immediate profitable operation of the new Columbia & Western branch line upon its completion next summer to Greenwood or Midway. There is every likelihood, meanwhile, once the continuity of some of the larger deposits in Deadwood, Greenwood and Summit camps is sufficiently proved, that in a large number of cases companies owning properties in these localities will find it economical and in many other ways advantageous to set up matting plants of their own for the reduction of the ore on the spot. Already in one case this is proposed, and a company has been promoted in Montreal to erect such works for the treatment of the ore of the Knob Hill and Old Ironsides mines, two properties which have come greatly into prominence of late by reason of the magnitude of the ore bodies that have been exposed in the course of development.

Whilst the ten per cent. royalty on Klondike gold raises adverse comment enough in the United Kingdom, the proposal of the Transvaal Government to tax gold mining profits to the extent of five per cent. *ad valorem*, irrespective of dividends earned, creates almost a panic amongst those interested in South African gold mining. The tax would, in the Transvaal, of course, have a far more detrimental effect than has the even larger levy in the Yukon, as the gold on the Rand is of low grade, and many of the companies are so much overcapitalized that only by the use of the highest skill, the most elaborate equipment, and the employment of the ordinary labour, can good dividends be attained from the successful minority of the mines. The proposed addition of a five per cent. tax to the burdens of the industry, consequently means for many a Transvaal gold mining company the difference between a fair and a poor dividend.

AN EXCURSION OVER THE CROW'S NEST PASS LINE.

ON THE 7th of December a party of seventy-two gentlemen representing the mining and commercial interests of West Kootenay availed themselves of the generous offer of the Canadian Pacific Railroad to visit the southern portion of East Kootenay, which has just been opened up by the completion of the Crow's Nest line, (writes a representative of the MINING RECORD.) The trip occupied three days, during which time the visitors had ample opportunity to become impressed with the resource of the country through which the line passes. Fernie, however, was the objective point of the expedition, and it is here where the coal mines are being developed and operated by the Crow's Nest Pass Coal Co. The company I am informed have a coal area of seven by twenty-

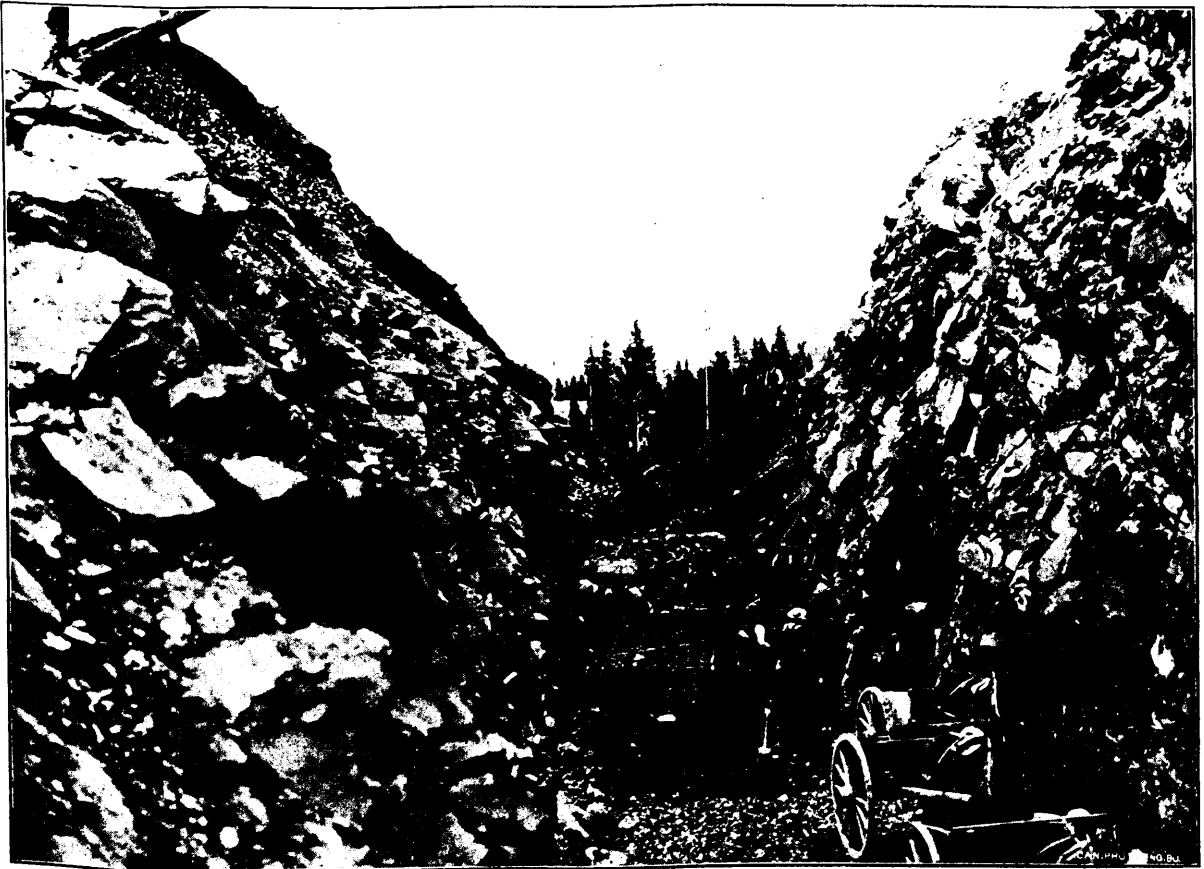
structed that its capacity can readily be increased. The coke ovens are situated about half a mile from the town. Fifty ovens are completed and in operation, turning out in the neighbourhood of seventy tons of coke per day. It is, however, the intention of the Company to increase the number of ovens at an early date. The quality of the coal that is being mined is excellent, containing as it does seventy-eight per cent. fixed carbon, while for coking purposes it is very little inferior to the Pennsylvania product. The General Manager of the Company, Mr. S. W. Blackmore, was formerly Assistant General Manager for the Dominion Coal Company at Glace Bay, C.B. Besides operating the mines, the Crow's Nest Pass Coal Company have extensive interests at Fernie, being in fact the owners of the townsite, where an excellent waterworks system has already been successfully inaugurated.



A Gang of Construction Workmen on the Crow's Nest Pass Railway.

two miles in extent, which they have leased from the C. P. R. for a period of 99 years. The mines are situated on Coal Creek, some five miles from the town, with which they are connected by a branch line. The company have done considerable work of late in opening up this property. Some 1,500 feet of drifting has been run in on the coal seam, which will average about 7 feet in thickness. The mine is well lighted by incandescent lamps of 16 candle power, and power for the operation of the drills and driving the engine is also generated by electricity. This engine will be used for hauling out the loaded cars. No timbering is required, and indeed all the conditions are favourable for the most economic mining. Commodious coal bunkers have been built, and at present about 200 tons of coal per day are being shipped; the plant, however, is so con-

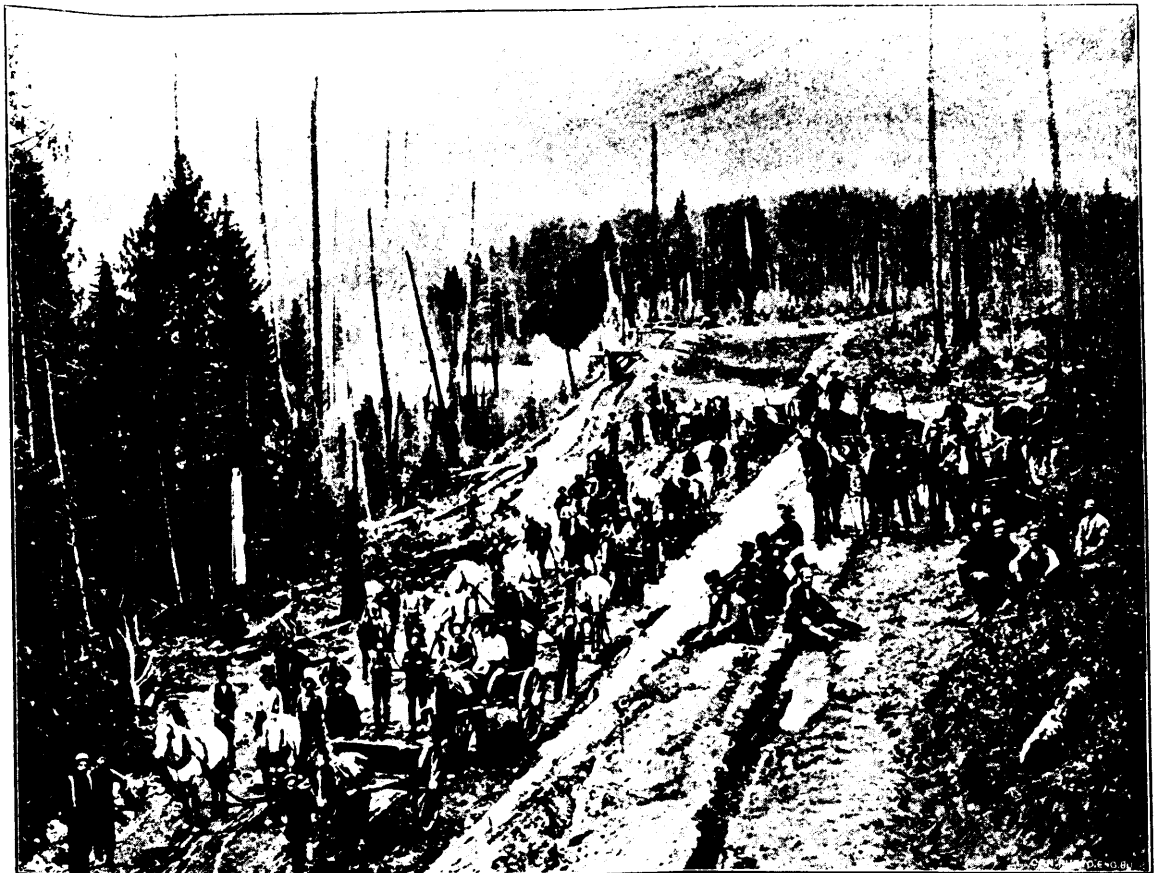
The visitors, after leaving Fernie, visited Fort Steele, Cranbrooke and Moyie City, and at each place, it is needless to say, were most hospitably entertained. At Moyie City are located the now famous St. Eugene, Lakestone, and Moyie group of mines, the three groups being all located on the same ledge, but the St. Eugene was the first location. Upon all the properties much development work has been done, and they are no longer mere prospects but promising mines, from which large shipments will ere long be made. The ore bodies are on an average four feet between walls, showing perfectly clean ore, and averaging silver 40 ozs. and lead 60 per cent. On the St. Eugene a tramway and ore bins are being built. Here is a practical illustration of what a railroad does for a mining district. Before the construction of the Crow's Pass road, the ore from these mines was to all intents



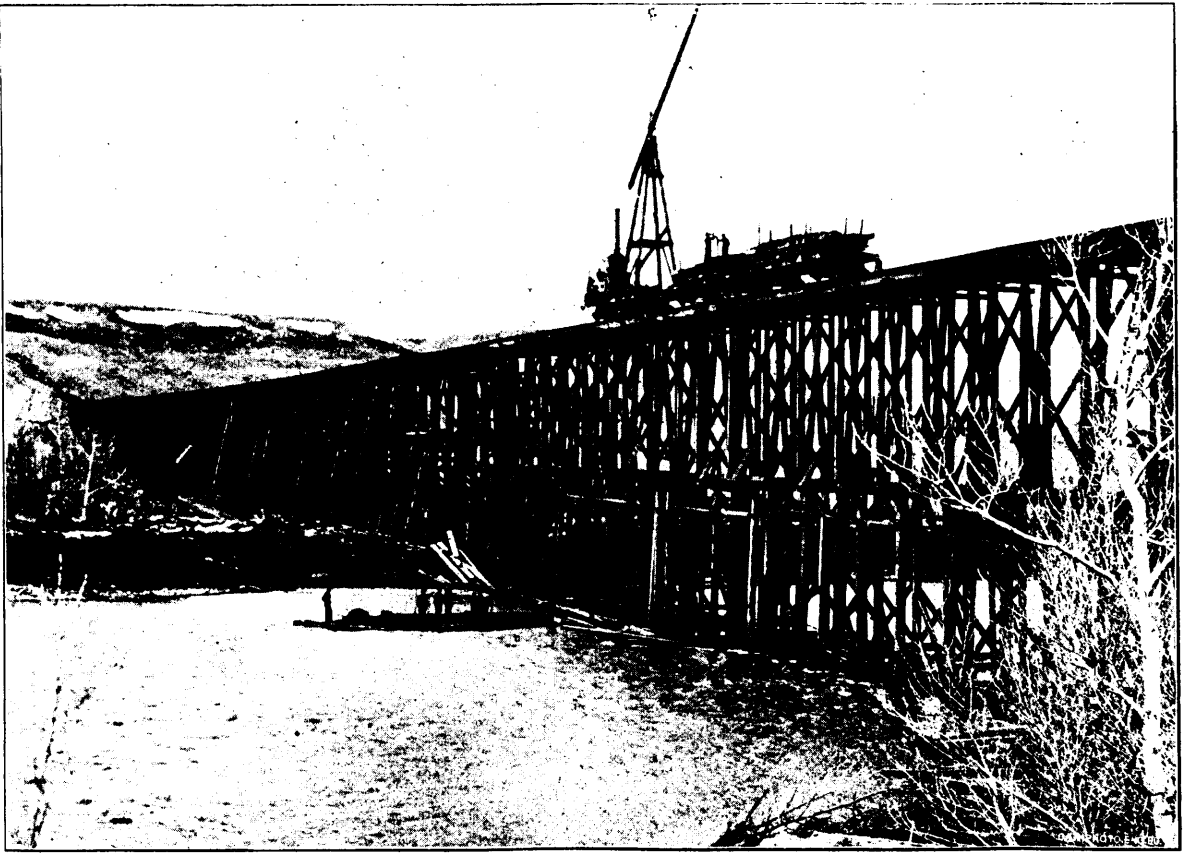
A Difficult Cutting on the Railway.

and purposes valueless, owing to lack of transportation and smelter facilities. The owners of the various properties, however, realising that it was only a matter of a short time before a railway

was built, wisely refused to sell at the prices then offered, but instead worked and developed their claims, which are to-day, in consequence, exceedingly valuable. On the return journey a short stop was



Grading the Track Near Kootenay Lake.



The Trestle Work at St. Mary's River.

made at Russell Creek Siding, where the waggon road is being built into the White Grouse valley. A section of country in which some excellent prospects of copper and silver are being opened up. It is

expected that this district will come prominently into notice ere long, since it is now easy of access owing to the building of the railroad.



Water Fall, St. Mary's River.

THE MINISTER OF MINES.

THE Hon. J. Fred. Hume, who joined Mr. Semlin's Cabinet as Minister of Mines and Provincial Secretary upon the defeat of the last Administration, in July of the present year, is a Canadian by birth, but of Scottish parentage. He was born at Jacksonville, Carleton County, New Brunswick, on the 8th of August, 1860. After receiving a common school education in his native town and undergoing a short course of commercial training, first at the City School, at Fredericton, N.B., later as an employee with local firms, Mr. Hume "came West" in the spring of 1883, and for twelve months was engaged as manager for the firm of H. A. Perley, General Merchants, at Carberry, Manitoba. Early in 1884 he left Manitoba for British Columbia and travelled almost as far by rail as was then possible—the C. P. R. having just completed the line to Laggan—and established in partnership with a brother a "General Store" business at Golden. This partnership was subsequently dissolved, and upon the retirement of his brother Mr. Hume admitted into the firm Messrs. J.H. McNulty and T. Dobson, the partnership being known as Hume, Dobson & Co., of Donald. In 1885 this firm moved their headquarters to Revelstoke, Messrs. Dobson & McNulty superintending the removal of the stock on sleighs drawn by 8 horses over the mountains and Mr. Hume following the water-route from Donald, *via* the Columbia River around the Big Bend, a journey which occupied over four weeks to perform. Mr. Hume reached Revelstoke to find that his partners who had arrived first, had erected new premises which, with the complete stock, were destroyed by fire, entailing a loss, as there was no insurance, of upwards of \$10,000. Later Mr. Hume bought out the two partners, however, to meet with fresh disaster from fire, and this time the loss was \$20,000. But, under the circumstances, with wonderful pluck and energy, Mr. Hume again and for the third time set to work to rebuild his premises at Revelstoke, where he conducted a successful business until 1890, when becoming as-



THE HON. J. FRED. HUME, MINISTER OF MINES.

sociated with Mr. Lemon he opened a store in the first log building used for that purpose in what is now the thriving stone and brick built town of Nelson. Not content with a log building, in the following spring after dissolving partnership with Mr. Lemon, Mr. Hume erected a frame building in place of the log structure. This was also the first building of its kind to be built in Nelson. In 1895 Mr. Hume decided, after having been the "pioneer merchant" of Golden, Donald, Illecillewaet, Revelstoke, New Denver, Silverton, Sproat's Landing and Nelson, to retire from mercantile pursuits. He was married at Revelstoke in 1891 to Lydia J. Irvine, daughter of David Irvine, Esq., at one time member of Parliament—and

now in Her Majesty's Customs—for Centreville, Carleton County, N.B.

Mr. Hume has been actively engaged in mining since his first arrival in the Kootenays. It is said, moreover, that he has paid well for his practical experience in this seductive and interesting pursuit, but he now holds big interests in several mines and is a large stockholder in a number of good solid companies. Mr. Hume was the promoter of the first steamboat to ply upon the Columbia River between Revelstoke and Sproat's Landing, and afterwards organised and became associated with the Columbia & Kootenay Steam Navigation Co., which, two years ago, sold its fleet and assets to the C. P. R.

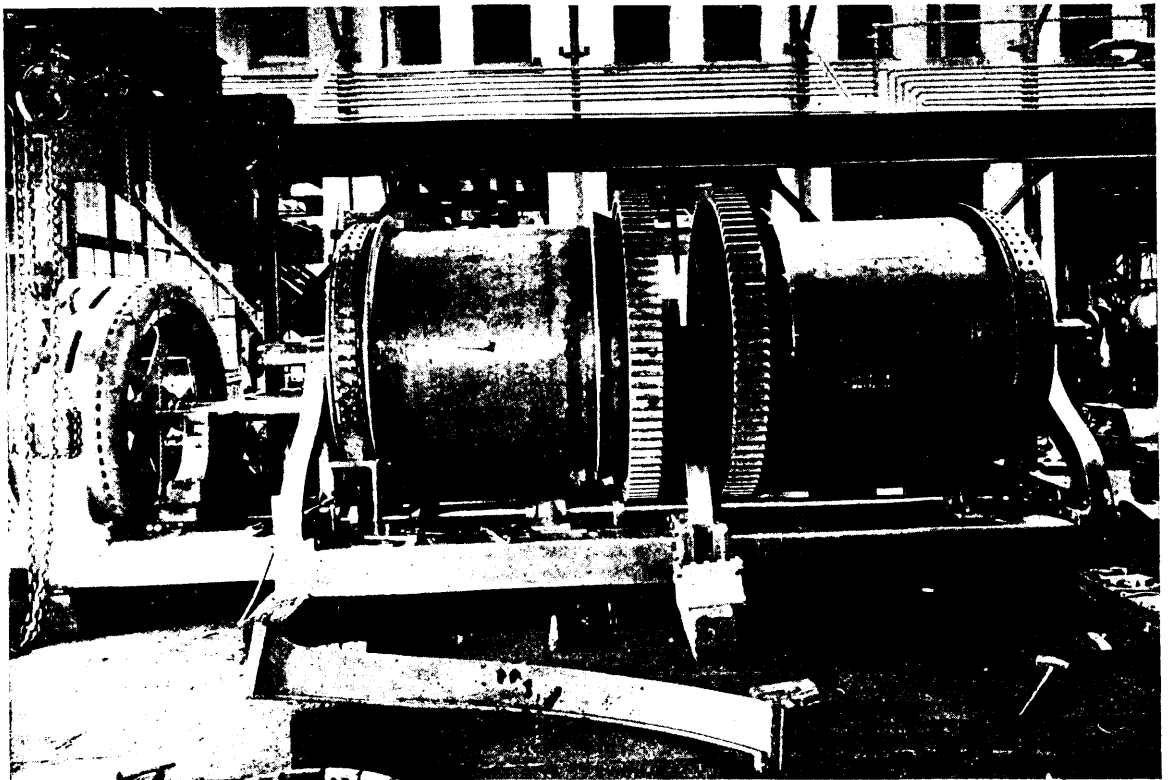
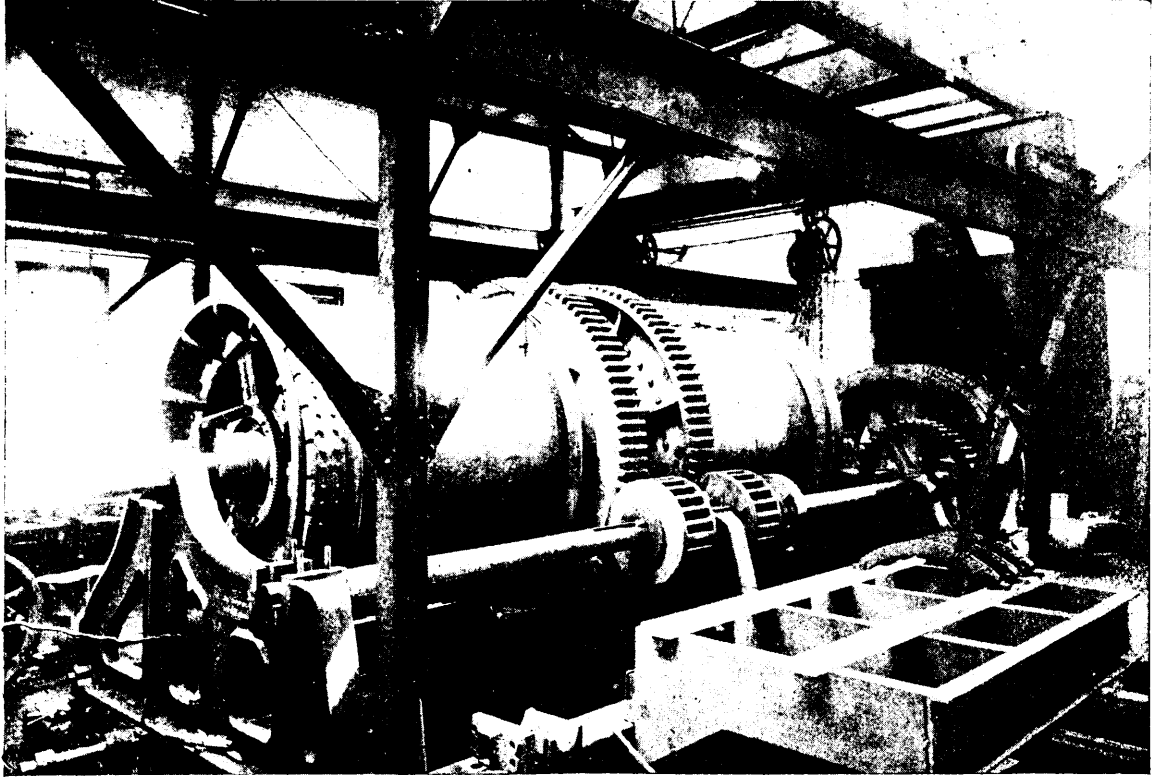
Mr. Hume was first returned to the Legislature in

1894, defeating Mr. G. O. Buchanan, the well-known mill-owner of Kaslo, who represented the party led by the late Hon. Theodore Davie. At the last general election Mr. Hume was again successful, defeating, by a narrow margin of votes, the Independent candidate Mr. Farwell, who is both highly respected and popular in the Nelson constituency. In Federal politics Mr. Hume is a staunch Liberal, but is by no means anxious to see Dominion party lines drawn in Provincial politics. As Minister of Mines, Mr. Hume is inclined towards the adoption of a progressive policy and will, it may be confidently stated, do his utmost to promote and safeguard the interests of the important industry entrusted to him.

THE WAR EAGLE'S NEW ELECTRIC HOISTING PLANT.

THE photographs produced on this page show the large electrically driven hoist built for the War Eagle Consolidated Mining and Development Co., of Rossland, were taken at the shops of the designers and manufacturers, the James Cooper Manufacturing Co., Ltd., Montreal, during the erection of

the machine. The hoist is remarkable in that it is the largest hoist ever built to be operated by electricity. It supplies the first link in a new era of power developed in the Kootenay District. The hoist is designed for a double compartment shaft 3,000 feet in depth, to lift a load of eight tons on a single line at an average speed of 750 feet per minute. One photograph shows the hoist from a front view, and the other the back view taking in the operating platform.



The drums are 72 inches in diameter, by 5 feet face, and are of the "Copper patent friction drum type." As shown in the photograph they are provided with enormous band brakes of the differential clutch type, which are operated from the platform by hand levers with latches working in a yoke with serrated teeth.

The motor is furnished by the Canadian General Electric Co., and is designed for alternating currents of 2,080 volts. The motor runs at a speed of 300 feet per minute, which is geared down to 160 revolutions per minute on the main driving shaft of the hoist proper, by means of cut steel gears and pinion. From the main driving shaft the gears are operated by pinions. The motor is reversible and acts in the same way as the link motion hoisting engine, a further provision being made for stopping the momentum by providing the motor shaft with a band friction wheel, which is operated from the platform by means of both a hand and foot lever.

As clearly shown in the illustration, the drums and motor rest on a heavy box girder bed frame, which underlays the whole machine and carries the side frames for the drums and shaft. As partially shown

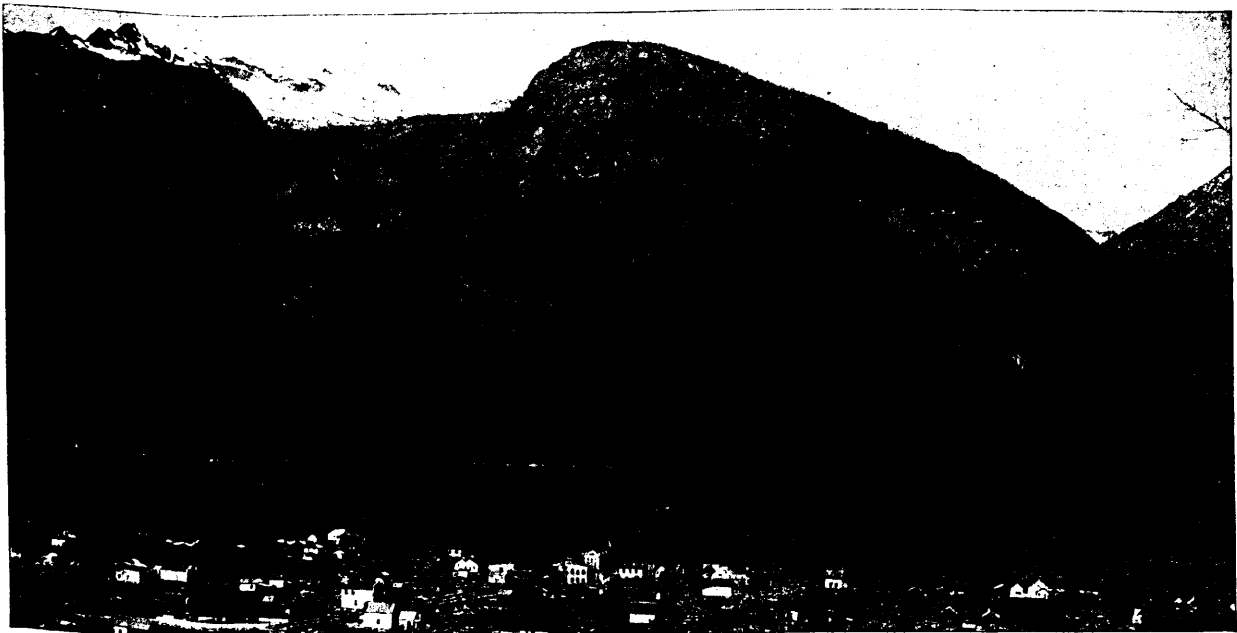
ing lowered; this arrangement becomes absolutely necessary in mining where work is progressing at a number of different levels. It is perhaps difficult to get a clear idea of the magnitude of the hoist from a photograph; some idea, however, may be formed of the size, when it is known that the drum shafts are 7 inches in diameter, the main driving shaft 6 inches in diameter, and the motor shaft 8 inches in diameter. The whole machine is of a very massive character, and calculated to stand the heaviest work. The hoist weighs, finished, including the electrical apparatus, about 120,000 pounds, or sixty net tons.

SOUTHERN BRITISH COLUMBIA.

BY J. D. KENDALL.

10. ORES AND ORE DEPOSITS—CONCLUDED FROM LAST MONTH.

THE majority of veins are intersected more or less by cross faults, the frictional striæ on the wall of which occur at various angles in relation to the dip



New Denver, B.C.—Looking Across Slocan Lake.

in the photograph the operating platform consists of a system of girders which carry the segments for operating levers. The platform is raised considerably higher than the base to give the operator a clear view of the whole machine. This platform also supports the controller for the motor, and directly in front of the operator is placed two indicators for locating the exact position of the cage in the shaft.

The whole arrangement is well studied out and arranged to be easily operated by the system of hand levers, as partly shown in the photographs.

Both drums are loose on the drum shaft and are entirely independent of each other in operation; they may be thrown in and out of gear while the hoist is in operation, either separately or together; or one drum may be lowering while the other is hoisting, or both drums may be thrown into gear and the hoist used as a regular reversible engine; one load being hoisted while the empty cage is be-

ing lowered, being sometimes parallel to it, at others nearly at right angles, and often at about 45 degrees thereto. Some of these faults have shifted the veins considerably and are a great source of trouble to the miner. Unless he has a good knowledge of stratigraphy these faults may, and often do, cause him to lose his vein altogether. More money has perhaps been wasted in British Columbia, and other mining countries, through inattention to these disturbances, than in any other way. Every mine almost of any extent, furnishes one or more examples of uncertain groping where a little study would have made the way perfectly clear. Last month was shown a longitudinal and cross section, of the Ruth mine, near Sandon, showing a reverse fault by which the vein was shifted 60 feet to one side. Several ordinary faults, occurring in the Cariboo mine, Camp McKinney, were also instanced. A good illustration of the amount of disturbance veins are sometimes subjected to, may

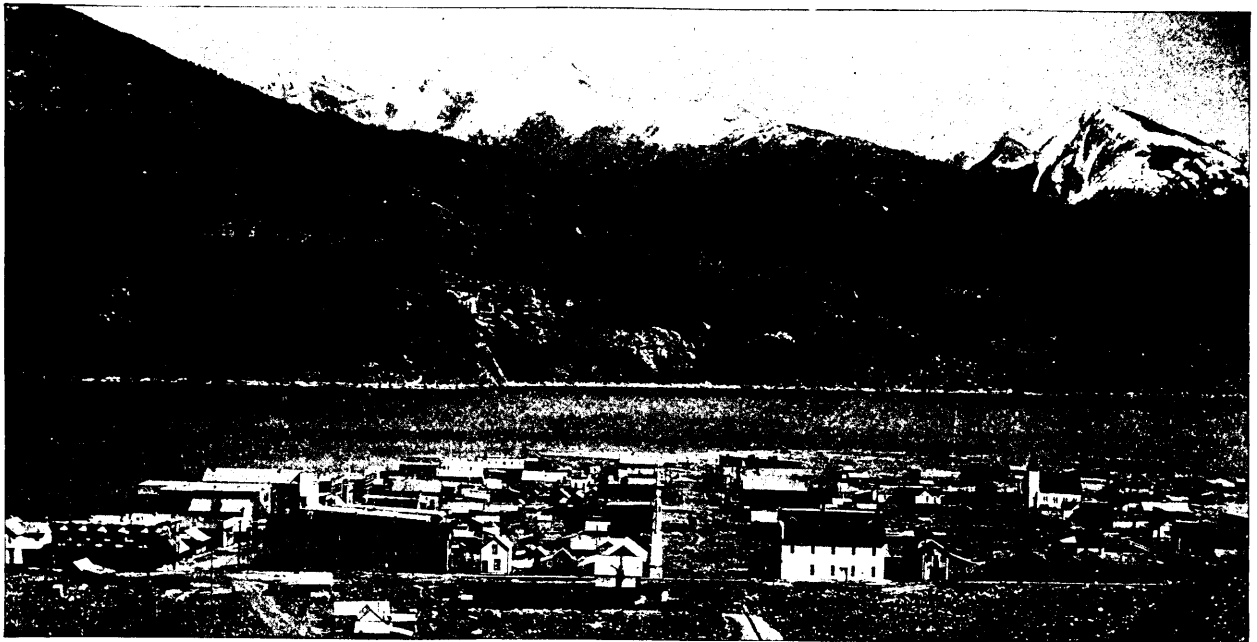
be seen on the Brown Bear mine, Fairview. Between the Stemminder and Morning Star mines a bedded vein of white quartz more or less mineralized, occurs in dark argillites and quartzites and can easily be followed on the surface for a distance of about a mile. In the course of this length, the vein is intersected by several faults. Two of these are close together, on the Brown Bear ground, and shift the vein for about one hundred yards to one side, notwithstanding that the strata (and therefore the vein) are tilted at angles ranging from sixty-five to eighty degrees with the horizon. It is important that the miner should recognize the possibility of such shifts as these so that he may be prepared to deal with them in the mine.

Numerous volcanic dykes intersect the strata in the neighbourhood of many of the veins. Some of them are of great breadth. They seem, so far as observed, to have existed prior to the latest movements of the faults along which the ore bodies have been largely deposited. In the Slocan these intrusive igneous rock where they adjoin the veins, are mixed up

The cost of drifting may be said to vary, according to the hardness of the rock, from \$4 to \$12 per lineal foot, for a drift of usual size and made under ordinary circumstances. No useful figure can be given of the cost of stopping, as it depends upon so many varying conditions, such as the hardness of the rock, the width of the pay-streak in relation to that of the ground which has to be taken down, the quantity of timber needed, and so forth.

II. PROCESSES OF ORE TREATMENT.

To the time of writing only two processes have been employed in connection with the treatment of British Columbia ores. These are smelting and amalgamation. Lixiviation has only been attempted in a small experimental way, but the erection of a cyanide plant is said to have been decided on at the Fern mine, near Nelson, to treat tailings and also for treatment of ore from the Dorothy Morton mine on Philip's Arm.



Kaslo, B.C.—Showing Distant Mountains.

sometimes, with the soft argillites forming the country rocks, in a very curious way. An instance of this kind is met with in the Alamo mine.

The economic soul of the miner might rebel, or many facts could be here introduced bearing on the genesis of the deposits. That subject, however, may be dealt with on some other occasion. Although the direct utility of such an enquiry, when measured by dollars, cannot, at present be pointed out; yet the search after truth for its own sake can surely never be repugnant to culture, no matter whether it be found in the mine, the field, the laboratory or elsewhere. Incidentally, such light may thereby, some day, be shed on the economic aspect of ore deposits as will enable the pure money-grubber to gather in the dollars with more certainty and much more rapidly. Who can tell? When Galvani was fooling—as some doubtless say at the time—with his plates and acids he could have little, if any, conception, and they less, of the present utility of the telegraph and telephone.

The ores that have been smelted are :

The Gold-copper ores of Rossland.

The pyrrhotite and pyrite ores of Rossland.

The copper-gold ores of Texada Island.

The silver-copper ores of Nelson.

The silver-lead ores of the Slocan, etc.

The concentrates of the milling ores have hitherto been smelted, a chlorination plant does not exist in the Province.

The amalgamating ores are:

The gold-bearing quartz of the Poorman and Fern, Nelson; Cariboo, Camp McKinney and O. K. mine, Rossland.

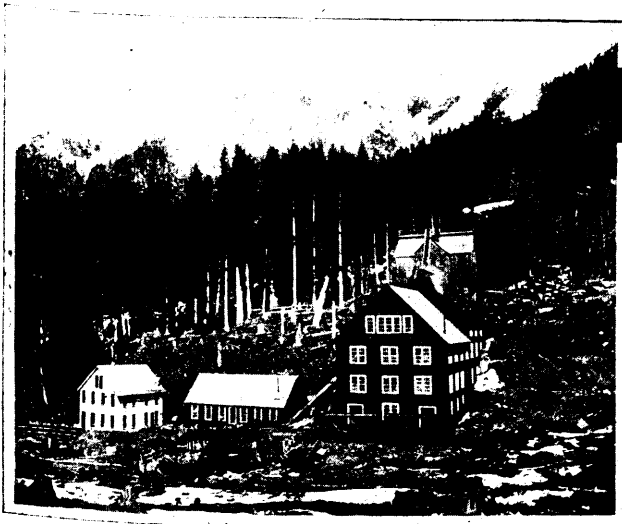
There are only two active smelters in British Columbia. These are at Nelson and Trail, both are principally employed in smelting gold or silver-bearing pyritous ores, the bulk of the silver-lead ores being shipped to U. S. A. smelters. The Hall smelter at Nelson was first fired in January 1896 and that of Trail in February of the same year. There is also a smel-

ter at Pilot Bay on Kootenay Lake, which was erected for lead smelting and blown in about March 1895, but was soon shut down on account of the prohibitive tariff on lead, when shipped into the U. S. A. Up to the present time that country has afforded the only market for British Columbia lead and lead ores. Efforts are being made to induce the Dominion Government to fix such a duty on lead and lead products coming into Canada, from the United States, that lead smelting in British Columbia may be afterwards profitable, but it is very doubtful whether the appeal will be successful. The consumption of lead, in all forms, in Canada, is not equal to the present output of the Slocan alone, so that if the desired extra duty were imposed an additional market would need to be found in China and Japan or elsewhere. A remedy for the present state of things is more likely to be found in a substantial reduction of the local smelting charges as well as in the freight rates on ore and base bullion.

The prices paid for the metals, other than gold, are fixed by New York quotations on the day of delivery or some later day as may be arranged.

All lead ores imported into the United States has to pay a duty of 1.5 cents per lb. of its lead contents and all lead bullion 2.5 cents per lb. of lead. As all silver-lead ore mined in British Columbia is sold to the States, as is also the lead bullion produced by British Columbia smelters, the above named duties have to be paid. But in some reports on British Columbia properties, accompanying prospectuses issued to the British public this important item of cost has been omitted from the estimates, although, in the case of ore containing sixty-five per cent. of lead, it would amount to \$19.50 per ton. In the same way the Provincial tax is frequently omitted. Surely there is sufficient risk in mining without increasing it by culpable negligence or something worse.

A large part of the Slocan silver-lead ore is simply hand sorted before being shipped to the smelter, but



Concentrator and Tramway at the Noble Five, near Sandon.

The U. S. A. smelter rates for treatment range from \$3 to \$9 per ton according to the nature of the ore and the needs of the smelter. The British Columbia rates for silver-lead ores are much higher. On the other hand the freight to the local smelters is less, but freight and treatment together equal the sum of those rates on deliveries to the nearer U. S. A. smelters, notwithstanding the very much longer haul to the latter.

The smelters pay for: Gold \$19 per ounce, when exceeding one-tenth of an ounce.

Ninety-five per cent of the silver. Ninety per cent. of the lead. Less than five per cent. not paid for.

For copper \$1 per unit first making a reduction of 1.3 per cent.

The zinc limit ranges from five to fifteen per cent., according to arrangement, fifty cents per unit being added to the smelting charge for every unit above the agreed limit.

a number of mines have mills for dressing purposes.

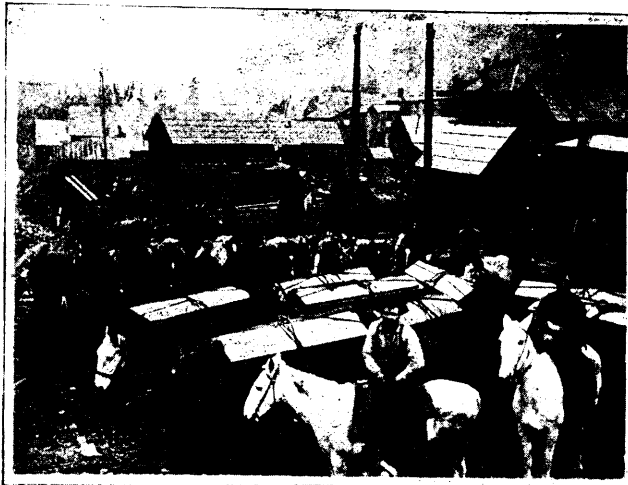
The date of erection and capacities of some of these mills, when working on ordinary ore, are given in the table below:

MINE.	Capacity for 24 hours. Tons.	Erected.
Alamo.....	100	1894
Pilot Bay.....	100	1895
Slocan Star.....	130	1895-6
Washington.....	50	1896
Noble Five.....	130	1897
Montezuma.....	100	1897

The gold-bearing quartz ores are reduced almost entirely by stamp mills. There is only one grinding mill—a Huntington—in operation, on these ores, in the Province. A list of the mills is given below :

MINE.	Stamps.	Erected.
Strathyre, Fairview.....	10	1892 (1st 5 stamps)
Poorman, Nelson.....	10	1892
Cariboo, Camp McKinney.....	10	1894
O.K., Rosslund.....	10	1896
Fern, Nelson.....	10	1897
Golden Cache, Lillooet.....	10	1897
Tin Horn, Fairview.....	16	1897
Fire Mountain, Harrison Lake..	1 Huntington Mill	1897

With 850 lb. stamps, the usual weight here, and thirty mesh screens, from 1.5 to two tons per stamp, of ordinary quartz can be put through these mills in twenty-four hours. They have all single discharge mortars except that at the Tin Horn mine. These are of Hendy's shallow triple discharge pattern and are capable of a much larger output, but of course



Packing in the Slocan.

they are only adapted to certain classes of ore. As a rule the character of the ore to be treated receives far too little consideration in the design either of amalgamation stamp mills or ore-dressing machinery. To obtain satisfactory results, the mineralogical character of all ore should be carefully determined before the particular method of concentration to be adopted is decided upon. All processes of ore treatment are processes of concentration. That being so the substitution by Americans of the word concentration for the European expression ore-dressing is not a gain in clearness.

The determination of the proper treatment of an ore should never be left to a machinery maker, unless it be known that he has had an opportunity of studying the ore to be treated and has a knowledge of that particular kind of work. It would, otherwise, be just as reasonable to leave the selection of the instruments necessary for carrying out a complicated surgical operation in the hands of a mechanic untrained in anatomy and who, in addition, knew nothing

of the particular case to be undertaken. The selection of a machine or process for effecting a particular purpose, is a very different matter from making the necessary machinery or carrying out the details of the process.

The bullion obtained from the free-milling ores is usually sent to one of the United States mints. The price paid for the gold is \$20.67 per oz. and for silver that of the New York quotations at the time of delivery. Small charges are made for melting, parting, refining and alloy.

12. FACILITIES FOR MINING.

Except in the matter of transportation, which is daily being improved, British Columbia as a mining country possesses almost all the advantages that could be wished. Mineral is abundant, much of it high grade and occurring in rocks that are easily worked. The mining laws are good and decidedly in favour of the miner. There is no royalty to pay. The cli-



mate is excellent. Timber is very cheap, and likely to be so for years to come.

Water power can be obtained almost anywhere at a cost which would compare favourably with that of installing steam power in any country, whilst the orographic features of the country are such that deposits can, in the great majority of cases, be rapidly opened up without recourse to shafts and the costly pumping and winding plant they usually necessitate. Wages are high it is true, but not higher than in similar situations in the States and they are likely to fall as improved transportation reduces the cost of living. The snow causes some delay in the early summer, when changing from runners to wheels on ordinary waggon roads, but as rope and rail haulage are introduced these delays will be avoided.

Can any country offer more inducements to the prospector, the miner, the speculator or the investor. The magnificent results obtained in the Slocan in so short a time, have been achieved with very little assistance from capitalists. Bone and muscle and dogged

determination have, in spite of the enormous difficulties that existed in the initial stages, done, by far, the greater part of it. What may not then be expected from a liberal and judicious expenditure of capital?

13. PRODUCERS, SHIPPERS AND DIVIDEND PAYERS.

In a country where new mines are being opened up almost every week and where the means of communication are still defective; it is not possible to present a complete list of producers. The following must therefore be looked upon as only partially complete.

Among the shippers of silver-lead ore, the following mines may be named: Payne, Ruth, Whitewater, Idaho, Slocan Star, Dusky Jim, Last Chance, Queen Bess, Montezuma, Reco, Antoine, Silver Cup, Vancouver, Comstock, Silver Bell, Good Enough, Dardanelles, Enterprise, and North Star.

A number of other mines are producing more or less, but not shipping, mainly for lack of transportation facilities.

Shippers of the gold-pyritous ore of Rosslund include:

Le Roi, War Eagle, Poorman, Josie, Iron Mask, Columbia-Kootenay, etc.

The silver-copper ores are worked (and shipped) by the Silver King mine only.

Among the gold-bearing

Many of the mines in this category are held by close corporations, so that it is not possible to make public the amounts returned to their owners. This much however may be said, that some of the best paying mines in the Slocan are in this class. Following is a list of some of the dividend payers and the amounts paid to date. This information was given to the public by the owners so that there is no breach of confidence in producing it here:



Barkerville, B. C.



Concentrator—Lanark Mine, Illecillewaet.

quartzmines that have shipped bullion are: Cariboo, Nelson-Poorman, Fern and Strathyre, at the Golden Cache. Fire Mountain, and Tin Horn mines, mills have been erected but the mines are not yet sufficiently developed to keep the mills running regularly.

In speaking of dividend payers there is a difficulty.

MINE.	Dividends Paid.
Le Roi (Gold-copper).....	\$825,000
War Eagle " (to time of transfer).....	187,500
Slocan Star (Silver-lead).....	400,000
Reco ".....	287,500
Idaho ".....	264,000
Whitewater ".....	194,000
Rambler-Cariboo ".....	40,000
Cariboo (Gold-quartz).....	204,565

The names of mines that have paid less than \$40,000 are omitted.

14. MINERAL STATISTICS.

The output of precious metals commenced in British Columbia with the Fraser River excitement in 1858. For a number of years the produce came exclusively from alluvial deposits, but as a notice of these deposits has been purposely omitted from this communication it is unnecessary to include their output. The following figures are copied from the report of the Minister of Mines for 1897 and may be considered sufficiently accurate for practical purposes. The return of copper therein begins in 1894 but 74,800 lbs. of that metal were obtained from the Silver King mine prior to 1893, when the present owners took possession. Seven hundred tons of

copper ore is also said to have been shipped from Rossland in 1893 and ten tons in 1891. The returns relate exclusively to vein mines:

YEAR.	Gold ozs.	Silver ozs.	Lead lbs.	Copper—Lbs.
1887.....		17,690		
1888.....		79,780		
1889.....		53,192		
1890.....		70,427	113,000	
1891.....		4,500	588,655	
1892.....		77,160	1,768,420	Slocan comm'ing to ship
1893.....	1,170	227,000	2,135,023	
1894.....	6,252	746,379	5,662,523	324,680, Rossland
1895.....	39,264	1,496,522	16,475,464	952,840, Commencing
1896.....	62,259	3,135,343	24,199,977	3,818,556 to ship
1897.....	106,141	5,472,971	38,841,135	5,325,182

Judging from the results so far, the output of the present year will be considerably in excess of that for 1897, in each of the metals.

The above table needs no comment. It speaks for itself, and shows in a most striking manner how rapidly British Columbia is coming into prominence as a mineral producing country.



Chinese Placer Mining—Rock Creek, Yale.

15. OUTLOOK FOR THE FUTURE.

What the future may have in store for the mining industry of British Columbia no one can say, but certainly the prospect is exceedingly bright now. The people of the country seem to have passed through the stage of company development and to have settled down to that of mine-development. The former being essentially of a fictitious character could not possibly "fool all the people all the time." The absurdity of the once popular British Columbia stock company, in which a few individuals get most of the shares for nothing and the many get a few shares for providing the small and inadequate working capital, seems to have been discovered at last. In time too it will be realised, in England, that every claim offered, in that country may not even be a prospect, much less a mine. To anyone having the well-being of the Province at heart it is disgusting to read the attempts sometimes made by chairmen of English companies to talk prodigious values into properties that have scarcely been scratched with the pick and about the real value of which no

man living can possibly know anything, that will justify such statements. The mines of British Columbia do not need that kind of support. They will support themselves if properly treated. That is to say, if they are not weighted down by over capitalization and are judiciously opened up and honestly worked afterwards.

Doubtless it is as unsafe now to prophesy as it has been at all times, up till now—but anyone acquainted with the silver-lead deposits of the world can have little hesitation in saying that the Slocan and adjacent country has in it potentialities which will, at no distant day, place it well towards the front, if not in the first position, as a producer of high-grade silver-lead ore.

With the lower smelting rates which must come with cheaper fuel, that has been introduced by the completion, in the past few weeks, of the Crow's Nest Pass Railway a great increase in the output of the gold-bearing pyritous ores of Rossland must take place. The coal mines are opened up and shipments have commenced, the quality of coal is good, the quantity enormous. A further increase in the output of smelting ores will take

place when railway communication is extended to the Boundary district—a matter now of a very few months' waiting—and the ores of that district become available. The Crow's Nest Pass Railway will open up the important district of East Kootenay in which there are already several well developed mines that will be able to commence shipping as soon as this railway is opened.

The free-milling gold ores have a wide distribution but very little has yet been done towards opening them up, for the simple and sufficient reason that such ores cannot be worked without mills. These cost money and hitherto there has been a great lack of that commodity among the miners of British Columbia. The silver-lead ores of the Slocan, carrying high values from the grass roots and much of it requiring only hand sorting, could be worked by men who had little more capital than was in their muscles, notwithstanding the difficulties of transportation, but free milling gold ores, which are of much lower value, they could not handle for want of machinery. And that is why these ores have been comparatively neglected. But attention has at last been turned to

them and in 1897 the milling capacity of the Province was doubled. In the present year doubtless still greater strides will be made.

British Columbia being the latest developed mineral field to appeal to speculators and investors, it will doubtless have its progress, more or less, retarded by the distrust awakened through the reckless wildcatting in some other countries, but its day of recognition as an important mineral area is rapidly drawing near and nothing is needed but reduced freight and smelting charges and the introduction of capital, honestly and intelligently expended, to make it one of the greatest producers of mineral wealth in the world-wide Empire of Great Britain.

A PROBABLE SOURCE OF ALLUVIAL GOLD.

(BY W. F. B., VICTORIA.)

THE generally accepted theory as to the occurrence of Alluvial Gold is, that it has been derived from the denudation and disintegration of gold mining quartz lodes.

While it is undoubtedly true that alluvial gold has in many instances been derived from gold bearing quartz in the manner mentioned, yet there are good reasons for the belief that in certain instances alluvial gold, especially when in large masses and nuggets, has quite a different source.

It is a fact well known to chemists that chloride of gold in solution will deposit metallic gold where the solution is brought in contact with iron pyrites. From a series of careful experiments it has been proved that the reduction of the gold is due to the direct action of the sulphide, and that each grain of pyrites will reduce 12.25 grains of gold to the metallic state from the chloride solution.

Now, in the waters which existed on the earth's surface in early geological times there were undoubtedly various salts of the precious metals in solution, traces being even now found in sea water and also in the water of various mineral springs. Among these salts may be mentioned the chloride zoxide bromide and sulphide. When waters strongly impregnated with these salts flowed along depressions and corrugations on the earth's surface we can imagine that grains and even masses of iron pyrites might be met with.

A gradual decomposition would take place, re-

sulting in the formation of masses of gold, the size of which would depend upon the conditions existing at a particular locality for uninterrupted chemical action.

Metallic gold thus deposited would be attached to the mass of pyrites, and gradually filaments and spangles would be produced till the entire mass of pyrites had been decomposed, as the action had been arrested by some change of conditions.

Experiments prove that a mass of pyrites weighing ten pounds will reduce to the metallic state from gold chloride a mass of the precious metal weighing about 150 pounds.

It is evident from this that in a region where iron pyrites already existed in depressions and waterways, through which streams flowed which were strongly impregnated with chloride of gold—a deposition of metallic gold would take place resulting in the formation of nuggets and masses.



The "Lime Dyke"—Hall Creek, Trout Lake District.

ROCK DRILLING.

By J. N. S. Williams, Victoria.

AS soon as a mining country gets beyond the prospect stage, and its mineral producing possibilities have been sufficiently evidenced, mechanical drills may be advantageously introduced in tunneling or sinking operations, as being distinctly more economical, both of time and labour, than the antiquated method of drilling by hand. This is

especially true of British Columbia, where white labour is scarce. Of course no mine owner would employ Asiatic labour in this sort of work except as a last resort, because it is a well known fact that such labour is not economical, and its employment is against the best interests of the mining community. Miners in a district or country which is just emerging from what for the sake of description may be likened to the "larva" state of prospects, into the "chrysalis" stage of developed claims, and before it arrives at the "butterfly" condition of capitalised and working mines, do not usually have much money to expend in machinery, and what money that is available has to be spread over large areas, and spent in the most economical way if favourable results are to be expected.

A recognition of the foregoing facts has stimulated invention, and there are numbers of mechanical rock drills, more or less perfect, now before the mining public. These are classed as hand machines and

power machines, the latter driven usually by compressed air, and sometimes by steam. The power drill requires a considerable expenditure for its installation, and the operative expenses are comparatively heavy. It is, therefore, the machine usually adopted in fully developed working mines. The hand machine, on the contrary, is inexpensive, it can be operated at a small cost, and its use is chiefly confined to the development of claims, in the running of prospecting cross-cuts, or in sinking of shallow shafts for proving the continuity of ledges, or ore bodies to a certain depth. It is unnecessary to state that the hand machine cannot compete with the power drill in daily accomplishment of work, but in cost per yard of excavation, or per foot of tunnel or shaft, the hand drill will, taking into consideration capital invested, running expenses and work performed, compare favourably with many of the power plants now being operated in this country.

The requirements of a hand mechanical rock drill that shall be financially satisfactory to its purchasers, are as follows:

1. Few and heavy working parts, of best material.
2. Ease and rapidity in setting up and getting to work.
3. Strength and durability with few and easily replaced wearing parts.
4. Simplicity, so that it can be handled by one man, and the mechanism understood by all.
5. Perfect

locking of the bar, so that a true and round hole can be drilled with a single edge bit.

6. Self-adjustable feed, in accordance with hardness of rock.

7. Rapidly adjustable variation in the blow struck, so that varying rock can be equally attacked.

8. It must be able to drill any hole that the miner can by hand, and be quickly adjusted to do so.

The work accomplished by the hand machine, as compared with ordinary hand drilling, and power drilling, is about as follows:

Two men with jumper bar and hammer can advance in a 6x4 ft. tunnel, in average rock, at the rate of about 12 inches per day of ten hours. They require electric blaster, and one man to sharpen drills, set shots and clean out. One man with a good hand machine can advance in same tunnel at the rate of 1½ feet per 10 hours, and will need one man to sharpen drills and clean out and help, so that the comparison is as follows:

Hand Drilling, 1 ft. per day.

1 man at \$3.50 per day.....	\$ 3.50
2 men at \$3.00 " ".....	6.00
Sharpening drills, wear of steel, coal, etc., per day—say.....	50
Cost of tunnel per foot.....	\$10.00

Hand Machine Work, 1½ ft. per day.

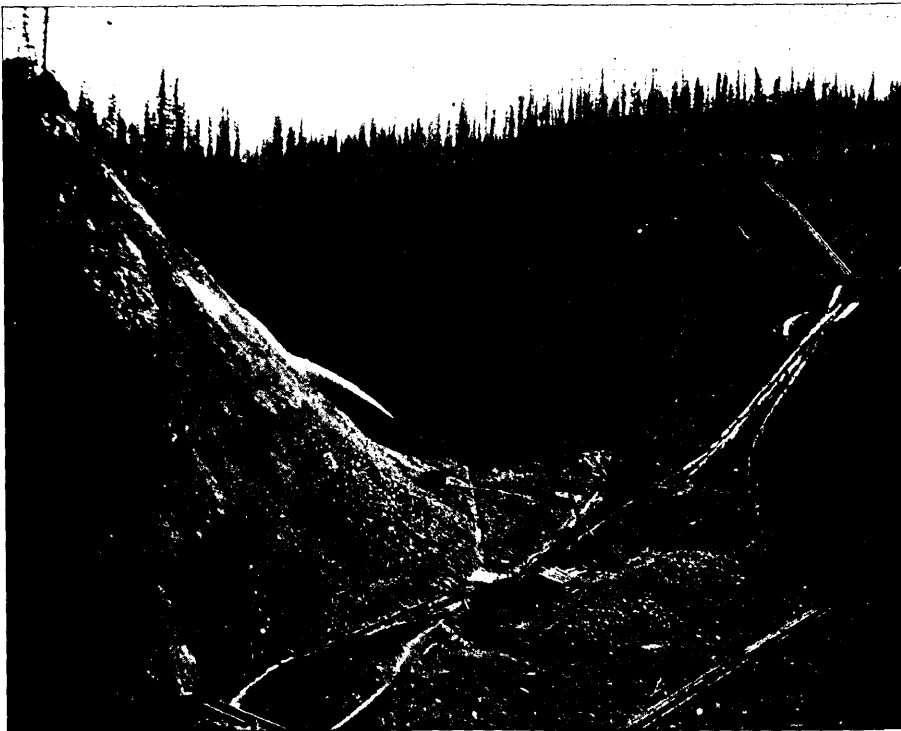
1 man at \$3.50 per day.....	\$ 3.50
1 man at \$3.00 " ".....	3.00
Sharpening drills, wear of steel, coal, etc., per day—say.....	50
Allowances for wear and tear of machine, say.....	2.50
1½ feet per day.....	9.50
Cost of foot of tunnel, \$6.33.....	

Power Machine Work, 5 ft. per day.

1 driller at \$5.00 per day.....	\$ 5.00
2 helpers at \$3.00 per day.....	6.00
Wear and tear on drills, coal, etc., for sharpening—say.....	75
Wear and tear on machine, say.....	2.50
Proportion of cost of investment, engineer for compressor, coal, etc., for boiler, etc., say.....	10.00
5 feet per day.....	24.25
Cost per foot of tunnel, \$4.85.....	

The foregoing figures are approximate, and cost will necessarily vary with the hardness of rock, distance from business centres, cost of labour and fuel, and length of tunnel or depth of shaft, but the proportionate cost between hand and machine work will remain unaltered, whatever the actual cost of the work done.

Respecting the power machine work it is a self-



First Bench, Advancing Along Channel—Cariboo Hydraulic Mining Company.

evident proposition that the more drills there are running on a single compressor, the less the cost of the power per drill; this, again, is to a certain extent offset by the increased length in air main, and consequent loss of power by friction and leakage, while with the hand machine, each being a complete plant in itself, the cost of work done remains constant, regardless of the number of machines employed, and it can be easily seen that in some cases this may be looked upon as an advantage.

The hand machine has also its own peculiar advantage in that it can be transported easily from place to place, which is not, of course the case in a power plant, and it is its convenience and its cheapness that should recommend the hand machine to prospectors in this new and comparatively unexplored country.

WHERE IS IT?*

A STORY FOUNDED ON FACT, BY "WANDERER."

WHEN I say that the affair I am about to relate only happened within the last fifteen years, I shall most likely be laughed at. Yet I am speaking the truth, and there is one man in the City of Victoria to-day who could, if he would, vouch for the accuracy of the latter part of my story. Yet it is not likely that he will speak, for he is rich and I am poor, and those who put their fingers into the Devil's purse seldom care to state the source or amount of their earnings, neither, indeed, should I, who am no scholar and little inclined to rush into print, have written this matter which will presently lie before you, had it not been that I have been requested to do so for the sake of an innocent man; innocent at least in this matter, whatever his faults may have been, by sea and land, in

Well, as I was saying, I was in Vancouver, and a jolly little town she seemed to me, after the long weary months at—well, that doesn't matter. I stopped at a fairly good hotel, and the first night I went to bed pretty early, for I was tired with the trip, and, though the cut in my shoulder was nearly healed, it bothered me now and then. As to the man that put it there, he is down and out of it long ago. We left him lying under the big pines, with the moonlight on his white face. I guess the wolves settled his funeral expenses. But there, that won't interest you.

Well, I felt better the next night. Vancouver was a pretty lively town then, and every second man you met was a real estate agent. Money seemed to be flowing like water; and yet it was a little dull for a quiet stranger like me, with no acquaintance to speak of. So after supper I went out to the bar and



No. 10 Creek Claim—Eldorado Creek, Yukon.

concerns of which I have no knowledge. For he of whom I now speak has been accused by men now living, but whom I believe to have gone to the northern gold diggings, of having deliberately led to death seven honest men who had confidence in his ability and integrity. This accusation I know to be false.

In the spring of 188— (the exact year is neither here nor there) I was in the City of Vancouver, on the Mainland of the Province of British Columbia. I was fairly well-to-do at the time, having done well in my last venture, the nature of which concerns nobody; the more especially as it was, as those confounded warrants say "against the Statute of Our Sovereign Lady the Queen, in such case made and provided." Amen; but a hard-working man must occasionally shave our good Queen's statutes pretty close in a new country like this.

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got talking with the bartender. The night was fine outside and very few folks were round. Well, I set up the drinks and he set up the drinks, and we got to talking about the queer things most men see after knocking round this "vale of tears," as the gospel-sharps call it, for thirty-five or forty years. At last the bartender said: "There's a chap who was spinning a yarn the other night, when he was a bit full, about some rock he knows of somewhere north of Vancouver Island, where you can pick the gold out with a penknife."

He pointed to a man sitting in a chair some way down the bar-room. I looked over at the fellow carelessly enough, for no man then thought that the rock on the Coast was worth much, except where the coal formations lay. However, it struck me I would like to hear the yarn, so I said, "Will you take a drink with us, stranger?"

The man turned in his chair and looked at us, and then got up and came to the bar. He was a big man ; not so very tall, but deep in the chest and big boned. But it was his face that caught my eye. A low, broad forehead, heavy eyebrows over eyes that held yours as a magnet will hold iron, a rather hooked nose and heavy mustache, and a square-set jaw that would tell you that the man was either angel or devil, but not likely to be half-way between as most men are.

The bartender said to him, "This is Mr. William Forrest, Captain Maitland." He smiled (and a pleasant smile he had, too, when he liked), and we shook hands. We finished our glasses and then I said, "Captain Maitland, Jim here tells me that you know of some good gold-bearing rock on this Coast." "Yes," he said, "I do."

"I didn't think the rock up the Coast was worth anything," I said.

pumped me as to all I knew about mining (which was more than a bit), about the coast-line of the northern islands (which was not very much), and about my own occupation and future plans. I was a bit vexed with myself for talking so freely with an entire stranger, but after all, I thought, no great harm had been done. In this, however, I was wrong.

The next morning I asked the clerk for Captain Maitland, and was told he had gone up the Mainland on business. I left for Victoria two days later, and forgot all about the occurrence.

One fine evening in the following August, I was strolling along Government street, when someone clapped me on the shoulder. I turned, and there stood the Captain. You will laugh at me, but for the moment I just shivered. It was like our old women's superstition in the Old Country about someone walking over your grave. Yet the Captain was pleasant



Looking Up Eldorado Valley, Yukon.

"No," he said, "most people don't, because they never took the trouble to go and find out for themselves. But it is worth something, at least in one place."

He didn't say anything more as to where it was, nor did he spin any yarn about it, but started talking about mines he had known of, mines that had been lost for years, mines that had been stumbled on by lucky accident, and mines that men had gone to seek for who had never come back. He was a most entertaining speaker, and I knew enough of mining to see that he had had a pretty wide experience.

It was maybe two hours before we separated. He went off to bed, and I went out on the verandah to smoke a pipe before turning in. It was not till then that it struck me that the captain had really said nothing whatever about himself, while he had pretty well

enough.

"You are just the man I was looking for," he said, "Can you step down to my hotel for half an hour? I have a proposition to make to you."

We went down to the hotel, and upstairs to Captain Maitland's room. He rang for whiskey and cigars, and we settled ourselves for a comfortable chat.

"When I met you last April," he said, "I gathered from what you told me that you had had considerable experience in mining, and knew something of seafaring too. Can you navigate?"

"Not much," I answered.

"Well," he said, after a minute's thought, "that's not so much an object. I have made a few enquiries about you, and I think, if we can come to terms, that

I can put you in the way of a job, one that will pay you well. What do you say?"

"What kind of a job?" I asked cautiously. I have been in many kinds of jobs in my life, but I never like to put out my hand further than I can draw it back.

"Gold," he answered briefly, never taking those eyes of his from mine. "Enough to make you rich for life, man. I want some man on whom I can rely, and I have been told of your part in that business at _____," and with that he mention a certain matter that I had never thought would be known beyond two or three.

"What are your terms," I asked, neither admitting nor denying his statement that I had been in the affair at _____.

"One-third of what we get and all found."

"How do you go?"

"By boat.

I have a small schooner and a crew of six men."

"Are you going to take any trading stuff?" I asked.

"Yes. I must make enough to pay expenses, even, if we don't find the gold. But we must get it," he went on, rising from his chair and pacing up and down the room. "The stuff is there; I have seen it in the little ravine. I will bring the Indian what he has asked for; but I mistrust the beggar."

Well, I can give you no reason why I hesitated over the job. It looked like nothing more than an ordinary trading and prospecting trip, such as I have made by the score in my time. And it was not anything about the Captain, either. In spite of certain peculiarities in his manner, I liked the man, and will maintain to this day that he was acting in this matter in a straightforward manner according to his lights. No, it was some sort of what you may call a presentiment of evil, something telling me that no good would come of the expedition. But I laughed down the feeling, and cursed myself for a fool, wondering if I had lost my nerve.

"I'll take your offer," I said to Captain Maitland, at last.

"Good," he answered, and three days from that we were bowling north with a fair wind.

The weather was fair enough when we started, and I had time to look about me and size up the crew. They were much such a lot as any careful seafaring man can pick up in most of the Coast towns. The mate was a Scandinavian, I guess by his name, Axel Petersen. The rest of the crew were a hardy lot; English and Canadians.

Now, I don't know very much of this Coast going north, but we had passed Cape Scott and were nearing the Queen Charlotte Islands. Here Captain Maitland bore away a little to the westward. On the third day about noon, we sighted a small group of islands. The Queen Charlotte coast could just be made out to the east.

The Captain and I and the mate took our meals together in the Captain's cabin. That cabin was the only peculiar thing about the vessel, which differed in no other respects from an ordinary trading

schooner. Round the walls, and clamped both to floor and side, were strong iron-bound lockers, and on one end was a gun-rack holding about a dozen Winchester rifles. A chart or two, which the Captain never appeared to use, and a full-length portrait in oils of a young and very handsome woman, were the only other ornaments.

On this day, the 1st of September (the last day all

in that vessel were to see, except myself) the Captain seemed a little restless. After the midday meal he went on deck, took a long look through his glass at the islands we had sighted, and then went to the helm.

We tacked and tacked all that sunny fall afternoon, always nearing the little group of islands, until just nightfall. Then Maitland left the wheel, and called me down to his cabin.

"Our game is on one of these islands, Forrest," he said. "The old Indian fellow, a chief he seems among them, will signal me at dark. We shall then go in, the water is deep enough for a man of war close to shore. I want you to get the six barrels of whiskey and five of the big cases on to the deck forward at once. I will go on shore in one of their canoes with three of our men; and you and the mate and the other two will watch us from the vessel. As soon as I hail you, you will lower the goods into our boat and pull



Looking Down Hall Creek, From Near the Wagner Group—Trout Lake District.

on shore to me with the two men, leaving the mate in charge. We shall take our rifles, and you will come armed also."

"Is that all?" I asked.

"Yes," he answered. "I do not anticipate any treachery, but it is as well to be prepared."

"Is the chief to get only the goods and whiskey on deck?"

"No, those he is to receive first, and the balance when we get the gold on board."

"Does he know that the rest of the stuff is on board?" "Yes; why?"

"Well, Captain Maitland, I think I should watch him pretty closely. He may feel like taking all and paying nothing."

"Nonsense, Forrest; we are too well armed a party. Besides, I shall have my eye on the old rogue. You are getting nervous before you see the gold, man. Take a pull at this," and he took a bottle out of one of the lockers.

"Wait till you see the gold, my friend; then you will feel nervous."

I took a drink, but I did not feel easy in my mind. However, all I could do was to obey orders. We went on deck. The vessel was nearing the island now, and it was almost dark. Maitland took the wheel again.

Suddenly, a little on our right, a light shone out from one of the islands. I was standing by the Captain and I heard him give a gasp of relief. "The dog has kept faith so far," he muttered.

In half an hour we were entering a small bay, with fairly high rocks at each side, as far as I could make out in the darkness. At the far end was a small beach of sand and shingle, on which the fire was burning. Several figures I made out standing around it, and a canoe was just putting out to meet us.

We dropped anchor within about fifty yards of the beach, and the depth was enough to make a man open his eyes. The canoe reached us almost at the same moment, and Maitland and three of the crew got into her, carrying their rifles. Maitland said something to the Indians paddling, and then turning to me, said: "Keep a good look-out on us, Forrest, and bring the goods when I wave my hand."

"All right, Captain," I said. The two siwashes in the canoe had meanwhile been watching the whiskey

casks on the deck with eyes that glittered with eager anticipation. A man could bet his pile it was not their first sight or taste either of "skookum water."

I leaned against the rail and watched the canoe to shore. As it touched the shingle a man, whom even by that light I could see was a very tall chap for an Indian, came forward to meet the Captain. They began talking together, the big man constantly pointing to the rocks behind him, and seeming to be urging something on the Captain, which the latter refused. I should judge they palavered there for twenty minutes.

While they talked, it seemed to strike me all of a sudden that there were more men round the fire than when we anchored. As I looked, I saw, half in the dark, half in the fire-light, a canoe glide out past us and down the bay. Then came another and yet another.

I went over to the mate, Axel Petersen, and told him of what I had seen. But he only laughed in his big yellow beard, and shook his broad shoulders.

"You vas mooch mistake, Mr. Forrest, if you dink dese peoples mean us dirt. I tells you we are too mooch large party. I know dis country, and I know my beesiness."

Well, there was nothing more to be said, and I went back to the side and watched Maitland and the chief talking. Presently the Captain turned to-

wards us, and lifted his hand and hailed.

I got the goods over the side at once, and climbed into the small boat with the other two of the crew. As we pushed off, I spoke to the mate, who stood on the deck watching us.

"For God's sake, Mr. Petersen, get your revolver and a couple of rifles on deck, and keep a good look-out."

My earnestness seemed slightly to move even that sluggish northern intellect.

"I will do as you say, Mr. Forrest," he answered, "but I see not wherefore. Is it that Mr. Forrest, who not know dese seas so good as I, is of somethings afraid?"

The thinly veiled sneer stung me to the quick, but there was no time for argument.

"I am afraid," I answered, briefly and roughly, "very damnably afraid. Do as I tell you, and I will answer for it to Captain Maitland when he comes back."



Japanese Blasting in Cariboo.

He growled something, and went below. We pulled for the beach. As we approached it, I noticed more clearly than before the number of natives round us. Instead of the three or four I had expected to see, there must have been over a dozen, perhaps twenty, round the fire. And I thought with a sinking heart of the canoes I had seen flit past us in the dark.

The Captain met me at the beach, and the tall native came with him. We put the goods ashore, and Maitland and the chief stood a little apart from us, and talked. Our crew gathered together close to me, and I could hear them exchanging opinions. More than one seemed to think that we stood in more than a little danger, but no one cared to question the Captain.

Suddenly the discussion between the Captain and the tall chief seemed to become angry. In another moment the chief had turned, and was walking back towards a little knot of his men, who were gathered in front of the

fire. Maitland turned to speak to us, but what he said was lost in a sudden, irregular volley which was poured into our crowd. The man standing nearest me sank forward without a sound, and from the oaths and groans from the others I knew that more than one of our party was hard hit.

Maitland was equal to the occasion. "Drop here behind these boulders," he roared, standing up fearlessly in the full glare of the firelight. "Drop, I tell ye, and give these devils a shot or two."

We lost no time in obeying him, you can believe. Along the beach were scattered several big chunks of barnacle-covered rock, and heavy pieces of wood. Behind these we lay and fired back at the treacherous hounds. And right here I want to say that there was no lack of pluck among the crew. Placed against heavy odds as they were, more than half of them wounded, yet there was no whining and no white feather shown. I say this in justice to the white men who died that night.

Our first volley sent the dogs back out of range of the firelight, leaving some half dozen of their number kicking and writhing on the beach like new-caught salmon. In the brief pause that followed we had time to look at the schooner. The mate, startled by the rifle-shots, had sprung to the rail, just as a couple of canoes came alongside. He had evidently obliged me

and brought up a rifle or two, for a stream of fire into the nearest canoe was the first intimation its occupants had that their prey might not be easily caught. Petersen was no bad shot, and the first canoe drifted astern of the schooner. But the occupants of the other canoe were already scrambling on board, and the affair only lasted a minute after that. For a moment or so we saw the figure of the big northman striking right and left with his clubbed rifle at the half-score of copper-colored devils around him, then a little undersized native, brandishing a long knife, ran in under his guard, and Axel Petersen had gone to the Valballa of his forefathers.

All this happened in less than five minutes. The natives were coming back now, to right and left of the fire, which made it hard shooting. Maitland, with a careless contempt of danger, which even then I could not but admire, strolled down the line of boulders with a word or two to encourage the men. As he

came to me he paused, and, as I am a sinful man, struck a match and started to light his pipe. He had hardly drawn two puffs when a bullet smashed the pipe from his mouth. He only laughed. "That's a message from the chief," he said. "Lend me your revolver, Forrest, till I return the compliment. I've dropped mine."

Sure enough there stood the long siwash in front of the fire, his



Hydraulic Mining.

rifle still smoking in his hand.

I handed Maitland one of my revolvers, and he wheeled like a flash, firing straight at the chief, who tossed up his arms and dropped into the glowing embers on the edge of the fire.

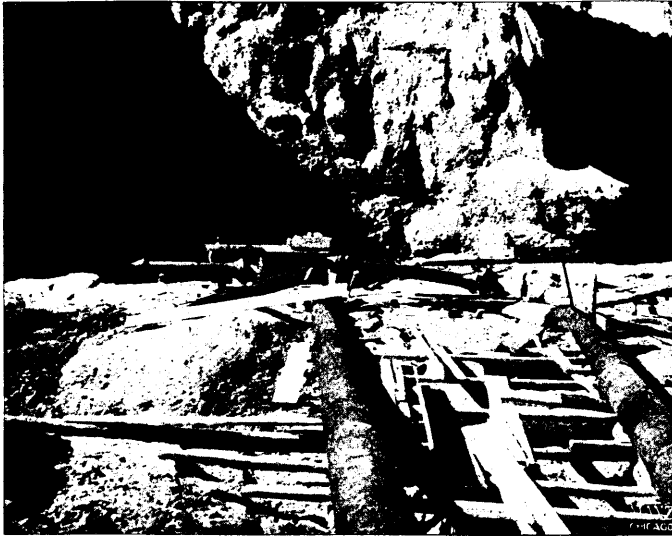
Half a dozen of his followers hauled him out of that, two of them falling under our fire during the operation. Then the Captain shouted out suddenly, "Look out, boys, here they come."

And they did come. For a few minutes it was shoot and stab and hack for your life in that half-light. Then a big native brought the butt of a "King George" gun down on my head, and put me to sleep.

When I got back my senses, I was lying bound, not in front of the fire, but just at the entrance of a big cleft in the rocky cliff back of the beach. I tried to get up, but found that I was trussed like a fowl. Two or three natives came forward, picked me up and stood me on my feet. I looked round. The cleft

might be forty or fifty feet deep into the rock, which looked to me, as well as I could make out, like a sort of slate, with queer shining lines running through it, which glittered dully in the light of the fire now behind us. Then I saw the Captain, standing a few yards away from me, bound the same as I was.

"Well, Forrest, old man," he said, as calmly as if he had been in the cabin of the schooner, "here is the



Cemented Gravel, Cariboo.

gold we came for, but I am afraid we shan't take it back with us."

"Gold?" I said, dully. "Where?" I was still a bit dazed with the blow I had got.

"In front of you, man," he said. "Don't you see those lines and streaks shining in the rock? There is enough there to make our fortunes, but I am afraid we shall never see old Victoria again." (True for him that was, poor fellow.)

"Where are the boys?" I asked.

"Dead," he said shortly. "Died in their boots, every man Jack of them. And I'm thinking, Forrest, it would be better for you and me if we had gone the same way. I am sorry I brought you into this."

"That's all right, Captain Maitland," I answered, "I am not whining. What are we going to be done with?"

Before he could reply, a man came through the Indians round us, and stood and looked at us. I stared, for it was the old chief. His hair, which was nearly white, was all singed and burnt on the back and one side of his head, and his right arm and shoulder were all swaddled up in pieces of dirty, blood-stained blanket.

"Well, Captain Maitland," he said, in as good English as I ever heard between here and old London, "you fell into the trap neatly. I had hardly expected to catch so old a bird as yourself with a handful of chaff. Don't you remember me?"

For the first time that night, and the last, I saw the Captain's face turn ashy pale. But, whatever his faults might be, he was no coward, and recovered himself in a second.

"You!" he said. "You! you blackguard and traitorous scoundrel."

The chief's face was whiter than Maitland's before the latter had finished.

For all answer he snatched a knife from his belt, and deliberately slashed the Captain across the forehead with it.

The senseless cruelty and cowardice of the action fairly maddered me. Yelling out an oath, I made a spring at the brute's throat; but the ropes round my ankles had been well fastened, and I tumbled in a heap at his feet.

He looked at me. "On my word, Maitland," he said, "you appear to have a most enthusiastic coadjutor here. What position does he occupy in this little deal of yours? Personal friend or hired man? And what is he grovelling here at my feet for? Saying his prayers, perhaps. He'll need them before I have done with the pair of you. Get up there," he added, fetching me a kick in the ribs that I thought would have staved them in, "Get on your feet and let me hear what you have to say."

A couple of the natives, understanding rather his gestures than his words, lifted me on my feet, and you bet I let them know what I had to say. I do not want to set down in print the tenor of my remarks, but when I say that I have been both a teamster and a cowboy on the Northwestern prairies of Canada and the United States, and have attended as a witness on a commission in the Dominion House at Ottawa for two sessions, you will believe I was capable of expressing myself emphatically.

Well, he listened to my flow of eloquence without a word, and then spoke to Maitland as



Horsefly Mine, Cariboo.

if I had not been there:

"I have you now," he said, and no words of mine can convey the mingling of bitter hate and cruel triumph in his voice while he spoke. "You shall die a distinguished death, and your confederate here shall watch you die before his time comes."

He said something to the natives and they dragged us into the mouth of the rocky cliff and chucked us down there while they held a confab with the chief.

The Captain spoke as soon as we were alone: "Feel behind you quickly, Forrest, as you are bound that way. The rock is soft and you can perhaps pull off a piece or two with your fingers, to shew in Victoria if you get away. I have no chance, but he may spare you."

My hands were not so tightly bound but what I could use them a little; and so, feeling here and there behind me, I managed to get a few pieces of the rocky wall behind us. It came away easily, like the rotten shale I have seen on cliffs on the west coast of Vancouver Island, and I managed to slip some of it into the hip pocket of my overalls.

The chief came back just then. He spoke to a few of his men who accompanied him, and they raised Maitland and carried him back to the far end of the cleft. There a couple of men were building a sort of platform of loose rocks round what looked like the stump of a steel mast from some wrecked vessel.

Presently they had finished, and going back out to the beach brought in a quantity of dry driftwood. As they went out I looked after them. The little schooner was all in a blaze, and on the shore were a good score of natives making merry with the contents of the liquor casks. As I looked a spurt of flame from the side of her shrivelled up the hawser like pack-thread, and the schooner, swinging round with the now ebbing tide, drifted blazing down the little bay.

Well, the men came back as I said, with the driftwood piled on their shoulders; and back they went again to the beach, and back again, always arranging the wood on the rocky platform they had built round the steel mast-stump. Then they picked the Captain up and bound him to that piece of iron; bound him with bits of iron wire cable and strips of wetted hide, so that he might not move.

And then, with a sudden chill of horror, I understood the manner of death Captain Maitland was to die, and the manner of death that waited my coming. And the terror of it fetched the cold sweat out on my forehead, so that it gathered there and then trickled down into my eyes, where it stung and smarted most damnably, and yet I could not lift a hand because of my bonds, to wipe it away.

For a while I could not see; and then a gust of wind swept in from the bay and my eyes got clear again. I saw the Captain standing there bound. The

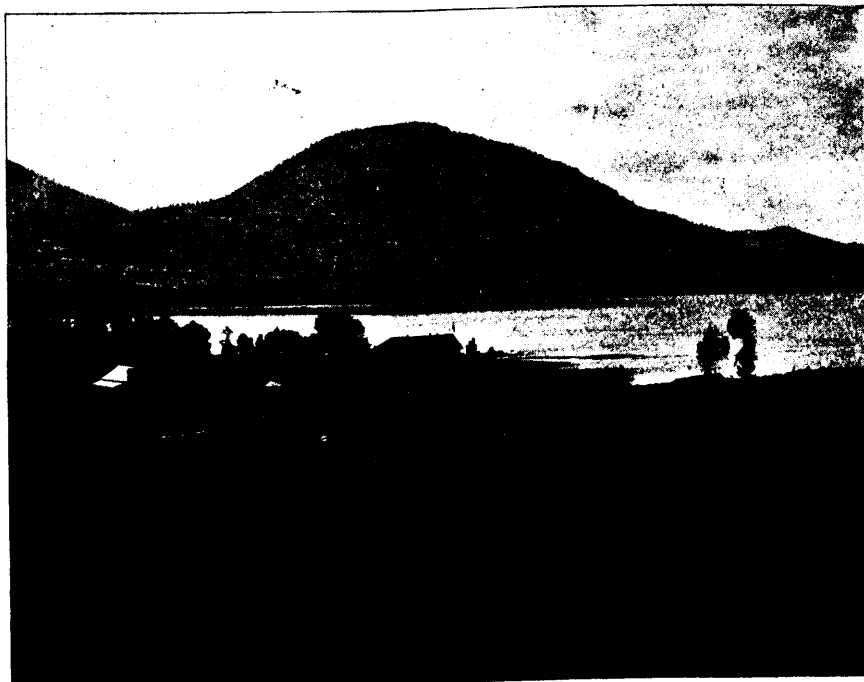
fire was even now crackling up around his feet in little spurts of bluish flame, as wood long sodden in seawater always burns when dry; and it flickered higher and burned more fiercely now; and the devil who stood by the platform pointed to the fire with one hand and with the other to the gold-seams in the rocky wall. His words I could not hear, but the brutal devilish mockery of his meaning was plain enough.

The Captain never flinched. He looked across the thin smoke-wreaths and caught my eye. "It is all my own fault, Forrest, he called out, his voice ringing clear over the snap and crackle of the salt-soaked timber—"my own fault, but forgive me for leading you and those poor lads yonder into this."

Even now my eyes smart and tingle when I think of it. The brave English heart, with an agonizing death at hand, that could still beat in pity for those who suffered for his error.

My own danger was forgotten. "May God pity and help you, Captain," I called back, a choking in my throat that I had not felt since I was a boy.

"The island is in latitude —," he started to call out; then the chief struck him over the mouth with a rifle butt. The fire was burning up fiercely, now, but no sign or word, no groan or cry for mercy, came from Maitland. Once I saw him try, with his bound



Penticton, B.C.

hands, to lift himself higher up the mast from the cruel flames, then his head sank forward on his breast. I hope—I pray God—that he did not suffer long after that.

The natives were crowding in now from the beach where the liquor casks lay. Some jeered at me, some struck me, but I could not turn my eyes from that dreadful Thing in the fire. The chief was still watching; every now and then looking back over his shoulder at my white face and staring eyes. Once or twice he smiled at me. It was a smile to haunt a man to his dying day.

I still kept my eyes fixed on the Captain, and suddenly it seemed to me that he moved. A murmur of terror among the natives showed that others had noticed it too. Then the right arm slowly rose to nearly the height of his breast, pointing straight at the renegade. The latter never moved, and I think it was only the careless indifference of his attitude that kept his superstitious followers from bolting

through sheer panic at a phenomenon simply caused by the hide that bound the arm having been burnt through, and the action of the fire on the muscles.

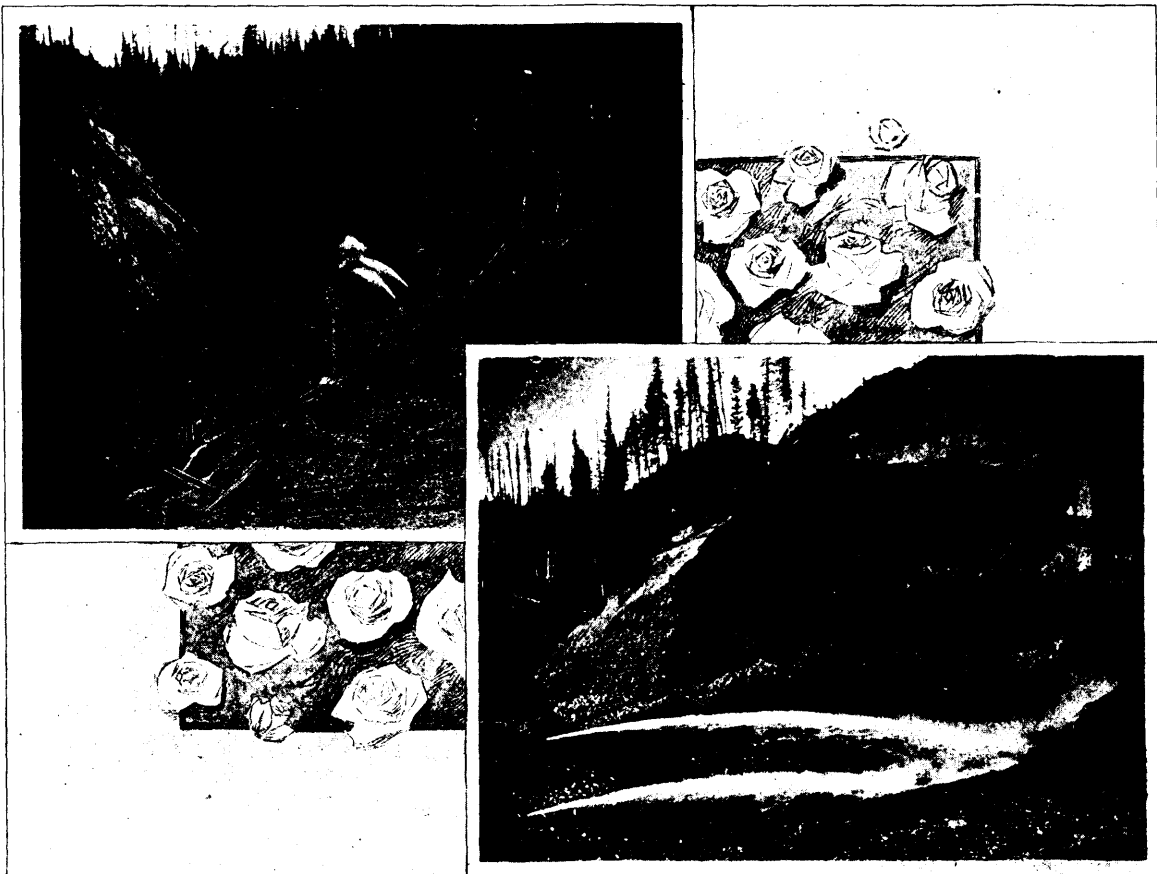
Presently the chief turned and came towards me.

"You will doubtless have some curiosity as to the cause of what you have seen, and why I have selected for your Captain so excessively unpleasant a method of shuffling off this mortal coil. Is it not so?"

I could not answer him. The terror of what I had just seen seemed to have frozen my faculties; while in addition a deep and awful hatred against this fiend half suffocated me as I gazed on the renegade's dark face. Then suddenly I became aware of the fact that my right arm was loose. Some chafing against the rocks, or maybe my frantic straining against my bonds had loosed the strips of hide that bound me. But I kept my hand where it was, and the chief, after

not pleasant to see. There was the unmistakable sign of insanity in his eyes. He seemed to have forgotten me for a moment. On my part, my eye had caught sight of a revolver hung in its sheath to his belt. If I could reach that I might at least avenge poor Maitland, and give myself an easier death than his fiery trial.

"When I had served my time," went on the madman, for such I could no longer doubt him to be, I left England, but I laid my plans and I had my agents to keep me informed of Maitland's whereabouts. I heard that his wife had died, and I was sorry, because my revenge could not then be quite complete; but I still bided my time, and at last he has made me amends. A chance discovery on my part, some years ago, of the gold you see here, enabled me to trap him, as I did without arousing his suspicions. And now—"



Hydraulicizing in Cariboo.

waiting for an answer, appeared to take my silence for consent, and went on with his tale.

"I am a half-breed as you can see, but my father was an educated man and an Englishman, and he sent me, strange to say, back to England to be educated too. At the English school I met Maitland. I liked him well enough then, and when later on we met again in London, on his return from a voyage to China, an almost close intimacy sprang up between us, till one day a woman I had asked to marry me, a woman I had long—well, that doesn't matter to you—told me she had given her heart to him. I swore to her that Maitland should not have her, but he did, because I made a bad job of it; my knife did not get quite home, and I got five years in Portland jail. He married the woman, though."

The man paused and the look on his dark face was

But those words were his last. In his excitement over his wrongs, in his gloating over the ruin of two lives, he had approached close to me. I swung my right arm from behind my back, snatched the revolver from his belt, and fired full in his face. Through the flame and smoke I saw for a second of time the livid, powder-blackened visage; then he fell with a crash at my feet, and half my work was done.

But I was not permitted to complete it. As I turned the muzzle of the pistol towards myself, it was knocked from my hand and I was again securely pinioned.

Flung on the floor, I expected nothing less than immediate death. But with the untimely decease of their leader came a spirit of dissension into the councils of the tribe. I did not understand their lovely lingo, but, as far as I could make out, one side desired

to kill me at once, while the other wished some delay at least. Finally an arrangement mutually satisfactory to both parties appeared to be arrived at. Picking me up they loosed my bonds and marched me down to the beach. Then one of them took a look at the sky. The day was dark and lowering and a cold wind from the north was already getting up in a fashion that promised half a gale before mid-day. In the dim morning light I could make out the bodies of our poor lads. The natives had apparently carried away their dead.

Presently the man who was studying the weather turned and said something to the crowd. I was at once led a little further down the beach to where several canoes were hauled up. A smallish one was launched, a paddle was handed to me, and I was told by signs to get in and paddle. Then two other canoes were launched and several men, all armed, got into them, leaving me alone in my little craft. The leader made signs to me to start, and raised his rifle threateningly. I went to work at once, expecting a bullet between my shoulder-blades every minute. But no, the other two canoes paddled, one on each side of me, their crews mocking the clumsy way in which I handled my own paddle. Out into the open sea we went, and for three or four hours pressed on. Every time I attempted to stop the devil of a native would raise his rifle to me. But I had had too heavy a drain on my strength, and the last thing I remember is falling on my face in the bottom of the canoe.

When I came to myself I was in a hospital in Seattle. I had been picked up, they told me, by a sailing vessel, somewhere near the mouth of Puget Sound, six weeks before. I was raving crazy when they found me (little wonder, too) and had been delirious ever since.

There is little more to tell. I told my story to the hospital doctor, but he only laughed at me. When I was able to get up they brought me my clothes, and in the pocket of my overalls I found the pieces of rock I had got on that awful night. I showed them to an assayer, who was wild to know whence they came, but I kept my own counsel.

Well, I have tried three times since then to locate that cursed island, but without success. Someone else may find it for I am getting old now and do not feel like another experience. Besides, I have money enough to live on. But the gray slaty rock with the

gold seams in it is there all right, waiting for some one luckier than poor Maitland and myself.

A PROMISING FIELD FOR INVESTMENT.

IN the neighbourhood of two years ago, when some of the first exciting finds of gold were made on the Salmon River, in the Nelson District, the little town of Salmo sprang into notice, and was at that time a scene of bustling activity. Carpenters were kept busy day and night knocking up structures to do duty as stores, hotels, etc., to accommodate the demands of the host of prospectors pouring into the place. As it happened, however, the time of permanence for Salmo was not yet, as the town of Ymir sprung, mushroom-like, into existence, a little further north, and for the time being attracted the prospector population to its immediate neighbourhood. Thus, while Salmo is to-day in a state of comparative quiescence, the important discoveries adjacent are once again drawing the attention of shrewd folk to the wonderfully rich mineral deposits in its vicinity. A pleasant ride along the picturesque mountain stream, yclept Sheep Creek, for about ten miles, brings one to the scene of the principal activity of the district, viz., the properties of the Salmo Consolidated Gold Mining & Developing Co. Here are situated a group of properties which, on careful development, are proving a source of unqualified satisfaction to the stockholders. While the development is as yet very limited, consisting as it does of two shafts and a tunnel,



The First Location—Salmo Consolidated.

No. 2 shaft being now sunk to a depth of a little over 100 feet, with a drift run in on the lode a distance of 50 feet, this shaft constituting the main workings—the results having demonstrated the existence of immense permanent ore bodies, with paying values, that must eventually reap a very rich harvest for those interested. The main lode is traceable on the surface for over three-quarters of a mile, with a varying width of from 12 to 40 feet, and is intersected by five other distinct leads. The Company is financially strong, and, with the installation of the new hoisting plant which is now on its way, the management feel fully confident of being able to bring very handsome returns to the stockholders in such time as speedy development, consistent with careful exploitation of their properties, will permit.

The success that has attended the efforts of the Salmo Consolidated Co. has had the natural sequence of attracting capital towards this neighbourhood, resulting in the recent purchase, for a sum bordering on \$50,000, of the Yellowstone group ostensibly by Mr. Meikle, although sundry whispers somehow persist in connecting the War Eagle folk with this purchase. Be that as it may, ample funds for development are certainly forthcoming, as a large force of men are at work opening up the property by means of three tunnels; and if report speaks truly the results are eminently satisfactory. The Salmo Consolidated management have lately sent up to the mine \$2,000 worth of provisions, with the object in view of keeping up work throughout the winter months without cessation, and their example



At the Mouth of No. 2—Salmo Consolidated.

has been followed in like manner by those in charge of the Yellowstone. Here also are situated a number of properties more or less developed, such as the Galena Lady, Annie Rooney—this last has a considerable amount of good work done—and, indeed, many others, all indicating the fact that there is a field here for capital, which when fully recognised will certainly cause what might be termed a "Sheep Creek boom." The entire distance from Salmo, along Sheep Creek, presents scenery typical of British Columbia; and the vast tract of splendid timber, averaging three feet in diameter, conjures up visions of unlimited wealth in the way of timber limits. The "irrepressible" kodak field might here find such views as could not but impress those across the sea of the vast possibilities of British Columbia.



The Bunk House—Salmo Consolidated.

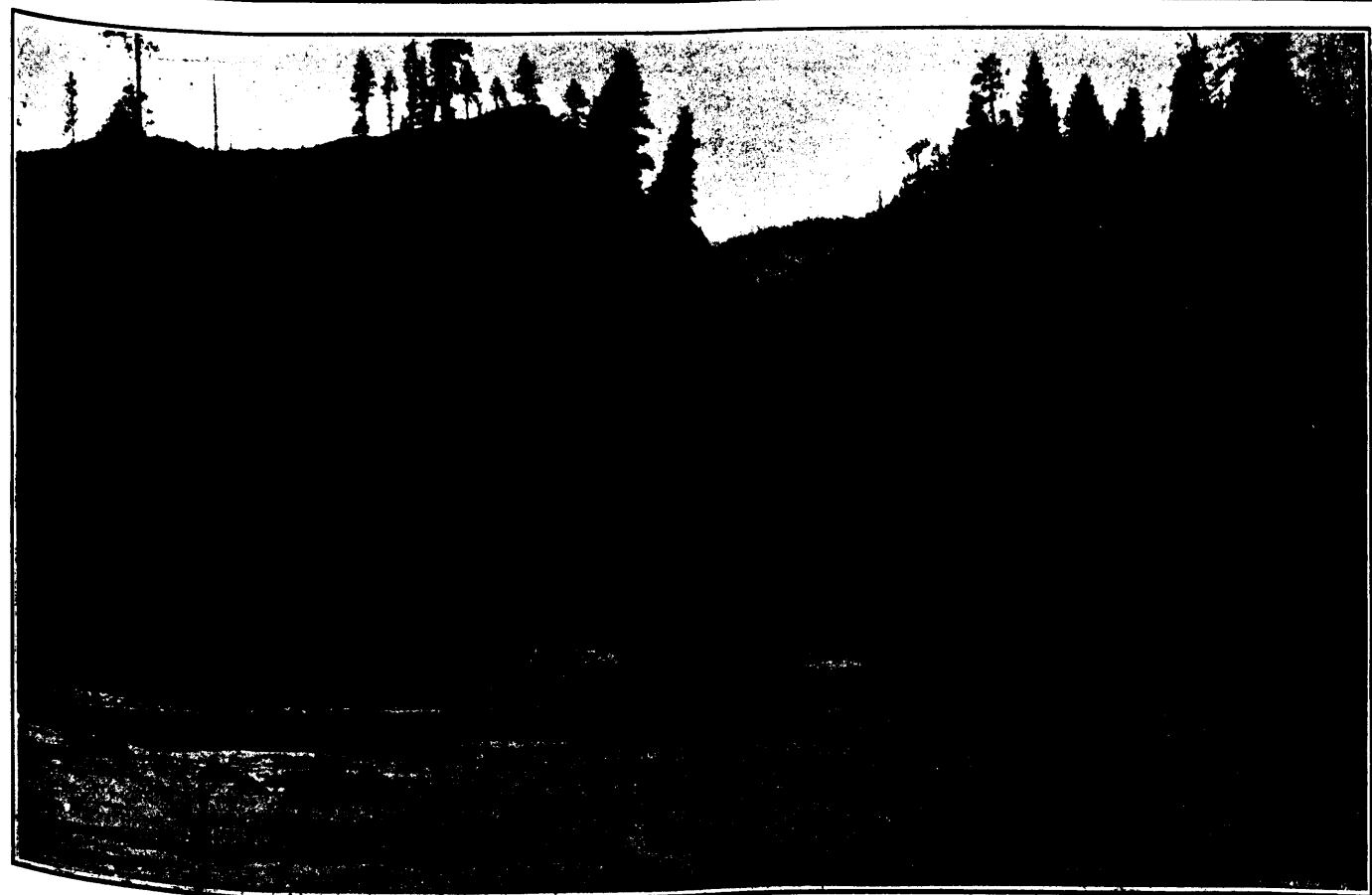
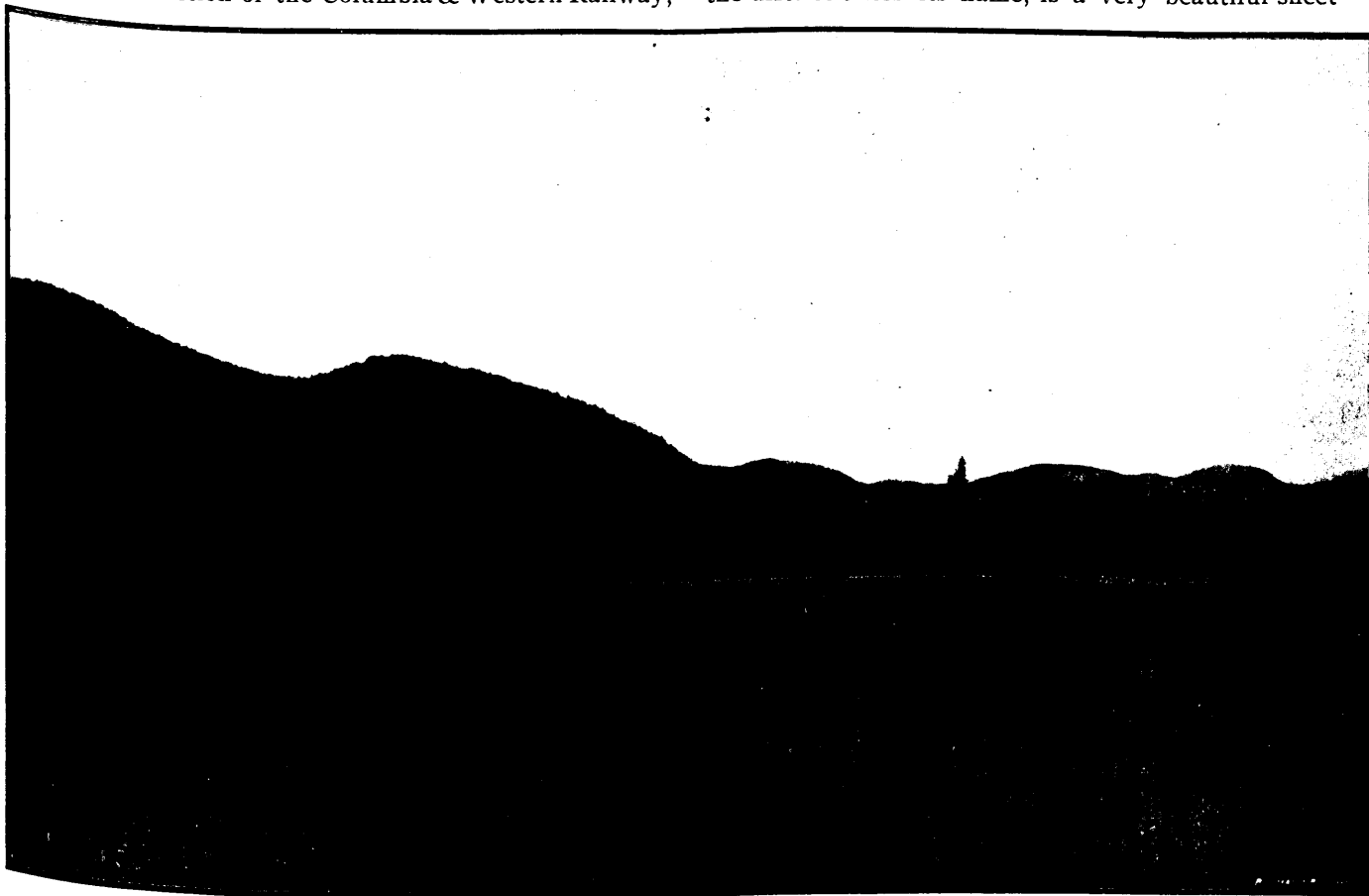


A Day's Clean Up—Salmo Consolidated.

THE CHRISTINA LAKE DISTRICT.

THE Christina Lake district, which has lately attracted a good deal of attention as the result of the construction of the Columbia & Western Railway,

lies between the Trail Creek and Boundary Creek mineral belts, and is situated to the extreme east of the Kettle River watershed. The lake from which the district takes its name, is a very beautiful sheet



1. Christina Lake.

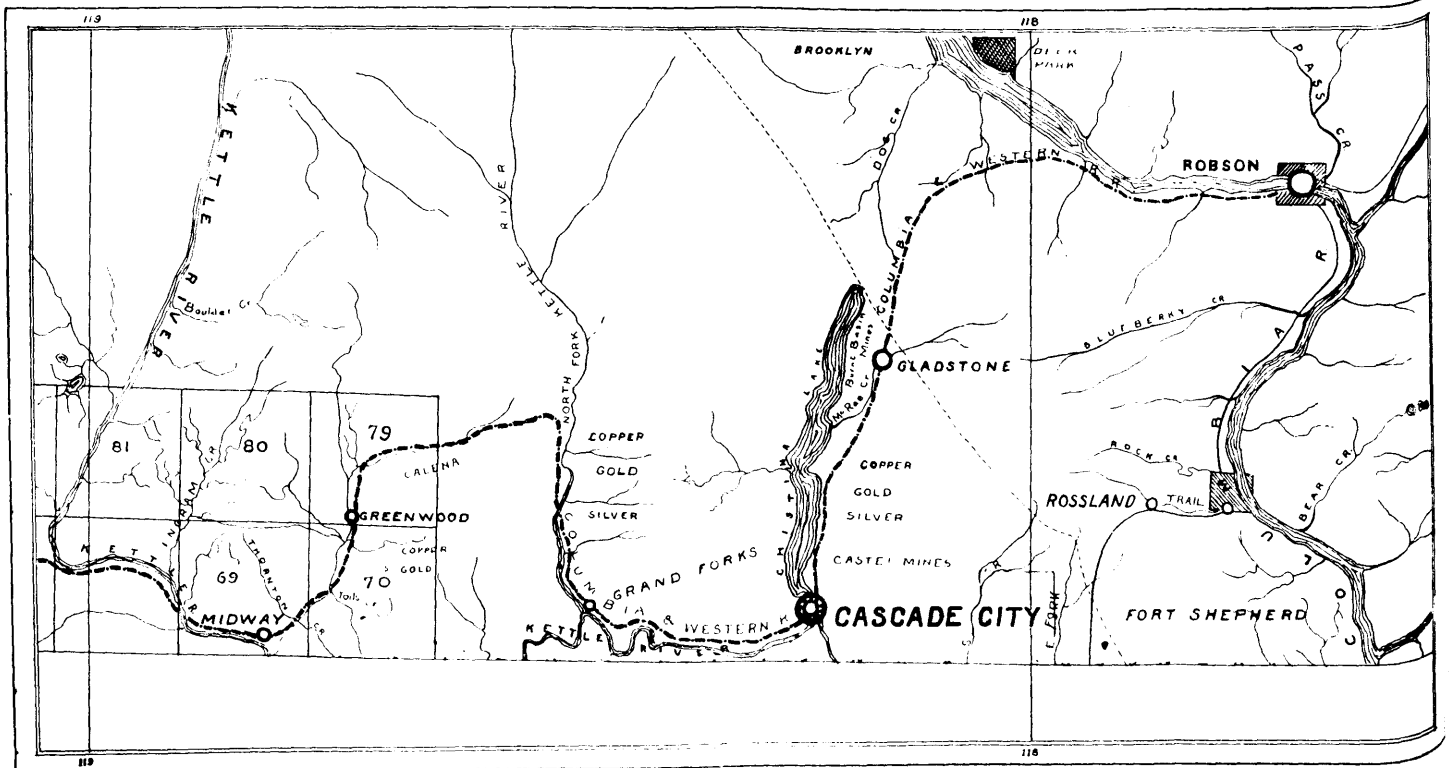
2. The Kettle River, at the Foot of the Falls.

of water, about seventeen miles long and varying in width from one to two and one-half miles. Two years ago only some half a dozen pre-emptors and prospectors had permanently located on the lake, but now a very different state of affairs exists. The principal town of the district, Cascade City, has literally "sprung up" within the past twelve months, and become a very flourishing and growing place of at least five

hundred inhabitants. It lies about one and one-half miles south of the lake, the same distance from the international boundary line, and at the junction of Christina Creek (the outlet of the lake) with the Kettle River. At this point the Kettle River forms a series of cascades, falling one hundred and twenty-six feet in about a quarter of a mile, and furnishing a really magnificent water power. The latter has re-



On the Lake Shore



cently been bought by English capital, and there is every reason for believing that it will shortly be utilized. The Canadian Pacific Railway has acquired a one-third interest in the town site, and in a large tract of surrounding land. The contractors for the Columbia & Western Railway are also making Cascade their headquarters for construction work on the west of the McRae Creek Pass. A customs' office is located there, Cascade being on the main route of travel from the States into the Boundary country. Altogether Cascade may be described as one of the coming towns of Southern Yale, and a place which will always be prominent in the geography of the Province.

At the south end of the lake two new and adjoining town sites have been laid off—Minton and Christina City. They are very prettily situated, but so far have not got beyond the one hotel and one store stage. No other towns have so far been started on the lake, but ten miles to the east, up the McRae Creek Pass, the new town of Gladstone has a promising future as a railway and mining centre, but its importance of course will depend upon the successful development of the mines in the immediate vicinity. Here again (as all along the route of the line), the C.P.R. has acquired property rights.

The mineral resources of the Christina Lake district appear to be very considerable. The surface showings on Baker Creek, situated some four and one-half miles from the south of the lake and on the east side, being particularly promising.

The country along Baker, known as Shamrock Mountain, has been staked back for miles from the lake.

Shamrock Mountain is a veritable mass of iron, and so far is a puzzle which the many now interested there are trying hard to solve. Solid mineral has been found on the surface, on nearly every claim so far prospected, and the leads are well defined and strong, but surface assays are low, averaging from \$3 to \$18, although there have been some notable exceptions. Should work show up better paystreaks, this camp will have a great future. Up in the Burnt Basin assays from \$25 to \$75 are by no means uncommon, hence the greater rush up McRae Creek at the present time. Among the best known and developed Baker Creek claims, are the Elmore, Shamrock, Beach, Yellowstone, Alphonse, Highland Express, Rose, Red Hill, Nancy Hawks and Cannon Ball, but there are many others which, as far as the surface indications go, may be equally meritorious. A lot of development work is now being carried on in this camp at the present time, and its reputation will probably be

settled for good or bad before next year. Of Castle Mountain, near the foot of the lake, little can be said, except that the principal claims there were carefully examined last season by Mr. Inkster, the well-known expert. He issued a favourable report, and seventeen claims are now owned by the British American Corporation. At the present time sufficient work is being done to obtain crown grants for the whole group, and owners of adjacent property are waiting to see with what result. Some very fair showings have been lately found on Sutherland Creek (south of Baker Creek), also on the west shore, and north end of the lake. These may be the subject of a later article.

The most talked of portion of the district, however, is that known as the Burnt Basin, although there are excellent surface showings and plenty of virgin ground to prospect all the way up McRae Creek, and also up Texas Creek, which flows parallel a few miles further north. The Burnt Basin proper includes the territory between McRae and Texas Creeks, beginning at the mouth of Dog Creek, and extends several miles in a north-easterly direction. The mineral here differs from that of Rosland and also from other portions of the Christina district, inasmuch as the heavy iron cap is not in such strong evidence, and the work so far accomplished shows considerable galena as well as copper. The leads in the main hold a north-easterly and south-westerly course, but in the basin between the summits of the mountains which rise from the creeks above mentioned, the formation is extremely eruptive, and the lodes, so far as they have been traced, seem to run east and west. It is here that some remarkable copper strikes have been made, and several promising galena ledges uncovered. Also in this immediate vicinity, free milling quartz yielding



The Head of the Great Falls.

phenomenal surface values, has been found. The claims which are attracting the most attention at the present time are the Halifax, Eva Bell, Isabel, Tammany, Lewiston, Silver Key, Mother Lode, Mystery, Big Chief, Edison Group, Red Chief group, Bryan, Sewell and Solid Gold.

Although a large number of claims have been staked on McRae Creek, still it may be said that the country is yet but imperfectly prospected.

The Christina Lake mine owners will enjoy exceptionally good facilities for shipping ore when the railway is completed, as the line will be within easy reach of all the camps except the Burnt Basin. It is meanwhile understood that the C.P.R. intends to run a spur line up the McRae Creek valley to tap this section, and there is every likelihood that a smelter will be set up at Cascade, though no definite informa-

tion on the subject has yet been given to the public. Certainly as a smelting centre Cascade is especially favourably situated.

THE BRITISH COLUMBIA MONEY MARKET IN LONDON.

INTERVIEW WITH A LEADING LONDON BROKER.

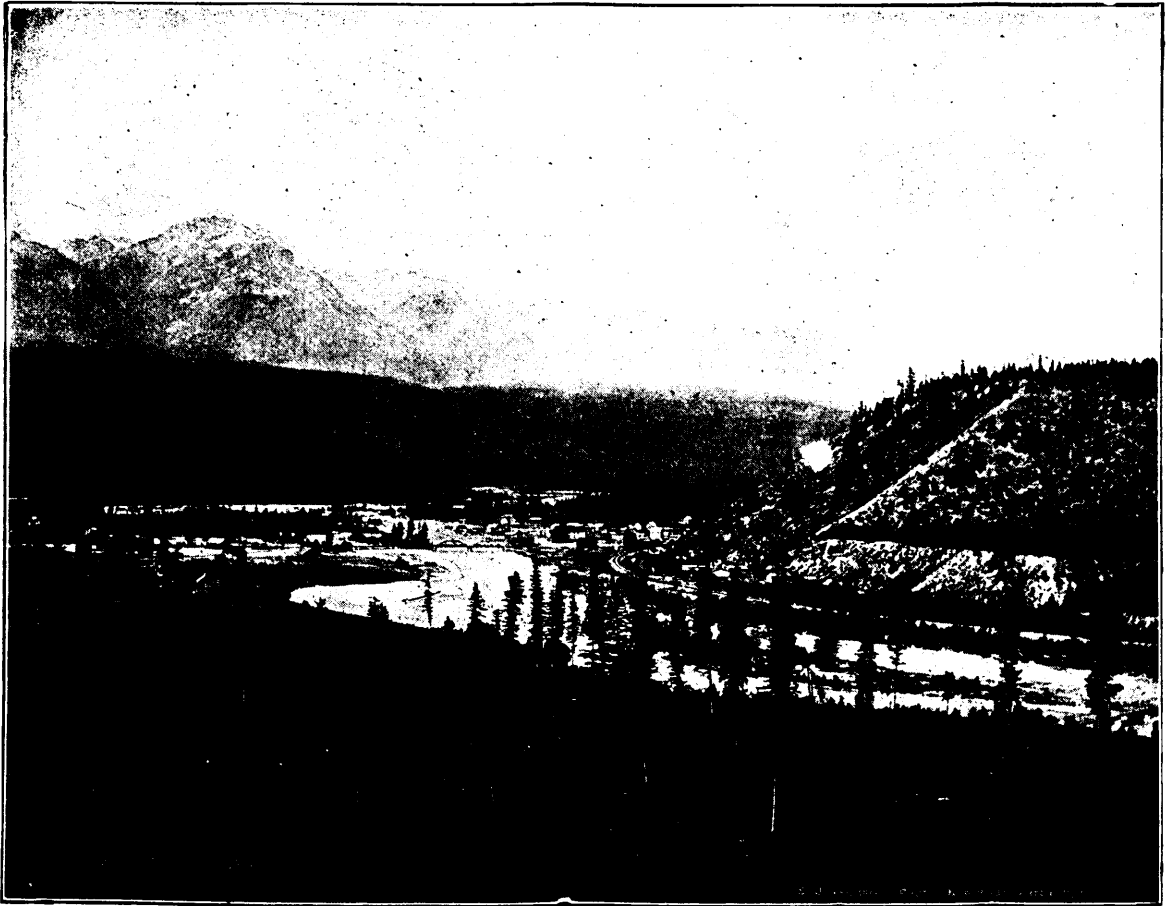
(From Our Own Correspondent).

B RITISH COLUMBIA, Ontario and Klondike have all been prominently before the English investor during the two past years, and without doubt our leading financiers have throughout the period of probation regarded British Columbia as most likely to prove a steady and permanent producer of both the precious and baser metals. I sent you last month an

dian mining shares has not yet materialised.

And incidentally, of course, to glean any other information regarding the attitude of Great Britain towards the colony whose mineral developments have of late been attracting so much attention in this country.

I therefore waited upon Mr. George Whitehead, of the firm of Messrs. George Whitehead & Chown, a few days ago, and stated my mission. Mr. Whitehead's firm does an all-round business, but makes a specialty of the industrial market, and it will give you some idea of its standing if I tell you that it acted as brokers to the Dunlop and Bovrill Companies, two concerns whose aggregate capital reached the enormous total of \$37,500,000, and whose flotations formed two of the most sensational joint stock conversions in



Golden, B.C.

interview with the secretary of the body responsible for the mining section of the forthcoming Exhibition at Earl's Court. As this letter will appear in what is practically the Christmas number of the RECORD, a season much devoted to retrospective reflections, and also in view of the prevailing depression in the market, formed here a little over a year ago to deal in Canadian mining shares, it occurred to me that it might be worth while this month seeking the opinion of a leading London broker to ascertain:

1st. (a) The general position of the British Columbia market in London; and (b) The reason of the present inactivity.

2nd. The attitude of the British public regarding Canadian mining in general.

3rd. The reason why the expected boom in Cana-

modern times.

Mr. George Whitehead is himself the eldest son of Sir James Whitehead, Bart., who was Lord Mayor of London in 1888-1889, and is a Justice of the Peace for the County of Kent. In business he is a shrewd, far-seeing man, and his firm quickly associated itself with the British Columbian movement, although despite much energetic pressure on the part of various promoters, it has steadily refused to act as brokers to any Canadian mining concern beyond the Athabasca, in the future of which Mr. Whitehead has a steadfast belief. The subject of my interview this month has kept himself closely posted with regard to developments in Canada during the past few years, and he was undoubtedly one of the first men in the "House"—as we familiarly call the Stock Exchange—to

recognise the possibilities before the Pacific Province. It was therefore only fitting that he should be one of the first to be approached with the view of ascertaining the true character of British feeling regarding the Golden Province. I found Mr. Whitehead quite willing to chat, and to afford me all the information at his disposal.

Although I have before dealt pretty fully with the constitution of the "British Columbia market," I thought some of your readers might like to have a practically authoritative statement concerning the formation of a section which has proved such a good advertisement for British Columbia. I therefore opened the interview by asking him if he could give me a few particulars regarding its genesis.

'British Columbia,' said Mr. Whitehead, 'was first brought under my notice about 1893 by Mr. H. A. Barton, of Nelson, an old Oxford friend of mine, but it was not until 1896 that I really interested myself in British Columbia. It was in that year that Mr. Clement V. Paull started what is known as the 'British Columbia market' in the Stock Exchange. For some time he stood alone in that corner of the 'House' in which all dealings in British Columbia shares have since come to be carried on. He was the pioneer dealer or 'jobber;' gradually other jobbers migrated from other markets; amongst these were Mr. F. B. Boyer, of Messrs. Douglas, Jr., & Co., and Mr. James Stoneham, of Messrs. Stoneham & Messenger, who are closely connected with the London & British Columbia Gold Fields group; whilst amongst the more recent recruits Mr. Harris, of Messrs. Burdett & Harris, is the most prominent. Twelve months ago quite a number of dealers migrated to the new section from the South African market, but they returned to their old love immediately there were signs of a renewal of activity in 'Kaffirs.' The above-named gentlemen, however, remained ready at all times to buy or sell any shares in which there was a fair chance of covering themselves at a profit. They have stood the stress of the bad times, and it is to be hoped that they will reap their reward when the revival comes, and that to them the business will be given rather than to those who flit from market to market without stability and without studying the real merits of the shares in which they deal.

"Among the London brokers who have taken the most active interest in the movement I should mention Messrs. G. A. Phillips & Co., Messrs. Sopper Bros., who have chiefly identified themselves with the Alaska gold fields, Mr. Douglas Neame, of Messrs. Vivian Gray & Co., Mr. Frank Scrutton and Messrs. Sperling & Co., the brokers to the Lillooet, Fraser River & Cariboo Gold Fields. There are, of course, many other firms, but those I have named will be sufficient to indicate that some of the leading brokers have taken up British Columbia.

"A number of provincial firms of brokers have also become interested in some way or other with Canadian mining matters, and the deep interest shown by Scottish investors in the development of the mineral resources of the Dominion of Canada has been especially noticeable."

"What do you consider to be the true feelings of the British public with regard to Canadian mining?" I asked

The reply was not particularly encouraging. "The public, as a whole, are utterly indifferent to British Columbia, for reasons which I will presently explain; but yet beneath the surface there is a certain

amount of expectancy—a waiting for some thing to justify the large amount of capital that has already been provided. Ontario, in spite of certain successes, does not carry with it the same glamour as surrounds some of the more famous Rossland mines, like the Le Roi and War Eagle. Klondike is by many people regarded as a flash in the pan; but it is British Columbia which is looked to as the Province which will provide industry; and, after all, that is what we really want to see. In the meantime, however *bona fide* the proposition, however exhaustive the reports upon a property, and however good the reputation of the engineer, the public will not, in the present state of the markets, subscribe to new concerns unless, like the Le Roi, they are well known and well developed dividend payers brought out under good auspices. Ultimately the market may thrive, but it has not yet emerged from its period of probation, nor can it be built up in a day or a year any more than can a big commercial undertaking. I do not look for a British Columbia boom yet, and I hope we shall have no premature efforts in this direction, which can only end in disaster. A steady development of a great industry on business lines is what, in the interests of the Province and the market, I should much prefer to see."

"Judging by the very few dealings in shares of locally registered companies, the English public has not taken very kindly to dollar shares. Can you explain this, Mr. Whitehead?"

"Well, you know, the dollar share at a few cents is not understood. According to English law shares cannot be issued at a discount, and the public cannot appreciate the Canadian system of starting a company by placing shares at say 5 per cent. of their nominal value. It expects shares to be placed on the market at not less than par, and of a denomination of £1; any other method is foreign to it. As an instance of its indisposition to touch dollar shares, I remember in January last we were offered a big block of War Eagles at 90 cents, but we had the greatest difficulty in getting any one to look at them, and finally the bulk of the block had to be refused, although we placed a fair number of shares privately at about that price. And now the price is \$3! Well, without exception, all these shares have gone back to Canada, and whilst there is an active market in War Eagles in Toronto and Montreal we cannot here deal freely in them or any other Canadian scrip. Some day this may not be so, but at present the average Englishman cannot realise that the company whose shares stand at 5 or 10 cents can be a good proposition, and many people are afraid that these companies are mere 'wild cats,' like certain South African shares which in 1895 were foisted on to the public at various discounts, and are now not worth the paper on which they are printed.

"Now the English investor likes to have his shares in sterling, and not in Canadian currency, and the boom if ever it comes will chiefly be in the shares of English registered companies. This I think is being recognised in Canada; at any rate the recent attempts to turn certain Canadian concerns into English companies seems to indicate that such is the case."

"Why did not the expected boom materialise? Well, I will reply to that question under three headings:

"(1) Want of capital. There is not a great amount of wealth behind the movement. So far, with the exception of the Whitaker Wright, and one other

strong group, the promoters have been men unknown to the public, without past successes to point to, and therefore without any following of importance.

"(2) This insufficiency of capital means an absence of quick results. In other booms the public have lost millions of pounds, so that now they are sick of promises, and look for results, and nothing but results. In the absence of such results, and in the absence of information (and here the secretaries of Canadian registered companies are much to blame). Many of those who already hold B. C. shares are tired of waiting, and their selling in these bad times causes depression, and prevents others who might come in from buying until things look brighter.

"Take other past booms for instance; we had the same sequence of events, practically, that I expect we shall experience here. At first plenty of talk, inadequate funds, periodical attempts at booms, based on reckless promises, followed by the usual collapse of the market; then steady development, often entailing reorganisation, with a view of obtaining further capital; then later the recognition of the necessity of publishing reliable and frequent statistics of work done and results achieved, followed by the period of regular returns, increased activity in the market, and perhaps a boom. This, possibly, is what we shall see in B. C. There is, however, another factor which probably is helping to hinder the coming of the much talked of boom in B. C. Just as the Englishman prefers the £1 fully paid share to the \$5 share, so he prefers an interest in a *gold* mine to an interest in a silver mining proposition. Rossland possesses greater attraction for him than the Slocan; the investor cannot understand how it is possible for a silver mining district to hold its own against the recent steady depreciation in the price of the white metal; he fails to realise that the development of gold-copper propositions is a slower matter than that of silver-lead properties, and it is the comparative absence of results from the gold mining camps that has disheartened him."

I told Mr. Whitehead that I should be pleased if he would tell me, in conclusion, his opinion of the general position of the B. C. market in London at the present moment, and what he thought were its immediate prospects.

Mr. Whitehead explained that "in taking up British Columbia his firm had looked at it not as promoters, or dealers in prospects, claims, or town sites, etc., but purely as share brokers. They had not identified themselves with any particular group, but wished rather to keep themselves well posted in developments so as to be able to advise their clients upon the condition of the various companies already formed, and likely to be formed, as it became more and more evident that Canada afforded excellent opportunities for the investment of British capital.

"He himself felt that there was a great future before Canada, and in his own mind he was quite sure that when British Columbia mining was proved to be an industry, and not a mere gamble, the London Stock Exchange would be quite prepared to show due appreciation of a country which had already attracted so much attention both in London and on the continent.

"So long as politics are, however, unsettled and money dear—when I interviewed Mr. Whitehead the political outlook had not begun to clear—you cannot expect a revival of speculative activity even in the dividend paying stocks of railway companies or other

developed industries much less a real revival of activity in mining shares. When the latter does come we may expect to see it in South Africa or West Australia, both of which countries have many dividend payers, and are led by men of means, who could start the ball rolling immediately they saw signs of the public coming in. The English investor it must never be forgotten is largely interested in both these markets, and he wants to average when he can see the chance of doing so with advantage to himself. Hence the deduction that the boom will not come yet in British Columbia. What is immediately necessary is the initiation of official schemes or plans for the education of the British public. In this connection I would say frankly that if a change is to be made in the representation of the Province in London"—since this interview it has been announced that the government has appointed a gentleman with offices in Sargeant's Inn—"it should have as its permanent head a man of business capacity, and the offices should be located somewhere in the City, instead of amongst the lawyers and engineers of the west end of London. What we want are systematic returns, which if possible should represent the whole Canadian mining industry, or if that is too ambitious, we want a British Columbia Chamber which in making up its returns should, for the information of the public, divide the various mines into groups of districts."

I told Mr. Whitehead that this was a point I had been emphatically pressing upon the attention of the Government for two years and more.

"You know," he continued, "the public here does not understand much about British Columbia. It does not recognise the different districts at all, and therefore a proper department should be formed to complete its education. Given energy, ample funds, and a lower cost of production, which latter should now be possible by the opening of the Crow's Nest Pass Railway, there is an enormous future before British Columbia. In the meantime the British America Corporation, the London & British Columbia Gold Fields, and the Alaska Gold Fields may be the pioneers as dividend payers in this market, but many more dividend payers will be necessary to create real activity. The British Columbia boom may be a matter of slower growth than a Klondike boom, but to my mind in the long run British Columbia will prove a great mining country, and will do much to place Canada on a footing with other colonies already recognised as great gold producing countries. In the meantime steady development, careful education of the public, and strong efforts to prevent the booming of 'wild cats' are what those who have unbounded faith in the future of British Columbia regard as most necessary in the true interests of the Province."

THE MONTH'S MINING.

KAMLOOPS.

(From our own Correspondent.)

MESSRS. Fowler & Carter have resumed work in the tunnel on the Charlotte claim of the Kimberley group. It is expected that the management of the Pot Hook mine will have the new hoisting machinery in operation early in January. Mr. Nestelle, who shipped a ton of ore from the Cyclone to the Everett smelter, reports that the return was \$30. As the ore body appears to be of considerable extent, there should be no difficulty in getting this property in good working order as a shipper early in the new year. The Copper King group is being worked steadily, and a fair amount of good ore is now ready for shipment. Enquiries as to properties are being frequently received from outside points, and there is promise of the expenditure of a large amount of English capital in the camp in the near future. The folly of giving

short bonds (thirty days) on claims to English parties was pointed out last month, and Mr. C. W. Ward has been obliged to seek an extension of time on the bonds he secured. It would have been better to have asked for a three-months' option in the first instance. Extensions have been, up to the time of writing, given on the Golden Star, Iron Cap, and Tartar groups. Nothing further has been done by Mr. Ward with the Kimberley group, one of the best properties on Coal Hill, nor has any payment been made as was erroneously stated by an up-country paper. Several cinnabar claims have been located near Copper Creek recently. George McDonald and partner are opening up their properties on Jamieson Creek. Work will be resumed on the Python shortly, and the owners have acquired the adjoining claim, the Copperhead. The indications are that the coming spring will see mining operations carried on with great vigor and on a larger scale than heretofore on Coal Hill.

BOUNDARY CREEK.
(From our own Correspondent.)

As 1898 is now closing, a brief summary of the position to-day in some of the better known claims in the several mining camps in the Boundary Creek district may be of interest. The work of sinking the main working shaft in the Mother Lode, in Deadwood Camp, is progressing steadily. It is expected the 200-level will be reached by the middle of January, and then the big lode will be extensively prospected at that depth by cross-cutting and drifting. This level will be 175 feet deeper than the lower cross-cut in the old workings on the other side of the hill. At the time of writing the bottom of the shaft is all in ore of good grade. The plant here—hoisting, pumping, drilling and electric light—is running smoothly and giving every satisfaction. Not very much progress has lately been made on the Morrison, which is situate in the vicinity of the Mother Lode, but it is hoped that the small steam hoist now on the ground will be set up ere long, and that the work of prospecting the enormous showing on this claim will shortly be vigorously pushed. A diamond drill is soon to be used for the purpose of prospecting the D.A. claim, one of the group owned by the Boundary Creek Mining and Milling Company, of Greenwood. Across Boundary Creek, in Providence camp, a move is to be made, so it is stated, on the Combination, upon which it is proposed to drive a 300-foot tunnel.

Greenwood camp is still attracting much attention. The cross-cut at the 200-foot level on the Old Ironsides was, at date of last advices, in 273 feet, 240 feet being in ledge matter, about one-third of which is stated to be pay ore. An up-raise of about 150 feet, to connect with a prospect shaft fifty feet in depth, is now being put up to secure better ventilation below. The Knob Hill tunnel, at about 400 feet in, passed into country rock, after running through ore its whole length. The right-angle width of this ore body is estimated to be about 240 feet, the tunnel giving a depth at its face of 140 feet. An upraise is to be made to the surface for air, and then a station will be cut out to make room for a hoist, preparatory to sinking from the tunnel on this big deposit of ore. It has been announced that capital has been subscribed for a smelter, to be established in the district for smelting the ore from the Old Ironsides and Knob Hill claims. No. 3 shaft is now being sunk on the Stemwinder. At the 100-foot level it will connect with a 25-foot winze, put down in a cross-cut run from No. 2 shaft. This winze is in good ore, so it is anticipated that when connection shall have been made with it, the work of raising ore for shipping will be entered upon. A steam hoist is to be obtained for this claim to expedite working. The incline shaft on the Brooklyn, adjoining the Stemwinder, is now past the 100-foot level and it is intended to continue sinking down to 200 feet. Two 30 h.p. boilers and a hoist have lately been installed on the Brooklyn. The 300-foot tunnel now being driven on the Rawhide, is in about half that distance. This tunnel will, it is expected, cut the lead at a depth of about 250 feet. There is on the surface a deposit of hematite and chalcopyrite, from sixty to seventy feet in width. Several other claims on Greenwood camp are also being prospected.

Cross-cutting at the 300-foot level has been in hand lately on the Winnipeg, in Wellington camp, and similar work at the 150-foot level on the adjoining Golden Crown claim. When last heard from neither had then met with the lead at the respective depths named. In Central camp the City of Paris tunnel is now in between 500 and 600 feet, so the lead may at any time be intersected. An air-compressor has been installed here, and better progress is consequently now being made. Should the lead be met with and prove up to expectations, a 1,600-foot tunnel will be run at a lower level, so as to give a depth of about 700 feet.

In Long Lake camp the north drift at the 122-foot level on

the Jewel is in a about 120 feet. The vein has widened in this drift and the quartz is more freely mineralised now than it was earlier. The incline shaft is being deepened to 200 feet, at which depth a drift will be run 100 feet and then an upraise will be made to the 120-foot level to block out the ore within these limits. The Jewel is now under a working bond to the Jewel Development Syndicate, of London, England, which organisation purposes thoroughly prospecting the property.

The only item of news lately received respecting Smith's camp, is that the Ruby has again been bonded, this time for \$12,000. There is no fresh development of any moment in Copper camp. It is reported that some nice looking ore has been found on a claim in Graham's camp, near Midway, but no particulars are yet to hand.

There is a report current that the B. C., in Summit Camp, is likely sold at a high figure, and that the water has been pumped out of the mine workings to admit of an examination being made. It is intended to resume work shortly on the Emma, also in Summit camp. Work is proceeding on the Oro Denero, which is on the Emma lead. Many other claims have either had or are having more or less work done on them, but the above briefly summarises nearly all the most important in the district which are not now idle.

The records for 1898 to November 30th, obtained at the office of the Mining Recorder for the Kettle River Division, which includes the Boundary Creek district, are given below; also those for several earlier years. The division was subdivided in 1897, so the 1898 figures are for a smaller district and for only eleven months as against the full earlier years:

	1893	1894	1895	1896	1897	1898	Mo's.
Free Miner's Certificates....	194	202	451	957	1,050	653	11
Location Records.....	102	93	771	1,279	1,056	563	
Certificates of Work.....	66	85	140	566	749	528	
Conveyances.....	59	55	244	713	779	361	
Certificates of Improvement.	0	3	11	15	16	40	
Mill-site Leases.....	0	0	3	1	4	0	
Abandonments.....	6	0	12	35	59	55	
Water Grants.....	1	3	3	3	1	5	
Permits.....	0	0	3	9	1	3	

ROSSLAND.

(From our own Correspondent.)

WAR EAGLE—The new assay office is completed and so are the stone and concrete foundations for the new machinery which will from now on be in active course of installation and should be completed some time during the current month, or at the latest early in February. It was said that the machinery should be completed by Christmas day, and if everything had worked just so it might have been done. A good deal of time is being occupied by the timbering of the new shaft, and yet with fourteen machines at work there is more ore raised than the railway can carry off to the smelter at Northport. This is a state of things that needs remedying, and it is to be put to the credit of the narrow gauge between Rossland and Trail that they are really going to put some new engines on the line. They are needed.

LE ROI—The price paid to the minority shareholders was \$7.25, and the matte at the Northport smelter is to be divided among them, which ought to bring about another dollar. The B. A. C. management are evidently sincere about the theory of gophering, as they have very considerably cut down the shipments from the mine, and they are now about one thousand tons per week. The chief work going is development and the proper timbering of the older parts of the mine, which had been to some extent neglected. A station has just been cut at the 800-foot level, and when completely finished the intention is to sink to the 900-foot level. Also a new three compartment shaft at the further end from the present workings is under contemplation and will doubtless be started early in the year.

WHITE BEAR—The timbering of the shaft has been completed to the 250-foot level. Stations have been placed every few feet so that it is practically impossible for any miner to get hurt in ascending or descending the shaft. This is as it should be, and great credit is reflected on the manager, John Y. Cole. Part of the mine buildings were accidentally burned last month, but have been replaced. Just under the shaft a new vein has been struck, which it is thought may prove profitable. It is the intention of the manager to commence shipments from the cross-cuts at the low level in the beginning of the year. Part of the ore is low grade, but being of a silicious nature can be presumably favourably treated at the new reduction works near Rossland.

IRON MASK—Nothing new has been done in regard to the

litigation between this mine and the Centre Star. The late rise in stock is no doubt due to the splendid find of good ore in the winze, which we reported last month as having gone down 60 feet. That winze is now all in ore and that ore is of an \$80 grade. Moreover, this is in addition to the reserves of the mine, and really renders the outcome of the litigation over the disputed ledge, though wearisome and expensive of time and money, a matter of considerably smaller moment. About forty men are at work, and some small shipments have been made which it is hoped will increase rapidly ere long.

CENTRE STAR—Work is being rapidly prosecuted all over the mine. The north vein is still being completed, and the main shaft, which is of three compartments, is down to the tunnel level and will now be timbered. Superintendent Hastings has thus fulfilled his forecast, *e.g.*, that the shaft would be completed to the tunnel level within the month. Excavations are in progress for the reception of the new hoisting plant. It is stated that just as soon as the electrical compressor is finished at the War Eagle the old steam compressor now there in use will be connected with the Centre Star, and work will boom.

MONTE CRISTO—There are plenty of rumours still in the air with regard to this property, but what was said over the Parnell commission can be as truly said here, "That what was true was not new and what was new was not true."

VIRGINIA—There is little to report on this mine. Work is steadily progressing on the shaft, which is now down 440 feet and is intended to be carried on in the same manner until the 500-foot level is reached, when cross-cutting will be done and the future of the mine more accurately determined. This should be done about the beginning of February.

IRON HORSE—The greater part of December was occupied in the installation of new machinery which is now in place, and the development work has been resumed.

COMMANDER—Work is still proceeding on the shaft which is now down about 330 feet. There is nothing to report of any moment.

GERTRUDE—The new shaft house has been finished. The shaft is down about 145 feet, and the intersection of tunnel and shaft at the 100-foot level has been made. A new station is in process of excavation, and a horse whim will then be put in. The showing is fairly good, and the mine is evidently a strong favourite among many.

MASCOT—The new compressor is ready for work with the exception of the electrical motor which is still delayed in its arrival. The main tunnel is in nearly 450 feet and has met with remarkably good showing, especially of late. The lower tunnel is also under way and fair progress is being made. About eighty-five feet in distance has been attained. With the completion of the electrical arrangements, work should then show up in good style and the Mascot be added to the list of proven mines.

NOVELTY—The tunnel is being proceeded with and is now in about forty feet without the opposite wall being reached.

EVENING STAR—There is nothing new to report of this mine.

JO-JO—Work has been resumed on the Jo-Jo, which is situated west of the Commander, and a shaft is down about forty-five feet.

COXBY—Work is proceeding in the drift to the westward from the upper tunnel where the strike was made, and some good looking ore is being met with. This drift will be continued for some distance till the vein has been proved and then a winze will probably be sunk. On the lower tunnel work is going on, though the expected strike has not as yet been made.

JUMBO—Work is going on steadily in both tunnels. In No. 2 a streak of tellurides carrying good values has been struck, and is proven to be seven feet wide. There are negotiations for the sale of this property in hand, but whether the consummation is close has not as yet transpired.

ANNIE—This is the latest of the B. A. C. properties to come to the front, and the find made on this property has again amply justified the wisdom shown by Chas. Macintosh, honourably known as the "Governor," in the selection of investments for the corporation in which he is a conspicuous figure. The find on the Annie which was made in the middle of December, was found during the development of that property, which is being done through the Josie workings, and consisted of two distinct ledges, carrying values in the neighbourhood of \$20. One of these is the Josie ledge, but the other is thought to be peculiar to the Annie. At all events it has not as yet been marked in the Josie workings. B. A. C. stock is reported from London as being nearly at par, and if this corporation proceed in this way there is little likelihood of its climbing down again.

JOSIE—The real ledge for which we reported last month that Superintendent Long was zealously searching for at the three hundred foot level has been struck at that point, and has proved so far to be an ore chute of an average width of four feet, carrying undoubted values. Five or six new drills are to be put to work on this property, and the outcome is being watched interestedly by the camp.

NO. 1—A new boiler is being put in position on the ground, which will be for the purpose of working a cage for the miners descending and ascending to their work. This will be more or less expensive, but the management think that this will be more than compensated for by the gain of time and energy now wasted in the clambering over the endless ladders on the way to and from work. The tunnel is progressing well; it is some time since the superintendent (Long) reported that the 375-foot station had been gained. Good ore is being found. In the shaft a cross-cut is in hand at the 290-foot level, and a new lead has been struck which is making a fair showing.

NICKEL PLATE—The outlook at this mine was never better. It is considered as proven that the same system of ore bodies met with in the properties lying immediately to the north of the mine extends to the Nickel Plate also. Work is principally going on at the 309-foot level, and the way in which that work is being pushed by the manager, William Haskins, is a credit to the camp, and is, besides, a record of good work under unusually puzzling conditions.

GREAT WESTERN—Cross-cutting east and west has been made on this mine from the 200-foot level with good results. Sinking will now be undertaken to the 200-foot level, where it is probable similar operations will be gone over again, in order that the development of the mine may proceed on a good basis.

COLUMBIA-KOOTENAY—Work is going on in tunnels Nos. 3, 4, 5 and 6. No. 5 is in over 700 feet, and No. 6, which was only recently started, is drifted over 100 feet. Indications here are favourable, and the face of No. 6 is beginning to show ore. Preparations are about to be made by Superintendent Macdonald to start an extensive scheme of cross-cutting which, it is hoped, will thoroughly open up the mine. The review of the B.A.C. properties shows active work, with plenty of encouragement everywhere. Much money is being sunk, and the pay-roll of this corporation is by no means a small matter; yet it is expected that the system of development carried out under the general superintendency of Mr. Carlyle will prove to be the best that can be employed under the conditions governing the mines under his control.

DEER PARK—Drifting is being steadily carried out at the 100-foot level, and the showing is good. Shortly a new drift will be begun at the 150-foot level, where perhaps the best showing of the mine was come upon during the sinking of the main shaft. The intention is to carry out the system of drifting and cross-cutting at each level until the existence of a mine of no ordinary greatness is fully made apparent to the most sceptical observer. That this is the opinion of the present management is not open to doubt, but a great many of the doubting Thomases of the camp who believe only the mines that have been proved, forgetting that Le Roi itself went a-begging at five cents not so very many years since, can not take in the fact of anything on the South Belt proving a success until it is irrefragably demonstrated unto them. On the success or failure of the Deer Park, in the opinion of most, the value of the little thought of southern belt of mine depends. Yet on the Deer Park everything does not in actuality depend. There are others.

HOMESTAKES—Work is here proceeding on the main shaft, which is being sunk to the 300-foot level. The dip of the shaft has carried it out of the vein and therefore nothing can be said about the property except that it is not idle. When the requisite depth is attained the vein will be cross-cut, and on the lead thus transected proving well or the reverse will the future development of the property depend. If appearances are not good enough to justify the cessation of work on the shaft, sinking will be continued until the depth gives the value. The ore is there and it merely requires belief and perseverance to make a mine that will put the Deer Park to trouble to maintain any superiority which its favourers may claim.

ABE LINCOLN—There was some trouble with regard to a part of the machinery employed on this mine resulting in the temporary cessation of work. Cross-cutting will proceed to the south, and there exists a more than reasonable hope that the lead will be struck.

LILY MAY—The shaft is now down towards the 200-foot level and some ore has been come upon, though not in any very large quantities.

SILVER BELL—Work has been resumed.

SUNSET No. 2—The long cross-cut from the 350-foot level is being continued, and is nearing its finish. It is expected that it will strike the vein at a distance of 450 feet from the surface, and that the ledge is likely to prove of great width. This is taken from the indications found at the surface. The face of the drift is showing an alteration from the ordinary country rock, and the ledge is evidently not far distant.

WINNIPEG AND BRANDON & GOLDEN CROWN—(Wellington Camp) Work was commenced in November on the Brandon & Golden Crown cross-cutting on the 150-foot level, with two shifts, using a machine drill. The drift is now in at that level over sixty feet. Mr. G. H. Collins, the managing director, is also cross-cutting at the level above—100 feet. The ore body which was uncovered at the 50-foot level, exposing a ledge of several feet of high-grade pyrrhotite ore averaging from \$40 to \$50 to the ton, is expected to be come across at any moment on the lower levels. On the Winnipeg a shaft has been sunk close on 300 feet. At that level it is intended to drift and cross-cut the ore chute. The values are nearly similar to the Brandon & Golden Crown, which it adjoins. A shipment was made of five tons to the Northport smelter, and the certificated assay gave a return of \$74 of all values, \$73 of this being gold and \$1.80 copper. If the management succeed in making the strikes they expect, and they are well equipped with machinery, etc., for the purpose, there is small reason to question the assertion of those interested who declare that they have the pick of the propositions in their camp.

YMIR.

(From our own Correspondent).

The following is my summary of the month's happenings:

The Black Cock mine is shipping ore to the Northport smelter, and Mr. Davis, the lessee, has a number of men at work on the property, and ore is being sacked and shipped at the rate of about three tons per day. Six additional cars of mill machinery arrived from the East for the London and B.C. Gold Fields Company. Mr. D. M. Cameron, who is working his property, the "Union Jack Group," recently made a very important strike, three feet of solid ore. Mr. Phillip White, who is interested in the Wilcox mine, is now visiting in Montana, and proposes, I understand, on his return, to install a stamp mill on his property, on which he asserts there is a value of \$30,000 of free milling ore on the dump. Messrs. Hennessey Bros. have a force of men at work on Sixteen-Mile Creek, and Mr. W. Blanchfield has just returned from that country, where he has completed forty feet of work on the Cariboo Head. Much work is being done this winter in the copper belt at the head of North Fork of Salmon River. On the Evening Star a horse whim has been put in, and a 100-foot shaft is being sunk, with so far promising results. The New Victor Gold Mining Company, owning the New Victor group, have given Mr. Booth, of Nelson, a lease on the property for one year. The lessee will mine and ship the ore, and pay a royalty to the owners of seven and one-half per cent. from smelter returns. This property adjoins the Wilcox, and is only six miles from Ymir. The ore averages well, running between \$50 and \$60 in gold.

Mr. Eugene Croteau, with others, are petitioning the Government to construct a waggon road from the Ymir mine to the head of the North Fork of Wild Horse Creek, a distance of about four miles. There are no engineering difficulties to prevent this road from being built. The grade is an easy one, and the road could be built for \$900.00 per mile. Of this amount owners of property in the neighbourhood are willing to contribute some \$1,500.00. Last year eleven claim holders owning property within a radius of four miles of the proposed road, spent \$26,000.00 for work on their property. I do not see how the Government can conscientiously refuse their request in view of the large amount spent by property-holders in that section. If the road is built there are numerous properties that can ship ore. It is on the dump, but lack of transportation facilities alone prevents them shipping to the smelters.

December 8th was a red letter day in the annals of the Canadian Pacific Exploration, Ltd. On that date the Company commenced the operation of their mill. Just twenty-five months prior to that date the Company took over the Porto Reco property from the original locators. Since that period large sums of money have been spent, for which there is now to show a well developed and equipped mine. The first run has proved entirely satisfactory. I propose in a future issue to give the readers of the MINING RECORD a lengthy description of this property.

The Arlington and Second Relief properties are shipping in the neighbourhood of six cars of ore a week.

FORT STEELE.

(From Our Own Correspondent).

One of the most important events of the month was the arrival of the Dominion Engineer, Mr. Roy, at Fort Steele on the 12th, and the starting of work to improve the navigation of the Kootenay River from Fort Steele to Wardner, for which it will be remembered a grant of \$5,000 was made by Government. The bulk of the work will be done on Wild Horse bar, which is the worst impediment to navigation. The tailings from the Invicta (now the Consolidated Consols), Nip and Tuck, and China Hydraulic placer leases have been for past years washed into the river and accumulated, with the consequence that for four months of the year out of seven boats have been able to pass this point. It is hardly necessary to point out that this stoppage of traffic was a very serious matter, as supplies are largely brought in by the steamers on Kootenay river to the North Star and Sullivan mines, and the Skookum, Chuck, Tindlay, White, Tracy, Wolf and Wild Creeks and Bull River districts.

WILD HORSE CREEK.

Mr. Egan now has 400 sacks of ore ready for transshipment at Fort Steele from the Big Chief group of claims, which are situated on Boulder Creek, a tributary of Wild Horse Creek, and six miles distant from Fort Steele. It is Mr. Egan's intention to make this shipment for purposes of securing a smelter test of this ore. The work at present consists of a 40-foot tunnel in ledge 1, which is 12 feet wide with a 4-foot paystreak. On the second ledge a 4-foot vein has been opened by a tunnel. The ore shows visible gold.

ST. MARY'S DISTRICT.

All the new machinery for the North Star mine has arrived, and the greater part is installed ready for use. Work, I understand, is likely to be resumed soon after the New Year.

SULLIVAN MINE.

The shipment of machinery, consisting of a 23 h. p. boiler with hoisting and pumping plant has arrived at Cranbrooke, and will be shortly shipped out to the mine.

MOYAI.

At the St. Eugene mine a 200-ton ore bin has been just completed on the concentrator site at Moyai lake, and the C.P.R. intend putting in a siding at this point to facilitate the handling of the ore.

CORRESPONDENCE.

The Editor does not hold himself responsible for the opinions which may be expressed in this column. No notice will be taken of communications unless accompanied by the full name and address of the writer.

"GEORGE-ISM" IN ROSSLAND.

TO THE EDITOR:—Rossland has added to its armory another weapon for battling the future. Crow's Nest coal is now on sale in Rossland, and the Lethbridge Coal Company not to be behindhand have also established an agency in that city. Cheap fuel is certainly a great factor in mining. The wood near to Rossland is getting used up, and now it is claimed that it certainly is more economical to burn coal than to burn wood. Nor is this only applicable to mining, but to the residents of the mining camp. Anything that will tend towards lessening the cost of living will also tend towards lessening the cost of mining. We of British Columbia do not recognise this as much as we should. We allow the first man who gets in on a new place to reap the fullest benefit from his shrewdness, and tax, and tax heavily, all the later comers. As the town increases and becomes more and more established so does the price of real estate advance till it is practically impossible for the miner who is developing, with the aid of capital, the future of his camp, to find a place to domicile himself without paying a comparatively heavy amount for his little lot. Little indeed it often proves; 100x30 is the size that he has to put up with, and, building, either has to pay a high rate of insurance for his wooden home or run the risk of being burnt out without compensation any unlucky night. This is an unfair tax and really works as hardly for the capitalist as

for his employee. The higher the rate of living the higher price must be paid for labour. The higher the wage the greater the cost of extraction of the ore on which the whole future of the camp depends. Of course this is only one item in the account, but it is one that tells seriously if the reports that are presented to the United States Congress or to our own Dominion Parliament whenever any tariff revision is on the tapis, are to be credited. There is a way out of the difficulty. Whether we British Columbians will ever adopt it remains to be seen, but the remedy is nevertheless there. And it is this: We are willing enough to allow a man to homestead and take up so many acres of ground for agricultural purposes, why should we be unwilling to allow another who is not an agriculturist, but who is doing his best to help along his country in some other way, to claim sufficient land to build him a home. Perhaps it is hardly practical to allow this privilege to every person, but it is certainly practical, for the scheme has been tried and is successful in New Zealand, to provide for the actual miner. On the ground that he has to live so far from his work, the mining boarding house has gained its position. The remedy of our sister colony cuts right at the root of the evil.

From Whitewater—	
Whitewater	210
Jackson	50
Whitewater Deep	39
From McGuigan—	
Rambler	95
Antoine	111
Native Silver Bell	30
From New Denver—	
Bosun	407
California	60
From Silverton—	Tons.
Comstock	185
Emily Edith	20
Fidelity	130
Fisher Maiden	107
Silver Nugget	51½
Vancouver	320
Wakefield	20
Total	832½
From Ten Mile—	
Enterprise	400

Rossland, B. C.

A. W. D.

TO THE EDITOR:—I notice in the MINING RECORD for November under "Answers to Correspondents" that you, in answer to W. H. F., of Spokane, informed him that his report on the Quatsino mining claims is "utterly untrustworthy," and that you are so informed by a man representing himself to be in the employ of Capt. De LaMar, the great mine operator.

As I am largely interested in the claims referred to, and in fact located a number of them and prospected most of the ground embraced in those claims, I will state that the report referred to is mostly based on and taken from my reports of the ground. I have been spending a good portion of my time for the last twenty months in that particular part of the southeast arm, and have at the present writing no reason whatever to change my opinion of the exceptionally large and numerous exposures of ore on the Canyon Creek and Comstock Mountain claims, and although I do not claim to be either a mining engineer, expert or a mineralogist, the fact remains that real mining men of long and varied experience who have taken time and trouble to go over that ground, have come to the conclusion that Mr. W. H. F.'s report is not only true in every particular, but that it could without exaggerating anything have been made still stronger.

The gentleman whose condemnatory opinion of the country you seem to have accepted as finale, spent just one hour on the ground. The writer was with him. He did not want to go out from the worked trail, and the first exposure of what we knew to be good ore, was all that he needed to make up his mind that the country was no good.

As far as Capt. De LaMar's expert opinion of our country concerns it does not make a particle of difference to us. I may make some difference with Capt. De LaMar, however.

The properties are now sold for a large figure, and work will be commenced about January 1st, inst.

Yours respectfully,

Quatsino, B. C.

O. WERNER.

SHIPPING MINES.

SLOCAN ORE SHIPMENTS.

The shipments of ore from July 1st, 1898, to December 22nd :

From Sandon—	Tons.
Payne	8,080
Ruth	1,719
Slocan Star	1,757
Last Chance	410
Sapphire	184½
Coin	13½
Wonderful Bird	13½
Sovereign	801¼
Wonderful	8
C. M. Wilson	2
Treasure Vault	40
Reco	39
Miller Creek	40
Blue Bird	45
From Concentrator Siding—	
Idaho Mines	2,155
Queen Bess	948½
Manitor	20

SLOCAN—DECEMBER.

From November 23 to December 22 :

Slocan Star	400
Payne	970
Ruth	236
Reco	40
Blue Bird	45
Idaho	631
Queen Bess	223
Last Chance	20
Noble Five	201½
Monitor	20
Aurora	41
Antoine	531½
Rambler	90
Dardanelles	45
Total	2,835

ROSSLAND—DECEMBER.

The ore shipments from this camp for the three weeks ending December the 24th, were as follows :

Le Roi	3,585
War Eagle	3,050
Iron Mask	118
Total	6,753

THE YEAR.

Following are the ore shipments from the mines adjacent to Rossland from Jan. 1, to Dec. 24, 1898 :

Le Roi	66,287
War Eagle	51,717
Centre Star	2,657
Poorman	453
Iron Mask	3,404
Cliff	140
Velvet	350
Monte Christo	416
Sunset No. 2	30
Deer Park	6
Giant	114
Total	125,724

The total shipments from the camp since Jan. 1, 1897, aggregate 198,564 tons.

For the month of November the exports of ore from Rossland comprised 7,486 tons, of the value of \$206,418.90. The matte exported amounted to 397,258 pounds, of the value of \$125,149.60, and the total exports for the month amounted to \$331,568.60.

NELSON.

We are indebted to Mr. Henry E. Croasdaile, General Manager of the Hall Mines, Limited, for the following returns:

For 18 days' 3 hours' smelting: 2,207 tons of ore were smelted, containing (approximately) 53 tons copper; 45,960 ounces silver.

FOREIGN COAL SHIPMENTS.—NOVEMBER.

Following are the foreign coal shipments for the month ending 30th November, 1898, by the New Vancouver Coal Mining and Land Co., Limited.

Date.	Vessel.	Destination.	Tons.
2—	Str. Tyee	Port Townsend	72
6—	S.S. Burma	Port Los Angeles	4,385
6—	S.S. Siam	San Francisco	4,378
9—	S.S. Titania	San Francisco	5,344
10—	S.S. San Mateo	Los Angeles	4,332
15—	Str. Tyee	Port Townsend	66
16—	Str. Pioneer	Port Townsend	32
22—	Str. Burma	San Francisco	4,327
27—	Bark Willscott	Honolulu, H.I.	3,447
29—	Bark Diamond Head	Honolulu, H.I.	1,464
20—	Str. R. Holyoke	Port Townsend	60
Total			27,907

WELLINGTON SHIPPING.

Date.	Vessel.	Destination.	Tons.
1—	S.S. Wellington	San Francisco	2,550
7—	S.S. City of Topeka	Port Townsend	150
7—	S.S. Bristol	San Francisco	2,500
7—	Bark Wilna	Honolulu, H.I.	2,350
9—	Str. Pioneer	Port Townsend	35
10—	Str. Tyee	Port Townsend	80
17—	Ship America	San Francisco	2,000
18—	S.S. Wellington	San Francisco	2,550
18—	Str. Holyoke	Port Townsend	42
19—	S.S. Alki	Seattle	200
24—	Barge Richard III	Mary Island	1,750
26—	S.S. City of Topeka	Port Townsend	165
28—	S.S. Signal	Astoria	654
Total			16,026

UNION SHIPPING.

Date.	Vessel.	Destination.	Tons.
8—	Str. Rapid Transit	Seattle	252
8—	S.S. Rosalie	Mary Island	24
8—	S.S. Dirigo	Victoria	260
12—	S.S. Rosalie	Seattle	50
12—	S.S. Excelsior	Seattle	48
12—	S.S. Aorangi	Vancouver	970
21—	S.S. Wolcott, Seattle	Seattle	47
21—	S.S. Hallowa	Seattle	23
21—	Bark Hayden Brown	San Francisco	950
26—	S.S. Rapid Transit	Seattle	258
Total			2,882

Following are the foreign shipments to 20th December, 1896, of the New Vancouver Coal Mining and Land Co., Limited.

Date.	Vessel.	Destination.	Tons.
1—	S.S. Siam	Port Los Angeles	4,329
6—	S.S. Wyefield	San Francisco	5,122
12—	Bark St. Katharine	Honolulu, H.I.	1,699
13—	S.S. Titania	San Francisco	5,370
13—	Str. Wanderer	Port Townsend	25
17—	S.S. Siam	Port Los Angeles	4,338
Total			20,883

THE METAL MARKET—DECEMBER.

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

BUSINESS at the commencement of the month was in a somewhat unsettled state, due in part to a feeling of uneasiness in respect to the political situation in Europe and the high rates for money. Since then, however, an improvement all round has been noted, and money is in abundant supply in New York.

SILVER.

This market has been decidedly quiet, the average prices for the month being below those quoted for November. It is, however, noted that the rates for spot and future have been converging, so that March silver has commanded a price only 1/8d. under metal for prompt shipment. One reason for the declining rates is pressure of sales in London, but India has bought moderately and the demand from China has lately increased slightly, improving prices and creating an active business for shipment on Chinese account. The highest price reached during the month was 59 11-16, and the lowest 59 1/2. Our telegraphic advices from New York to-day (Dec. 24th) quote 59 3/8, 59 3/8.

AVERAGE PRICES OF SILVER PER OZ. TROY.

MONTH.	1898.		1897.		1896.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January	26 29	56.77	29 74	64.79	30.69	67.13
February	25 89	56.97	29 68	64.67	31.01	67.67
March	25 47	54.90	28.96	63.06	31.34	68.40
April	25 95	56.02	28.36	61.85	31.10	67.92
May	26 31	56.98	27.86	60.42	31.08	67.88
June	27 09	58.61	27.58	60.10	31.46	68.69
July	27 32	59.06	27.6	59.61	31.45	68.75
August	27 48	59.54	24.93	54.19	30.93	67.34
September	28 05	60.68	25.66	55.24	30.1	65.68
October	27 90	60.42	26.77	57.57	29.68	65.05
November	27 93	60.60	26.87	57.93	29.46	64.98
December			26.83	58.01	29.70	65.24
Year			27.55	59.79	30.67	67.06

The New York prices are per fine ounce; the London quotation is per standard ounce, 925 One.

The following list gives the average prices of metals per lb. in New York for 1897 and 1898:

MONTH.	COPPER.		TIN.		LEAD.		SPELTER.	
	1898.	1897.	1898.	1897.	1898.	1897.	1898.	1897.
January	10.99	11.75	13.87	13.44	3.65	3.04	3.96	3.91
February	11.28	11.92	14.08	13.59	3.71	3.28	4.14	4.02
March	11.98	1.80	14.38	13.43	3.72	3.41	4.25	4.12
April	12.14	11.48	14.60	13.34	3.63	3.32	4.26	4.13
May	12.00	11.03	14.52	13.44	3.64	3.26	4.27	4.21
June	11.89	11.11	15.22	13.77	3.82	3.33	4.77	4.24
July	11.63	11.11	15.60	13.89	3.95	3.72	4.66	4.32
August	11.89	11.16	16.23	13.80	4.00	3.84	4.58	4.26
September	12.31	11.30	16.03	13.98	3.99	4.30	4.67	4.18
October	12.41	11.13	17.42	13.88	3.78	4.00	4.98	4.17
November	12.86	10.88	18.20	13.79	3.70	3.76	5.29	4.03
December		10.78		13.71		3.70		3.89
Year		11.29		13.67		3.58		4.12

Of imports of specie at San Francisco by water in October, the value from British Columbia aggregated \$363,530,

COPPER.

Copper has been quiet throughout the month and prices have fluctuated very remarkably, although during the last week a better tendency has prevailed. The slowness of the market is, however, to be expected at this season of the year, but as producers have all they can do to fill contracts previously entered into they have not been anxious sellers, and certainly not at the much lower prices buyers anticipated. Our latest New York prices are 12 3/4c., 12 7/8c., and 13c. for Lake copper. Electrolytic in cakes, wirebars or ingots are quoted at 12 1/2 @ 12 5/8c.; cathodes, 12.40 @ 12.50c., and casting copper, 12 3/8 @ 12 1/2c.

LEAD.

Lead, as Slocan mine owners will be gratified to learn, has been in unprecedented demand for this restricted season of the year, and there is every appearance of a continued activity. The supplies of lead at hand not being considerable, prices

have consequently advanced, and our report from New York (Dec. 24th) quotes \$3.77¹/₈ to \$3.02¹/₂—a most satisfactory improvement. The St. Louis market is also strong, and the latest sales have been made on a basis of 3.62¹/₂c. for common metal, and 3.65c. for corroding lead.

SPELTER.

The demand continues good, but the market is not so brisk as during preceding months, yet prices have fallen very little. The latest New York quotations are 5.7¹/₂, and St. Louis, 4.92¹/₂.

MARKET GOSSIP FROM LONDON.

(From Our Own Correspondent).

THE B. C. MARKET during November has been idle and devoid of stability. Towards the end of the month a little more interest was displayed in it in connection with the preparations for the flotation of the Le Roi. The Whitaker-Wright group have been such a long time fulfilling their B. A. C. prospectus obligations to procure this mine for the Corporation that it would not surprise any one to find out that there is a defect in the title, or something else untoward at the last moment. I understood that the new company was to be out this evening (December 2) and called twice this afternoon to see some one in authority; but could not break through the cordon which surrounds Mr. Whitaker Wright, and which has been drawn even more tight since the big man's tussle with the *Pall Mall Gazette*. Although I plainly stated my mission and asked to see one of the group of gentlemen who act in a secretarial capacity to the City Llama, it was impossible to obtain a reply except through the medium of a clerk; so that I am unable to tell you more than that apparently another hitch has arisen, seeing that it has been given out this afternoon that the prospectus will not be published until next week. Sent you particulars of the concern some time ago. This week there has been the usual preliminary puffs in the press, a market has been started in the Stock Exchange in the shares which are to be of £5 each, and a premium has (somewhat prematurely it seems to me) been quoted of ¹/₂ per cent. or thereabouts. The Le Roi shares (200,000) are to be offered in the first instance to the shareholders in the London & Globe Co. and the B. A. C., and afterwards to the public. What the group mean by fixing the denomination of the shares at £5 it is difficult to decide; but it seems to me a ridiculously unwieldy figure, especially in view of the fact that the shares in ninety-nine out of a hundred mining companies are of the denomination of £1, and that a successful Westralian company, with which Mr. Wright is not entirely unacquainted, recently found it convenient to sub-divide its £1 shares into ten of 2s. each. In view of the dullness of the B. C. market I am not surprised to find that Mr. W. Wright hesitates to bring out the Le Roi. Prices have been drooping, and try as they may the group have not got either London & Globe's or B. A. C.'s back to par yet. At one time there was practically only 1s. difference between the two prices, which stood at about 12s. 6d.-13s. 6d., or say a discount of 37 per cent. in each case. I ought to mention that the Whitaker-Wright crowd have been so ill-advised as to market three of their properties at Rossland without, so far as I can gather, going through the preliminary trouble of advertising the prospectuses in the public press, even the *Colonial Goldfields Gazette*, so devoted to the Whitaker-Wright interests. These are the—

	Nominal.	Price.
Columbia, Kootenay	1 ¹ / ₈	1 ¹ / ₄
East Le Roi	3 ¹ / ₄	1
West Le Roi	3 ¹ / ₄	1

I sent you particulars as to capital, etc., some time ago. The above prices are purely nominal, and there is practically no business doing in the respective shares. When he gets the Le Roi moving—if he ever does—Mr. W. Wright will have his work cut out to "keep his market sweet" in Globes, B. A. C.s, Ivanhoes, Lake Views and Le Roi's. Even if he be a strong man, as some people assert—a financial Sandow—the strain must be so great as to disturb his serenity of mind very much, especially in times like those we are now passing through.

Hall Mines have been very flat as dividend time approaches, and the price is now no better than 7s. 6d. to 10s. for a share quoted only a couple of years ago at six times that price. The shares carried over at the last settlement at 11-16, and the continued weakness seems to indicate inside selling. The unfortunate Lillooet & Fraser River Co. holds its third annual general meeting on December 15. I wonder what Mr. Horne Payne will have to say this time. An important concern—the Canadian Pacific Exploration, Ltd., working at present chiefly in Ymir—holds its second annual meeting on the 21st,

and at this meeting it is probable that the chairman, Lord Powerscourt, will be enabled to announce the commencement of crushing on the Porto Rico. Several new companies connected with British Columbia, including the B. C. Electric Railway (of which Mr. Horne Payne is chairman), and the Chemainus Mining and Smelting Co., Ltd., have made appeals, but there has been no really high-class British Columbia proposition placed before the public for some time, and even the Vancouver smelter scheme seems to have fallen through. As Mr. Whitehead pointed out in the interview I had with him on your behalf, what we want are results. Look at the Klondike-Columbian-Pooley-Turner-Morris-Cotton group. I append a list of the properties connected with this group and current quotations, etc.:

	Present Price.	Representing a Discount of
Dawson City Trading	1 ¹ / ₄	75%
Klondyke & Col. Gold Fields	1 ¹ / ₄	75%
New Golden Twins	1 ¹ / ₈	87 ¹ / ₂ %

I never regarded this group seriously myself, and was in no way surprised to see the shares fall headlong, despite the fact that Mr. Turner saw fit to associate with the promoters responsible for these companies. One of the companies paid a dividend—the Klondyke & Col. Goldfields—paid from the funds obtained from floating a concern now quoted in the market at 87¹/₂ per cent. discount. The Dominion Mining, Development & Agency Co., one of the Duncan Drummond group, has issued a report and balance-sheet to 30th June, showing a "profit in shares on properties dealt with to date" of £30,552, and other items (including £3 of transfer fees, or representing merely 24 market deals in this company's shares since its incorporation), making the total of £32,226. In view of the fact that this company considers itself a dividend payer—in shares of subsidiary companies—it is rather significant that out of a total issued capital of £50,000 there was no less than £3,754 "calls" remaining unpaid at the date the balance sheet was prepared. There are too many of these promoting companies, and I notice that, despite the statements made at the meeting on Tuesday, the price has since declined; it will probably fall still further. Alaska Goldfields are regarded as a sound proposition, and ranking with the L. & B. C. Goldfields group, but the New Goldfields and the goldfields coteries have rather disappointed their friends, although I still believe that ultimately both will justify the support that has been extended to them. One of the Klondike companies—the Hydraulic—a concern which proposed to work in Alaskan territory, has proved a miserable fiasco, and is to be wound up forthwith. I am sorry to see one of the Tupper companies—the New Fraser River—quoted at only 1s. to 1s. 6d. a share, while B. C. "Devils" are also one of the weak spots at about 7s. 6d., having been about twelve months ago three or four times the present quotation. Fairviews, one of their offshoots, are priced at an even more lamentable discount, and if required to be sold hurriedly now would barely fetch ¹/₃ a share. Vancouver Syndicates are quoted nominal, ¹/₈ dis. to ¹/₈ prem. for the 10s. share, but no one troubles now to include in their lists their unfortunate progeny, the Galena Mines, which, according to my latest Rossland advices, were recently shut down. This concern, in addition to the errors of mismanagement, is a striking instance of the evils of over-capitalisation, it having been entered at the outset of its career to the extent of no less than £550,000. Luckily, very little of this sum was subscribed. A few more failures like this and the British public will indeed begin to look askance at British Columbia.

THE STOCK MARKET.

DURING the month of December mining stocks have been very active. Crow's Nest Pass Coal Co. shares have been in great demand, and one firm of brokers in Victoria has sold a large quantity of these shares during the month, and large orders were unfilled, as sellers would not accept prices bid. These shares, which were selling at \$15 two months ago, have now advanced to \$28.

In Coast mines stocks have been quiet with the exception of Van Anda, which has been selling freely at 4¹/₂ cents. It is reported that the ledge on the Cornell claim owned by the Van Anda Company, has widened out to 32 feet, with ore values of over \$30 per ton.

Golden Cache shares have fallen to 4¹/₂ cents.

In Nelson district Athabascas have been in good demand, and are now generally quoted at 43 cents. The result of the November clean-up was \$8,000. Dundees, Tamaracs and Fairmonts have also been in demand.

In the Slovan division the most active stock has been

Dardanelles. One firm in Victoria alone having sold 185,000 of these shares during the month, and a great many orders remained unfilled, owing to bids not being up to sellers' prices.

There has been a very fair demand for Noble Five shares, and several blocks of 5,000 and 10,000 shares have changed hands.

In the Rossland Camp Iron Mask have been in very good demand, the price has advanced to 90 cents. Numerous sales have been made at 85 cents. Deer Park has been active at 19 to 20; Evening Star at 5 to 5½; Iron Horse, 17½; Iron Colt, 10 to 11; Virginia, 40 to 45; Novelty at 4 cents, and several others.

In Camp McKinney the Cariboo has been in constant demand, with more buyers than sellers; Waterloo and Minnehaha have also been very active.

The business locally transacted in British Columbia mining stocks during the twelve months just closing shows a remarkable increase over previous years, and from the great developments going on in every section of the Province, brokers look forward to the year 1899 with great confidence.

THE ROSSLAND STOCK MARKET.

(Special Report and Quotations by Messrs. Dickinson & Orde.)

As noted in our last month's market report the market was slowly recovering from the depression caused by the slump in Monte Christo. The effect of this has almost passed away and though the opening of the mine in the early part of January would be warmly welcomed by the investing public yet the progress of the camp has of late been so great that the rehabilitation of the mine in question would not have that great result that might have been expected from the feeling engendered by the close down early last October. This is much to say, yet the facts are all pointing this way. The favorite stocks in the month of December were Iron Mask, Jumbo, White Bear, Gertrude, Noble Five, Canadian Gold Fields, Iron, Colt, Giant and Iron Horse. But these are all purely Rossland stocks. We have also dealt quite largely in those of the Republic, Lone Pine, Black Tail, and San Poil, taking the lead. In the Boundary country and west of this camp generally, Smuggler, Waterloo, Winnipeg, Brandon and Golden Crown, Cariboo (Camp McKinney), Old Ironsides and Knob

Hill and in the country east of Rossland, Athabasca, Salmo Consolidated and Tamarac have all found good support, which we think is in the great majority of instances very well merited. The recent strikes on the various British America corporation properties, notably the Annie, Josie, No. 1 and Nickel Plate, together with the extremely successful flotation of the Le Roi in London, England, have by practically securing the success of this large corporation, drawn the attention of capital widely towards the Kootenays. We feel confident that within the next few months a vast influx of capital will be seen in the camps centring around Rossland, to the no small benefit of the mining industries of the West. Nowhere has capital gone into the business without making a success. Not only the Le Roi but the Centre Star, the War Eagle with its monthly dividends and the various successful developments of the B. A. C. properties amply justify the truth of this statement. The British Columbia mines have come to stay, and the end of the year will witness a yet more marked increase of 1899 over 1898 than that year had over its predecessor:

Abe Lincoln	\$ 9	Athabasca	\$ 43
Commander	13	Brandon & G'n Cr'n ..	27
Deer Park	21	Cariboo (C. McKinn'y) ..	1 30
Eureka	10	Cariboo Hydraulic	1 10
Gertrude	12	Cayoosh Creek Mines ..	60
Giant	3	Dundee	30
Gopher	5	Dardanelles	11
Grand Prize	3	Goodenough	17
Iron Colt	11	Knob Hill	80
Iron Horse	18	London Hill	13
Jumbo	48	Nelson Poorman	30
Le Roi	8 50	Old Ironsides	1 00
Lily May	20	Reco	1 20
Monte Christo	11	Salmo Con.	20
Mugwump	5	Smuggler	20
Novelty	5	Slocan Star	1 25
Poorman	13	Sable Creek	5
Rossland Homestake ..	5	Tamarac (pooled)	9
Silver Bell	3	Tinhorn	12
St. Elmo	6	Two Friends	11
Victory Triumph	8	Van Anda	6
Virginia	40	Victoria Texada	10
War Eagle	2 95	Waterloo	9
White Bear	7	Winnipeg	20

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When writing to Advertisers kindly refer to the B.C. MINING RECORD.

Mining Stocks.

Prepared by A. W. More & Co., Mining Brokers, Victoria, B.C., Dec. 29, '98.

Company.	Capital.	Par Value.	Price.
TRAIL CREEK.			
Alberta	\$1,000,000	\$1	\$ 41½
Rig Three	3,500,000	1	17½
Bruce	1,000,000	1	10
Butte	1,000,000	1	02
Caledonia Con	1,000,000	1	5½
California	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	21
Enterprise	1,000,000	1	20
Evening Star	1,000,000	1	07
Georgia	1,000,000	1	10
Gertrude	500,000	1	11
Golden Drip	500,000	1	15
Gopher	1,000,000	1	05
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	17½
Iron Mask	500,000	1	90
I.X.L.	1,000,000	5	10
Iron Colt	1,000,000	1	52
Jumbo	500,000	1	11
Le Roi	£1,000,000	£5	£6
Lilly May	\$1,000,000	1	\$0 20
Mabel	1,000,000	1	15
Mayflower	1,000,000	1	10
Monita	750,000	1	19
Monte Cristo	2,500,000	1	11
Morning Star	1,000,000	1	04
Nest Egg-Firefly	1,000,000	1	10
Northern Belle	1,000,000	1	10
Novelty	1,000,000	1	05
Palo Alto	1,000,000	1	05
Phoenix	500,000	1	13
Poorman	500,000	1	13
R. E. Lee	2,000,000	1	5
Red Mountain View	1,000,000	1	3
Roseland, Red Mountain	1,000,000	1	13
St. Elmo	1,000,000	1	06
St. Paul	1,000,000	1	12½
Silverine	500,000	1	6
Silver Bell Con	500,000	1	25
Victory Triumph	1,000,000	1	9
Virginia	1,000,000	1	45
War Eagle Consolidated	2,000,000	1	3 00
West Le Roi	500,000	1	28
White Bear	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
Athabasca	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	25
Cumberland	500,000	10	—
Dundee	1,000,000	1	27
Dardanelles	1,000,000	1	11
Dellie	70,000	1	12
Eldon	1,000,000	1	05
Elken	1,000,000	1	07½
Elkhorn	1,000,000	1	10
Exchequer	1,000,000	1	05
Fern Gold	200,000	0 25	55
Goodenough	200,000	1	25
Gibson	200,000	1	17½
Grey Eagle	750,000	1	—
Hall Mines	£300,000	£1	7 00
Lerwick	\$1,300,000	\$1	20
London	1,300,000	1	25
Minnesota	1,000,000	1	25
Nelson-Poorman	250,000	0 25	30
Northern Light	250,000	1	16½
Noble Five Con	1,200,000	1	18
Ottawa and Ivanhoe	1,000,000	1	12½
Payne	2,500,000	2 50	—
Rambler Con	1,000,000	1	14
Reco	1,000,000	1	1 30
Slocan-Reciprocity	1,000,000	1	06
Slocan Star	500,000	1	50
Santa Marie	1,000,000	\$1	05
Silver Band	250,000	0 25	12½
Slocan Queen	1,000,000	1	10
Star	1,000,000	1	07
St. Keverne	1,000,000	1	03½
Sunshine	500,000	10	—
Tamarac	1,000,000	1	08
Two Friends	240,000	1	13
Washington	1,000,000	1	25
Wonderful	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	1	25
Van And	5,000,000	1	04½
Victoria-Texada	150,000	0 25	10
VANCOUVER ISLAND.			
Alberni Mountain Rose	250,000	1	09½
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 Ld	£100,000		
Cariboo Hydraulic Consolidated	\$5,000,000	1	85
Cariboo M. & D. Co.	300,000	1	25
Golden River Quesnelle	£350,000	£1	1 40
Horsety Hydraulic	\$200,000		
Horsety 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	20
Tin Horn	200,000	0 25	12
Winchester	250,000	0 25	13
BOUNDARY.			
Golden Crown	1,500,000	1	25
Knob Hill	1,500,000	1	1 00
Old Ironsides	1,000,000	1	1 00
CAMP MCKINNEY.			
Camp McKinney Development Co	1,000,000	1	13
Cariboo	1,250,000	1	1 30
Minnehaha	1,000,000	1	20
Waterloo	1,000,000	1	10
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	28 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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VANCOUVER, B.C.

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

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

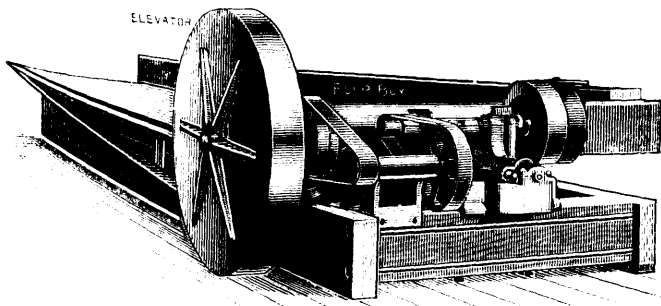
Among the especially valuable papers in this number are:—Calcium Carbide and Acetylene, by A. H. Cowles; The Manufacture of Hydraulic Cement in the United States, by F. H. Lewis; Manufacture of Sulphuric Acid without Lead Chambers, by George Lunge; Progress in Electrochemistry, by H. Borns; Manufacture of Clay Ballast, by H. F. Bain; By-product Coke Ovens, by W. H. Blauvelt; Briquette Manufacture, by P. K. 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 R. 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,
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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.

G. A. CARLETON,
General Agent.

JOHN IRVING,
Manager.

The Wilfley Ore Concentrator Syndicate, Limited.

32 OLD JEWRY, E.C. LONDON.

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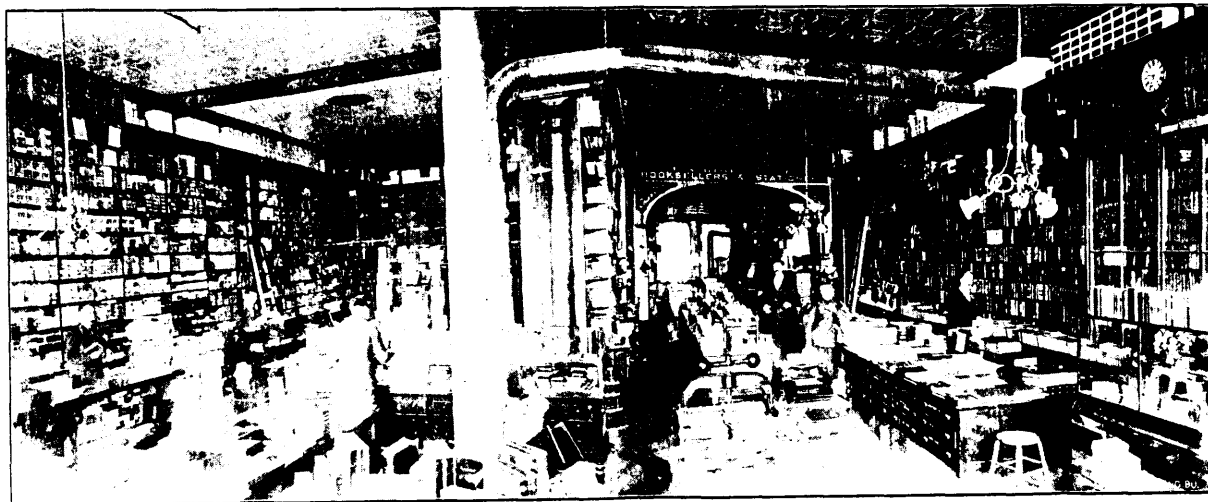
- 1st. It will successfully handle three or four times more material than any belt concentrator made, without any exceptions.
- 2nd. It will save more concentrates in proportion while so doing and will catch any float gold, amalgam or quicksilver which may escape from the mortars or plates.
- 3rd. It will make cleaner and more valuable concentrates, thus saving useless expense for transportation of valueless material, and also reducing the smelting charges.
- 4th. It requires little or no attention when once adjusted, and no expert is required either to adjust or run the machine.
- 5th. It will save much expense in power and room as compared with mills using other concentrators.
- 6th. It has no expensive belts to crack and wear out and no complicated machinery to keep in repair.
- 7th. It is the only sensible plan of concentration, as it successfully treats any kind of materials, which is not true of any style of belt machine.

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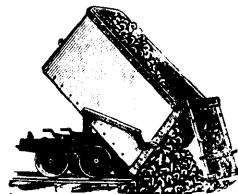
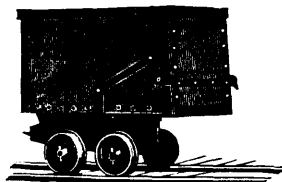
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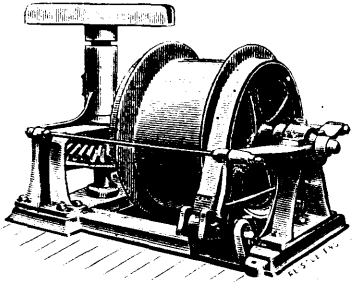
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SAFETY BRAKE HORSE HOISTER.

Patented December 11, 1888.
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A Feature not possessed by any other Horse Hoist.

These Hoisters are built in five sizes. Capacity of Machine No. 1, with one horse and single line, 800 pounds; 75 feet per minute. Price, complete with sheaves, \$90.00; Weight, 1,400 pounds. Send for Catalogues and discounts.

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PRESENT DAY METALLURGICAL ENGINEERING ON THE RAND

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ated Institute of Mining Engineers. . . With an Appendix on the
ECONOMICS OF THE TRANSVAAL GOLD MINING INDUSTRY, By HENNER
Jennings, Consulting Engineer to Messrs. Eckstein & Co.

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A HIGH TESTIMONIAL.

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Yours truly, W. T. WHITEHEAD, Manager.

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PROVINCE OF BRITISH COLUMBIA.

Gold, Silver, Lead, Copper, Coal, Coke, Oil, Iron, Mercury, Platinum, Etc.

The Mines of British Columbia Have Produced Over
\$100,000,000.

AMOUNT AND VALUE OF MATERIALS PRODUCED 1896 AND 1897.

	Customary Measures.	1896.		1897.	
		Quantity.	Value.	Quantity.	Value.
Gold Placer.....	Oz.....	27,201	\$ 544,026	25,676	\$ 513,520
“ Quartz.....	Oz.....	62,259	1,244,180	106,141	2,122,820
Silver.....	Oz.....	3,135,343	2,100,689	5,472,971	3,272,836
Copper.....	Lbs.....	3,818,556	190,926	5,325,180	266,258
Lead.....	Lbs.....	24,199,977	721,384	38,841,135	1,390,517
Coal.....	Tons.....	846,235	2,327,145	882,854	2,648,562
Coke.....	Tons.....	615	3,075	17,832	89,155
Other Materials.....			15,000		151,600
			\$7,146,425		\$10,455,268

Production for 1890, \$2,608,608 ; for 1896, \$7,146,425 ; for 1897, \$10,456,268.

GOLD.

Gold-bearing lodes are now being prospected in many parts of the province, and at Rossland magnificent ore-chutes of very profitable gold-copper ore are being mined and smelted, the Le Roi having paid to date \$725,000 in dividends, with a large and increasing amount of ore in sight as the workings attain greater depth, while systematic development on other properties is meeting with excellent results, mining having just fairly begun in this camp. Little doubt can be entertained that Rossland will become a heavy producer of gold, and that excellent properties now only await sufficient and abundant capital to become paying mines, to further aid in which the facilities for cheaper transportation and smelting are being now supplied. At Nelson and at Fairview, Camp McKinney, Greenwood, Central and other camps in the southern part of Yale, important work is being done on the quartz lodes there, several new mills being under erection.

Exploratory work has also been in progress in East Kootenay and in Lillooet, Alberni, and on the Gulf Islands and along the coast line of the Mainland, as well as in other parts of the province.

In Cariboo, several large undertakings, involving a large amount of capital, are at work exploring both modern and ancient river channels. The Cariboo Hydraulic Mining Co., on the Quesnelle River, proving, on development, to have in a channel of the latter kind, a great deposit of exceptional richness, while other parts of this district now offer every inducement to capital.

Into Cassiar, Omineca, and the great area to the north, as well as Cariboo, there now promises to be a great exodus of explorers, excited by rich diggings now being mined in the Yukon as on the Klondyke, to the north, and rivers and creeks long reported to be gold-bearing will now be made accessible, and well tested.

SILVER-LEAD.

Despite the drop in the price of silver, the Slovan mines are being much more extensively worked, while the shipments of high grade ore are constantly increasing. The production for 1897 has much exceeded that of 1896, as such mines as the Payne, Ruth, Whitewater and other mines increased their output.

At Nelson, the Silver King or Hall Mines are shipping constantly a large amount of silver-copper ore, and the Lardeau, Trout Lake, Illecillewaet districts, on further exploration, promise to become rich. In East Kootenay large bodies of silver-lead ore will be mined on completion of the railroads now under construction.

COPPER.

Copper is being produced to a limited extent at Rossland and Nelson, but the large deposits of at present low grade ore on the Boundary Creek district will be fully tested when the railroad, now almost assured, is constructed. Prospecting is being done at Kamloops, along the west coast of the Mainland and of Vancouver Island, as well as at many other points, and Texada is producing high grade bornite ore.

COAL AND COKE.

The large collieries on Vancouver Island are producing about a million tons of coal annually, and at Comox an excellent coke is now being produced, much of which is shipped to the inland smelters. The great deposits of coking coal in East Kootenay, at the Crow's Nest Pass, are now being opened, as the C.P.R. is now being built to the Columbia River to supply the great mining regions with cheap coal and coke.

SMELTERS AND RAILROADS.

The smelting industry is now beginning to assume large proportions, as preparations are being made to treat the ores of this Province within her own borders, a most important factor in the increasing prosperity of this country, entailing as it does, and will, the employment of much capital and many men. The extension of the railroad systems to different parts is now in progress, and the next few years will see many parts in which the prospects for good mining are excellent, made easy of access, while ores can be shipped with facility to the smelting centres, where the assembling of the various inter-fluxing ores will make possible the treatment of all British Columbia ores at home.

CAPITAL.

Capital can now find here excellent and many opportunities for investment, if proper business care and the experience of qualified men are utilized, as the values placed on mines and undeveloped properties have reached a reasonable basis.

MINERAL LANDS.

Mineral lands are open to location to any person over eighteen years of age, who has obtained a free miner's certificate, and perfect title to lode claims can be easily secured after \$500 worth of work has been done per claim. A great extent of territory has yet to be prospected.

YUKON GOLD FIELDS.

As the Klondyke and other gold fields in the Yukon in British territory are reached mostly via British Columbia, all supplies and outfits obtained at Victoria, Vancouver, Ashcroft, Kamloops, etc., can be taken in free of duty, which otherwise will have to be paid if not purchased in Canada.

For information, Reports, Bulletins, etc., address

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Are the Largest Coal Producers on the Pacific Coast.

NANAIMO COAL

(Used principally for Gas and Domestic purposes.)



SOUTHFIELD COAL

(Steam Fuel.)

Protection Island Coal & New Wellington Coal

(House and Steam Coal), are mined by this Company exclusively.

THE NANAIMO COAL gives a large percentage of gas, a high illuminating power, unequalled by any other bituminous coal in the world, and a superior quality of coke.

THE SOUTHFIELD COAL is now used by all the leading steamship lines on the Pacific.

THE NEW WELLINGTON COAL, which was introduced in 1890, has already become a favourite fuel for domestic purposes. It is a clean, hard coal, makes a bright and cheerful fire, and its lasting qualities make it the most economical fuel in the market.

THE PROTECTION ISLAND COAL is similar to the New Wellington Coal. This coal is raised from the submarine workings under the Gulf of Georgia and is shipped from wharves both at Protection Island and Nanaimo.

The several mines of the Company are connected with their wharves at Nanaimo, Departure Bay and Protection Island, where ships of the largest tonnage are loaded at all stages of the tide. Special despatch given to mail and ocean steamers.

SAMUEL L. ROBINS, Supt., Nanaimo, B.C.