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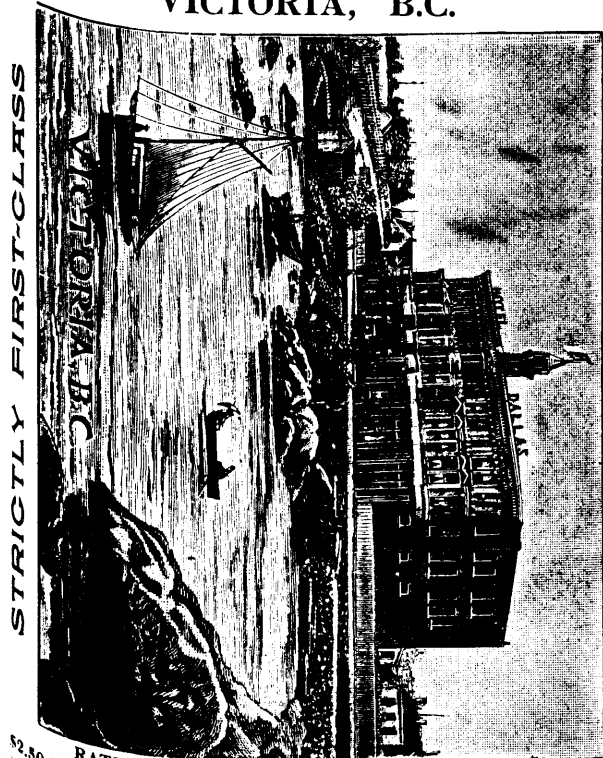
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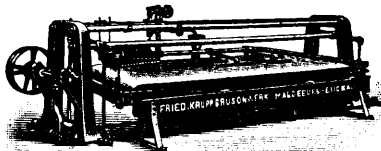
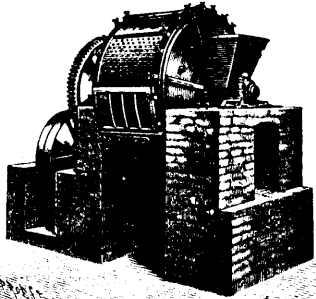
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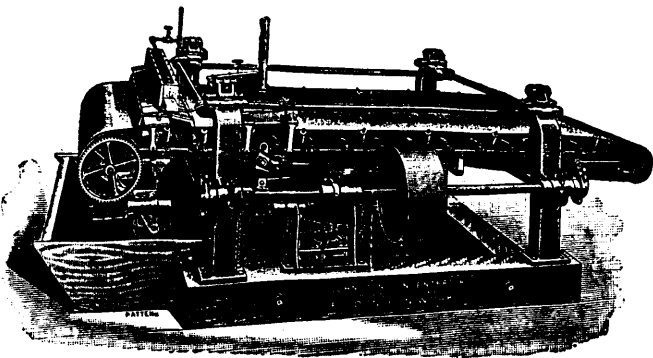
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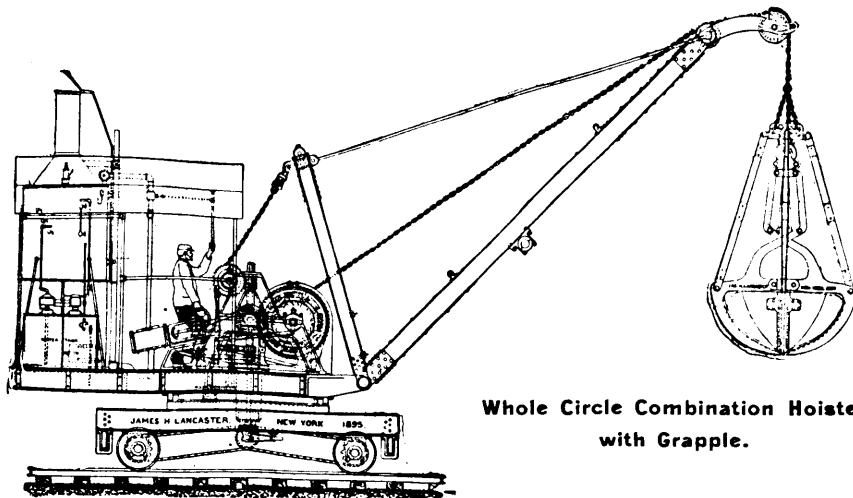
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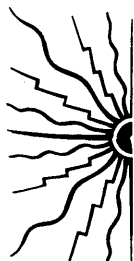
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Notice.

We have organized the following departments in connection with the B.C. MINING RECORD, with the view of forwarding the interests of our many readers, especially those living in the mining districts:

Enquiry Department.

In connection with the B.C. MINING RECORD we have established an "Enquiry Department" for the purpose of furnishing information about the mining resources and mining industries of British Columbia to parties outside the Province who may desire to obtain the same. For this we make no charge, but, on the contrary, will only be too glad to reply to any communications addressed to

ENQUIRY DEPARTMENT,
B.C. MINING RECORD,
Victoria, B.C., or
Vancouver, B.C.

Publishing Department.

Readers of the B.C. MINING RECORD wishing to obtain any work on mining, metallurgy, geology, assaying, etc., may procure the same by addressing

PUBLISHING DEPARTMENT,
B.C. MINING JOURNAL,
Victoria, B.C., or
Vancouver, B.C.

Purchasing Department.

For the accommodation of our readers and others living in the mining districts we have opened a "Purchasing Department" in connection with the B.C. MINING RECORD. In this we will act merely as a medium between buyer and seller—we keep no stock of goods on hand. But it frequently arises that people living in the mining districts require articles which they are unable to obtain near home, and which they do not know where to purchase. If these parties will write to us, we will either inform them where the articles can be had and the price of them or we will place their order with some respectable firm. As we have an intimate knowledge of the trade, not only in the Coast cities, but also in Eastern Canada, the United States and England, parties writing us may be assured that if any article they require can be obtained we will get it for them. Where parties know the price of the article they should enclose a post office order for the amount, and we will forward the article. In such cases the express, postage or freight should be added, as we charge no commission to those ordering through us.

We will be glad to furnish descriptive catalogues, price lists, etc., of machinery and supplies from the best houses in British Columbia, Eastern Canada, United States and England, and thus put mine owners in possession of the most varied and best information to be had in that direction.

Because we make no charge for this work, parties should not hesitate to write to us. Address either of the following offices:

PURCHASING DEPARTMENT, B.C. MINING RECORD, Vancouver, B.C.	PURCHASING DEPARTMENT, B.C. MINING RECORD, Victoria, B.C.
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Mining Papers on File.

The following papers are kept on file at the office of the B.C. MINING RECORD, Dallas Hotel, Victoria, for the use of visitors who may wish to consult their columns:

The Mining Journal.....	London, England
The Engineering and Mining Journal.....	New York
The Shareholder.....	London, England
Mining and Scientific Press.....	San Francisco, Cal
Canadian Electrical News.....	Toronto, Ont
The Commercial.....	Winnipeg, Man
Mine and Quarry.....	Chicago, Ill
Pacific Coast Bullion.....	Los Angeles, Cal
Canada Lumberman.....	Toronto, Ont
Monetary Times.....	" "
Western Mining World.....	Butte, Montana
Spokane Miner.....	Spokane, Wash
Inland Sentinel.....	Kamloops, B.C
The Golden Era.....	Golden, B.C
The Prospector.....	Rossland, B.C
The Ledge.....	New Denver, B.C
The Kootenaian.....	Kaslo, B.C
B.C. Mining Journal.....	Ashcroft, B.C
The Advance.....	Midway, B.C
The Miner.....	Nelson, B.C
The News.....	Vernon, B.C

Rossland Miner.....Rossland, B.C
 The Prospector.....Fort Steele, B.C
 The Province.....Victoria, B.C

Agents.

The following firms will receive subscriptions for the B.C. MINING RECORD, at \$1.00 per annum, and single copies may be had of them at 10 cents each :

GORDON & GOTCH, ST. BRIDE STREET.....LONDON, ENG
 Clarke & Stuart.....Vancouver, B.C
 Bailey Bros....." "
 Thompson Bros....." "
 E. Galloway, & Co....." "
 Hotel Vancouver News Stand....." "
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 M. Skojeski.....Sicamous, "
 A. Skojeski.....Slocan City, "
 Cann & Co.....Golden, "
 G. L. Eastabrooks.....New Denver, "
 Wm. M. Shaw & Co.....Spokane, Wash
 Shaw-Borden Co....." "
 E. A. Thomas & Co....." "
 J. W. Graham & Co....." "
 Hotel Tacoma.....Tacoma, "
 Windsor Hotel.....Montreal, Que
 K. T. Takahashi....." "

EDITORIAL NOTES.

WE are glad to note that Mr. Hewitt Bostock, the representative of Yale-Cariboo in the Dominion Parliament, called attention from his place in the House to the scandalous proceedings now going on in connection with the formation and floating of mining companies.

It was a manly, straightforward step to take, and one which will commend itself to the public generally in British Columbia.

Will the Government heed the note of warning sounded by Mr. Bostock? Will steps be taken without unnecessary delay to protect innocent investors in this Dominion against the sharks, i.e., unscrupulous company promoters and speculators

who are now plying a thriving trade throughout Canada and sucking the life blood of our mining industry.

This is a very important question to us in British Columbia and one which we cannot afford to see shelved.

We are aware that at a short session of Parliament it would be impossible to sift the matter thoroughly so as to prepare a bill calculated to meet all the requirements of the case, but a committee formed for the purpose would be able to investigate the whole subject and enable the Government to bring down an Act at the next session which would place the incorporation of mining companies on a proper footing.

At this time of writing we do not know whether such a committee has been formed. We trust, however, that it will be before Parliament rises.

In January last the *Mining Record* called attention to the unsatisfactory state of affairs in connection with the incorporation of mining companies and the methods of promoters. We then warned investors of the danger and have ever since kept the matter prominently before the public.

Since then the press of British Columbia has taken up the subject and in the strongest manner seconded our efforts. Let the newspapers of the province continue the good work and we care not who gets the credit for it so long as the result is satisfactory to all honest men having the welfare of our mining industry at heart.

By the time this issue of the *Record* is published the convention of mining men will have been held at Spokane, Wash., and doubtless the mining industry in British Columbia will have formed a very important part of the discussions at the meetings of the association.

As we are obliged to write in advance of that meeting we can only express the hope that the question of companies incorporated under the laws of the State of Washington and doing business in British Columbia will be fully considered, so that the views of men on the other side of the line on this important subject may be known.

It is a matter that should engage the attention of American mining men, for we can assure them that the people on this side of the boundary are determined to have the law so amended as to afford better protection to Canadian investors in such

companies than the laws of the State of Washington apparently afford.

In this issue of the *Record* we give a list of mining companies incorporated for the purpose of doing business in British Columbia. It is as complete as we could make it with the short time at our disposal and for the purpose we intended it suffices.

Of the incorporated millions as shown in that list how many thousands will ever find their way into the development of our mines? We fear the sum will be insignificant in proportion to the total amount representing the capital of the companies.

There is enough capital represented in that list of incorporated companies to make the mining industry of British Columbia one of the "wonders of the earth." But alas! it is only on paper at present. Later on a large part of this capitalization will be manipulated, not for the purpose of developing our mines, but for purely speculative purposes to take money from the pockets of innocent investors and place it in the pockets of stock gamblers.

We begin to think the saying of Abraham Lincoln, that "you can't fool the people all the time" is not true. It would seem that where mining stocks are concerned the people will continue to be fooled as long as the earth lasts.

This seems to be inexplicable, when as a matter of fact people with the same ordinary care that is used in other matters of business may invest their money with safety in mining enterprises. But the speculative mania is so strong in the breasts of most men where gold and silver are concerned that they will take risks which otherwise they would not.

It is the duty then of the government to protect the people as far as possible from being made victims of this mania by designing men.

Our mines in British Columbia are all right. They afford a safe and profitable investment for capital. Our mining men as a rule desire to act honourably and are against the fake schemes of pure speculators. They are in accord with this journal in saying that the mining industry of British Columbia must not be made the scapegoat of gamblers and speculators.

We have been informed that in some cases business men in our mining districts are using money

in mining speculations that ought to be employed in paying their bills. If this is the case, we can only say that it will lead to a loss of credit and ultimate disaster.

The first care of a merchant should be to see that his bills are met promptly and only when he is in a perfectly safe position in this respect should money be taken for investment in mines. The latter are all very well in their way, but they are not legal tender for goods bought or debts incurred.

The business men of the mining districts should see to it that no such stain is allowed to rest on the general credit of the country. If the accusation is not true let it be plainly shown, and if there are a few transgressors let them be frowned down.

Some complaint has been made that the Provincial Government are withholding particulars of the revenue being derived from the mining districts. This information cannot long be withheld, because it will appear in the returns of the Provincial Parliament. We do not then see that there is much cause for the complaint. In fact we think that the publication of revenue receipts by piecemeal would tend to misleading impressions.

One thing, however, we may say that the Provincial Government, knowing as they must do the amount of revenue being received from our mining districts, should be prepared to spend liberally in proportion to the amount contributed in opening up trails, roads, etc., and otherwise developing our mining regions.

This will be the safe course for them to pursue not only in the interests of the country but in their own interests, because they cannot shut their eyes to the fact that the rapidly increasing population of the mining districts is destined to become in the near future an important factor in determining how the province shall be governed.

It is satisfactory to note that the present Government at Ottawa are taking an interest in the welfare of the Kootenay and other mining districts and that a commission of enquiry into the requirements of the country is to be appointed. The opening up of the Lardeau-Duncan River, a new franchise act which will result in giving fair play to our mining population, a better postal service and the creation of much needed ports of entry are a few of the reforms about to be effected.

We have in Mr. Bostock, our representative, an ardent champion who by his zeal and untiring activity has succeeded in stirring up this much de-

sired interest in our affairs at Ottawa. In the short time that he has represented Yale-Cariboo he has shown that the needs of his constituency are his first care, and that he is not likely to take "No" for an answer from the Government where he is urging a just demand.

That his representations in regard to the Crow's Nest Pass Railway have had effect we judge from the fact that the almost immediate construction of this much needed line may be regarded as certain.

It cannot be built too soon, for on it to a large extent depends the development and expansion of our mining industry. When that road is completed it will determine where the great smelting point of the Kootenay is to be located.

In the meantime the Trail and Nelson smelters are being enlarged and improved. The Pilot Bay smelter is also likely to be in full operation shortly and smelting plants at other points are being talked of.

It is more than likely that Vancouver will have a large smelter in a few months. New Westminster has been agitating for one for some time past, and Victoria, in order to keep pace with the wants of the Island, will before another season be obliged to follow in the footsteps of the other coast cities.

The season of 1896 has been one largely of development; that of 1897 will be one of production. Development will go on apace with the advent of railways, and where the lack of transportation facilities is hindering the shipment of ore there will be next season great activity in that line.

Placer as well as quartz mining will be in full swing next year and the amount of gold and silver that will be extracted from our great deposits of the precious metals will run into the tens of millions.

So everything points to British Columbia being within the next year or so the "great treasure house of the Dominion."

We look forward to a most interesting report from Mr. Carlyle, the Provincial Mineralogist, on the Slocan district. His report on Trail Creek has given universal satisfaction.

Some of the local mining papers soon after the appointment of Mr. Carlyle, took occasion to make sneering remarks in regard to the usefulness of the office, complaining at the same time that it was located in Victoria.

In answer to those unjust criticisms the Mining Record in its May issue took occasion to say the following:

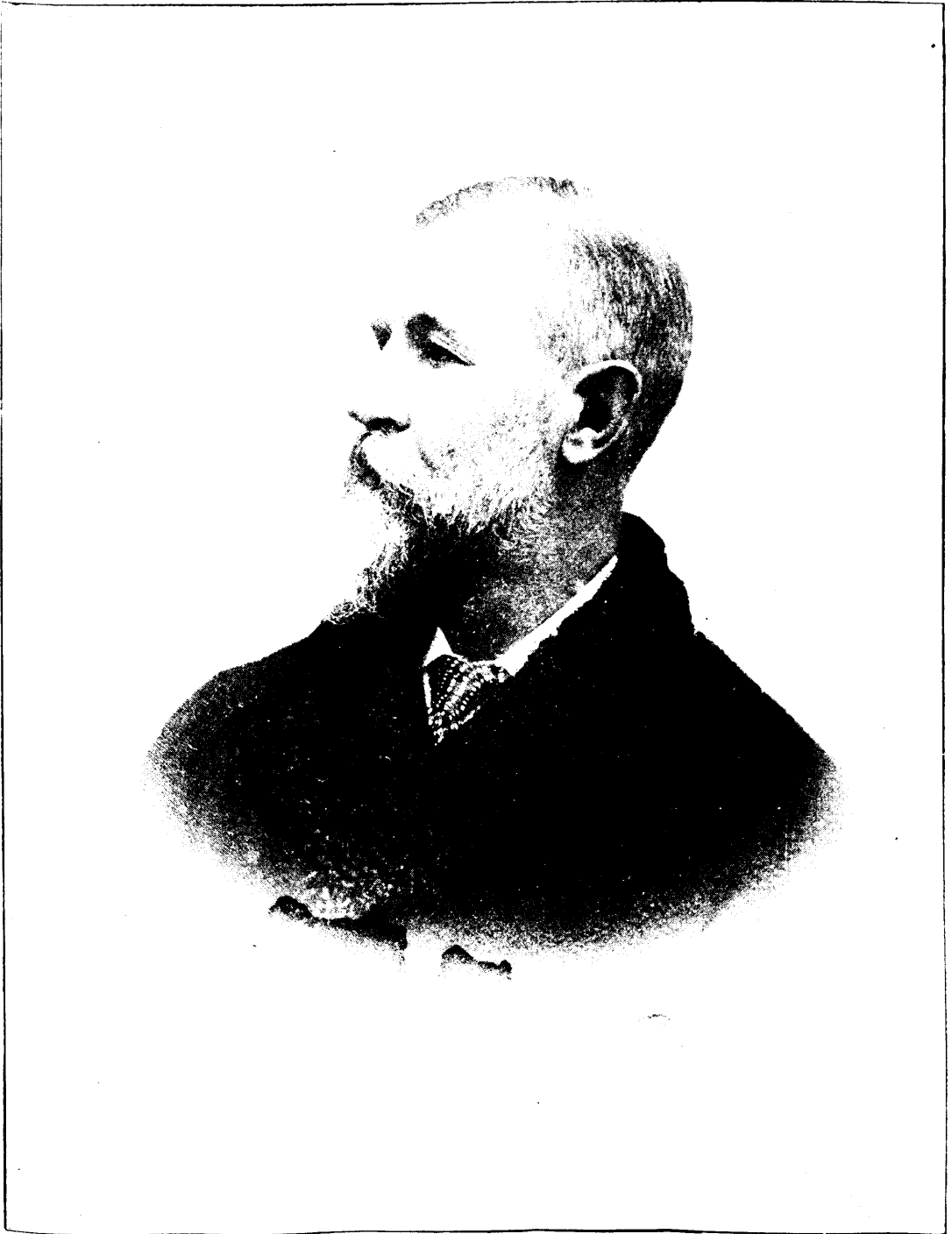
"We do not see the force of the argument put forward. Mr. Carlyle is in charge of the Mining Bureau established by the Government, and in that capacity we do not well see how his headquarters could be anywhere but in Victoria. This, however, does not prevent Mr. Carlyle's services from being extended to all parts of the Province, which, indeed, as we understand it, they are to be. Mr. Carlyle's presence in the Province, and the services he can render to mining is, we consider, of great importance to that industry and there is no use in attempting to belittle them. Mr. Carlyle will soon be going up country, and why not wait and see what his work throughout the Province will embrace and to what extent his usefulness will result before criticising? The great mining states of Colorado and California have the work of their bureaus centering at Denver and San Francisco, and in such central places, from which all parts are reached, has proven best to concentrate this work. Wait until the Provincial Mineralogist has had an opportunity of becoming better acquainted throughout the Province, and in a few weeks, we believe, he leaves for the Kootenay, where he will spend three or four months."

We now publish the following clipped from the *Kootenaiian* of September 12th, to show the change of sentiment amongst our contemporaries regarding Mr. Carlyle:

"Newspapers and individuals have the warmest praise for the work of Provincial Mineralogist Carlyle, who has just published his report on the Trail Creek district. The report shows that Mr. Carlyle does not belong to the yellow-legged variety of experts, and that he understands his business. There is no use denying that there has been some prejudice against Mr. Carlyle here in Kootenay, largely, we think, because of an impression which prevailed, that he was simply a part of the expensive government machine, and that his title and office meant nothing but a place on the salary roll. But now that Kootenay has seen something of the man and his work and realizes the important bearing which it will have on the mining industry, there is a disposition to seek Mr. Carlyle's pardon. Mr. Carlyle is all right and it is a matter of regret that he deferred his Kootenay visit so long. He is now in the Slocan and will report on this district soon. The result of his investigations in the form of his report, will be looked forward to with great pleasure."

All of which goes to show that the Mining Record was not wrong in its estimate of the Provincial Mineralogist.

One thing is certain, the unbiased reports of Mr. Carlyle will set at rest the doubts of skeptics abroad as to the great wealth of mineral treasure possessed by British Columbia, and this from more points than one is a decided gain.



HON. COL. BAKER. MINISTER OF MINES.

Co-operative Mining.

IN my last I spoke of the application in some of the details of the general principle of co-operation to mining. Regarding the practicability of the system in such a district as the Slocan, which has been described as a "poor man's camp," because of the ease with which development may take place through labour alone, there is not any doubt, not only in the opinion of the miners themselves, but its success on a large scale has been amply demonstrated. I do not mean to say that co-operative mining has been carried into effect on the exact lines advocated in previous articles, but mines have been and are being developed by individual efforts without the aid of outside capital, which is practically all that is necessary to prove.

To come to Trail Creek district, where the conditions are not so favourable to development there has been striking evidence furnished by one of the Rosland papers of the practicability of co-operation. In an editorial, not, however, dealing with this aspect of the question, but with the present obvious tendency to over-capitalization of mining companies, it was stated that between \$25,000 and \$30,000 in cash had been found ample and was all that was necessary in the majority of cases to prove the value of the mines in the vicinity of Rosland, after which pay ore is struck sufficient, under competent management, to carry on operations. That statement is significant as coming from the very centre of the greatest mining activity and has not, so far as I have seen, been contradicted or disputed. Anything more fatal to the contention of those who advocate the introduction of outside capital in large sums for the development of our mines could hardly be imagined. It is entirely in accord, too, with the methods of mining companies, stocked from \$250,000 to \$1,000,000, the treasury stock of which is sold from five cents to twenty-five cents per dollar share to acquire only working capital and realizes anything from \$10,000 to \$50,000 (not \$500,000 stated in last issue).

It is, therefore both practicable and possible even in Trail Creek district for a number of working miners and a few skilled assistants, with limited means at their disposal, to take any of the ordinary prospects now figuring in the numerous mining prospectuses of companies already floated or being floated, and by their unaided efforts, or largely so, to change them into paying mines of which they would be shareholders, directors and managers and profit sharers. Not more than one working miner for each person that subscribes for shares in these companies at present would be necessary, and in numerous instances not so many. With an engineer and a skilled mine manager associated with them they could tunnel, timber the mines, build trails, ore bins, etc., etc., the same as they do when their labour is paid for by others. The incentive to do earnest, honest and intelligent work, when each was, so to speak, coining out his own fortune, would not, to say the least, be less than where his own interest in the work was the daily wage.

It will be readily admitted that labour is not the only requisite, but it is nevertheless undeniable that labour is the most important factor, and is usually in the ratio, to be safe, of two-thirds to

one-third, and this time particularly in the development stages. There are besides labour, the food, clothing and housing of the workmen, the cost of implements and explosives, timber, lumber, hardware, freightage and whatnot to consider. I hope in a future issue to go into these things in detail and show their actual relative cost in developing the average mine as compared with the cost of labour, but for the present I desire to show how by carrying out legitimately the ideas of co-operation a few of the many methods by which the accessories referred to, which require cash, may be obtained independent of the usual capitalistic methods.

Co-operation as intended to be applied in these articles does not refer solely to the co-operation of labour or labouring men, but where necessary the co-operation of labour and capital in due proportions, and it is by the latter method that these two, usually regarded as distinct, and too often as antagonistic factors, may be brought into perfect harmony.

For the purpose of working out the problem many working miners may be regarded to some extent as capitalists as well as labourers, because it would not be difficult to find in any mining camp from thirty to fifty miners who possess from \$100 to \$200 apiece averaging up their "piles," and that as a nucleus, say \$150 each for forty men or \$6,000, would be an ample cash capital for development work. In such an instance the co-operation would be complete and the problem easy of solution, provided always, of course, they could be induced to pool their labour and their resources.

But granting the risk as too great for labouring men, even if the other conditions were right, there are several other methods in which labour alone would be paid into the mine on the part of miners.

Many of our best business men in this province "dabble" in mines, and have one to half a dozen or more of claims upon which they do assessment and some development work, representing in the aggregate a tidy little sum per annum. Many of them have spent thousands in this way. They do not go into it seriously, but for the speculation that is in it. It is their little "gamble" as they term it. In the interior, merchants, nearly all of them, in addition to this "grub stake" prospectors for an interest in claims or take interests in claims for goods advanced. More or less they all do it. It is, I have said, a form of speculation. If the particular district or group of claims of which it forms a part pans out well they stand to make; if not, well, it is a "gamble" anyway, and like the throw of the dice, the next man may be more lucky. "Grub-staking" is the traditional and popular form of co-operation in mining districts. Logically, however, there is no reason why co-operation should stop there. Having secured a good claim in which the indications are favourable, why not extend the principle of co-operation to the development? Why not "grub-stake" the miners as well? If one did not feel equal to the strain, two, three or half a dozen merchants could combine, and, if successful, and the prospects would be ten to one in favour of co-operating with the miner, the profits of

the mine when operated or sold would render the development of other claims on a similar plan possible and still more profitable. The principle involved is simply putting so much cash against so much labour for which stock in each instance is issued at par for its face value. That is business, not a "gamble." "Grub-staking" a prospector is a doubtful investment always. He, even if honest, may find nothing; he may be incapable, because injured or be lost. If dishonest, you are at his mercy to cheat you in half a dozen different ways, without detection. In the case of the working miner developing the mine by honesty and industry alone can he turn his labour into account. With you he is interested in achieving the best results.

And, talking of capitalization of mining companies, the capital should be no more than what is actually invested and what is necessary to work it. A bank note for a dollar should represent a real dollar, no more or less, in gold or silver, and that dollar should possess as nearly as possible a dollar's worth of gold or silver as the case may be. That is the meaning of "sound money," or rather should be the meaning in politics. In other words, it should represent the measure of labour necessary to produce a dollar's value. All forms of capitalization, whether in bank notes, or in company's stock, should be based on this "sound money" basis. By the co-operative method of mining, stocks would be nothing more or less than the certificate of so much labour performed. The market value would depend upon the profits accruing from that labour.

I have referred to the merchant as one class of capitalist who should consider the advantages of the co-operative plan, over the present hap-hazard ventures which tempt him and by which experience has shown that nine-tenths of such investments are lost. Similar remarks, however, apply to the many men of private means, who are "dabbling" in mines and whose experience in the past has not been more encouraging.

Then there is the regular mining syndicate formed to explore, develop, buy, operate, etc. If, instead of endeavouring as they do, which of course, is both legitimate and proper, to acquire rights out and out, secure consolidations, etc., etc., and by which methods they secure the appellation of monopolists, as well as the enmity of labour organizations who regard such methods as "hogging" it, they were to work with the miners, they supplying the "sinews of war" and the latter the labour a different state of affairs would be brought about in the industrial world and I believe in the long run their profits would not be less, and certainly their relations with the labouring element would be more satisfactory. Or if it is not possible to direct present capitalistic organizations, formed as they are, into this channel of operations, it is at least practicable and possible to organize capital for the purpose of co-operating with miners on the lines suggested for the merchants. In view of the social and industrial benefits to accrue from the working people of this country sharing in the profits of mining, which is the greatest of our resources, and keeping our wealth so far as possible at home, it is well worth the experiment.

The Toronto Globe on Co-operative Mining.

CO-OPERATIVE commercial and industrial concerns have not achieved the wide measure of success in the western continent that has marked their operations in Britain. The workers in the West are lacking in the necessary cohesion, a condition which may be due in a measure to the greater opportunities for individual advancement and advantageous changes of occupation. Co-operation, like trade combination, seems to require a process of education through several generations before the necessary confidence and perseverance can be secured. A writer in the *British Columbia Mining Record* makes a strong plea for co-operative work in the development of the newly-discovered gold districts, urging on public grounds the advantages of working on local rather than borrowed capital. With regard to the feeling of a community of interests, essential to any system of co-operation, perhaps it would be less in evidence in a mining town than anywhere else in the industrial world. With every man a prospective millionaire, cherishing the hope of a rich strike in the immediate future, there is a universal aversion toward letting anyone else in "on the ground floor." But no doubt if the chances of success were seen to lie in the direction of co-operation the pronounced individualism of the business could be overcome. The need of capital is, of course, determined by the amount of work necessary before actual self-sustaining returns can be secured. Many mining properties require the expenditure of, say, \$30,000 or \$40,000 before returns from the work need be expected. That would represent about one year's labour by thirty or forty men. It would be a matter of extreme difficulty to find thirty or forty working miners having sufficient mutual confidence and business capacity to engage in co-operative mining and sufficient money to maintain themselves one year without available returns from their work. If such a combination could be secured it would mean co-operation in the capital as well as the labour of the workingmen. The difficulty would be increased by the possibility, inseparable from all mining undertakings, of the absolute loss of all the capital or labour expended. When investors expend \$30,000 or \$40,000 developing a mine they run a chance of losing it, and a combination of workingmen must run the same risk with their labour and capital. The function of capital in production is to make the products of the labourer immediately available for his ordinary use. Capital is in consequence essential in mining in proportion to the amount of work necessary before actual returns are obtained. The writer in the *Mining Record* says that there are many properties in British Columbia where from ten to fifty men without other capital than their labour might have owned mines and made them pay from the start. From such conditions there must be room for many gradations to mines like the Anaconda, requiring a million dollars and miles of tunnelling and shafting to profitably exploit. It is suggested that where capital is required slightly in excess of that possessed by the co-operative workers a small amount of stock could be sold in the usual way, while the workmen would become shareholders in proportion to the worth of the labour contributed above the wages.

drawn. At present the "assessment work" required by the Provincial Government before giving a title to a claim is in many cases thrown away. The owners dig a few holes every year, the object being to comply with the law rather than to develop the mine. They expect returns, not from the development work, but from the sale of the claim to some one with capital. With co-operation there would be less waste labour, and, although working miners would lose the remote chance of a fortune through a successful find, they would have a better chance of participating in the large profits of a paying mine. The writer shows the advantages of co-operative work by the census returns dealing with the Mormon colony in Utah. An average population of 112,000 has in forty years spent \$542,000,000 on improvements. They own ninety-five per cent. of the land on which they live, and are absolutely free from debt. During the past forty years they have realized \$500 annually for each working member of the colony, in addition to the cost of family maintenance. The advantages of co-operation do not need proof. Its adoption must minimize the waste in any enterprise. But it will not make amends for mismanagement or a lack of business ability. Of all lines of productive work, mining, with its inevitable uncertainties, seems to present the greatest obstacles to the successful application of the principle. If it can be adopted and carried to a successful issue it will mean the inauguration of a new era in mining development.

The foregoing is a very fair presentment of the difficulties which are supposed to be in the way of inaugurating a system of co-operative mining, and it displays as well an honest appreciation of the advantages to the community on the assumption that it could be brought about. I cannot, therefore, find serious fault with the temper of the remarks as a whole.

The editor of the *Globe*, however, is no doubt influenced by an aspect of mining with which eastern people are familiar, and that is the element of speculation, which is most prominent in the minds of those farthest removed from the actual mining operations. A perusal of mining company prospectuses, and the familiar appearance of six and seven figures in which the capitalization is represented, naturally leads to the impression that great sums of money are necessary to the development and operation of mines in every case; and that, moreover, working miners are averse through business unfitness and inclination to co-operate on the lines suggested in my two previous articles in the *Mining Record*.

Both ideas are, to a large extent, erroneous. When in the great majority of cases non-assessable treasury stock, which is reserved for development, is sold at from five to ten cents per share it is easy to estimate how very little after all goes to actual mining operations and that little largely to supply labour. From one-half to nine-tenths of the stock is solely a speculative margin and does not represent actual capital at all. I mean capital invested in the mine itself, to pay a dividend upon which its resources are unduly taxed.

One million dollars is a very large capitalization for any mine to start with. One-tenth of that, which is all that is supposed to be paid in it in the

ordinary way of financing companies, gives \$100,000, which, if it be all that is required to develop and operate the mine, is the real capital. Now, a profit that would pay a dividend of ten per cent. on the nominal capital of \$1,000,000 would give a dividend on the real capital, \$100,000, of one hundred per cent. There is nothing which could show more plainly the *business*, not to speak of the sentimental reasons for operating mines on an honest, unwatered, dollar-for-dollar basis, or the splendid returns there would be to labour in the co-operative form.

Again, the *Globe* is mistaken as to the attitude of the mining community. If he will go into the Slocan district, in particular, he will find the sentiment of the miners opposed, and decidedly so, to the importation of foreign capital, and, clearly and unmistakably in favour of doing the work themselves. They will tell him to his face that they can get along with greater advantage to the individual miner and to the community without it. The fact is incontrovertible that the biggest and best paying mine in British Columbia paid for itself from the start, and there are a number of other mines working on the same lines in that district. He will find, too, that the miners are about as clear-headed and business-like a lot of men as he ever met. It is a mistake to underrate either their intelligence or their capacity.

Of course the conditions in the Slocan are more favourable to development than in Trail, but it is a question rather of degree than otherwise. Investigation will show that the demand for capital comes not so much from the miners as from those who are not miners. The danger to be feared is not in frightening away capital, but in causing such an inflow as to (first) demoralize industry by creating an unhealthy inflation, and (second) to place the control of the industry in the hands of outside capitalists by which the profits of the industry go out of the country in the form of dividends and interest.

The *Globe*, as will be observed, sees another difficulty, which is more sentimental than real, and that is in the risk involved to labouring men in putting up their labour, which is their all, for a term of months or a year on the prospects of mines. A familiarity with the ways of mining life would dispel fears as to risks and uncertainty in a mining camp as both groundless and unnecessary. Working miners earn little more than a livelihood in any case, and out of the thousands of prospectors who spend years of their life in the riskiest and most uncertain, and an extremely toilsome pursuit of wealth, about one out of fifty makes a "strike." The chances for co-operation on the basis I have suggested are about ten to one in favour of success as compared with the traditional ways of mining as at present followed.

It will be readily admitted, as intimated by the *Globe*, that "a process of education" is required, but if half the effort and money had been spent by the press, private individuals, corporate institutions and governments in educating the miner and labourer to the advantages of co-operation that is spent in educating and inducing the capitalist to invest, it would have been possible long ago. We have been years in British Columbia endeavouring to bring about by strenuous appeals to moneyed

men what is now beginning to take place—a boom in mining. We have hitherto done absolutely *nothing* to teach the lesson of self-help and reliance in developing our own resources by the method proposed.

The Omineca District.

WITH the revival of gold mining in the Cariboo placer district, consequent upon the introduction of modern hydraulic machinery within the last few years, the attention of both British and American mining men is being directed to the Omineca placer district. The Omineca, though known as a gold producing and a wealthy district since the days of "Old Cariboo" in 1858, when the first general rush to the Cariboo gold fields took place, has always remained more or less of a *terra incognita*, save to an adventurous few who each year have found their way in there and generally returned with a very fair reward for the long, toilsome journey, and the hardships and exposure incident upon it. Such work as was done there, which mainly centered about the Germenson Creek diggings, was, however, sufficient to demonstrate the richness of the country. The difficulty of access, the uncertainty of food supplies and the great expense of transportation, have, in spite of its richness, almost totally prevented all attempts at operation on anything like an extensive scale.

The Omineca River, from which the district takes its name, is a tributary of Peace River, and is situated a little south of the 56th parallel of north latitude and for the main part of its course west to east, lies between 124 and 126 degrees longitude west from Greenwich. Rising in a small lake in the Omineca Mountains, a little north of the 56th parallel, it flows south-east, then east along the southern base of the Cariboo range, which at this point trends to the north-west, then flowing almost due north through the same course it joins the Peace River on the northeastern flank.

From Ashcroft, the nearest railway point on the line of the Canadian Pacific Railway, the Germenson Creek diggings are distant by road and trail, *via* Quesnelle, about 570 miles. The Cariboo wagon road—the old "tote road" as it is known to British Columbians—furnishes fairly good travelling through the Cariboo district from Ashcroft to Quesnelle from which point the route is by trail through a thickly wooded and mountainous country, broken with open prairie at infrequent intervals, *via* Fort St. James, a Hudson's Bay post, and Stuart Lake. The disadvantage of the route lies in the fact that much water has to be crossed. The alternative route, and one which is recommended, is by steamer from Victoria on Vancouver Island, to the mouth of the Naas River, 500 miles, thence by trail to Hazelton on the Skeena above Port Essington, thence across the Babine Mountains, Tatla Lake and the Omineca Mountains to the diggings. The distance from the Naas to Hazelton by trail is 200 miles, and thence to Germenson Creek 200 miles more, making a total distance from Victoria of about 900 miles.

The Omineca Prospecting and Development Company with head offices in Victoria, which has acquired extensive claims and water rights, sent a representative, Captain Black, to the Omineca last March. Leaving Victoria on March 2nd last he arrived at the Naas River five days later. From

the Naas to Hazelton the journey on snow shoes occupied ten days, and from Hazelton to the diggings ten days more, a total of about twenty-five days. To quote the *Province*, of Victoria: Capt. Black spent several days in the district making surveys and doing what prospecting he could, and then started back for the coast. Leaving the diggings he took a straight line across the Omineca Mountains, avoiding the river altogether, thus saving three days. The snow was rapidly becoming soft and walking was extremely difficult. At Tom's Creek there was very little sign of spring, but after crossing the divide the change was apparent, and the snow shoes would break through at every step.

Arriving at Hazelton, Capt. Black secured a canoe and came down the river to Port Essington, waiting here a couple of weeks for the steamer, arriving at Victoria on the 22nd of May. He brought back some excellent specimens, nuggets and dust, also native copper, silver, and galena, which latter assayed ninety ounces of silver to the ton. During the return trip several miners were met going in. The Omineca is no place for a poor man, but no better place exists for men with capital. A trail is badly needed, and the distance could be greatly lessened and access to and from rendered comparatively easy. Navigation to Hazelton *via* the Skeena is fairly safe, and a trifling expenditure on the river would vastly improve it. From Hazelton a trail could be selected which would place the diggings within less than 200 miles from navigation. An Ottawa company with large capital is already on the way, while many prospectors from Seattle and other places are bound in.

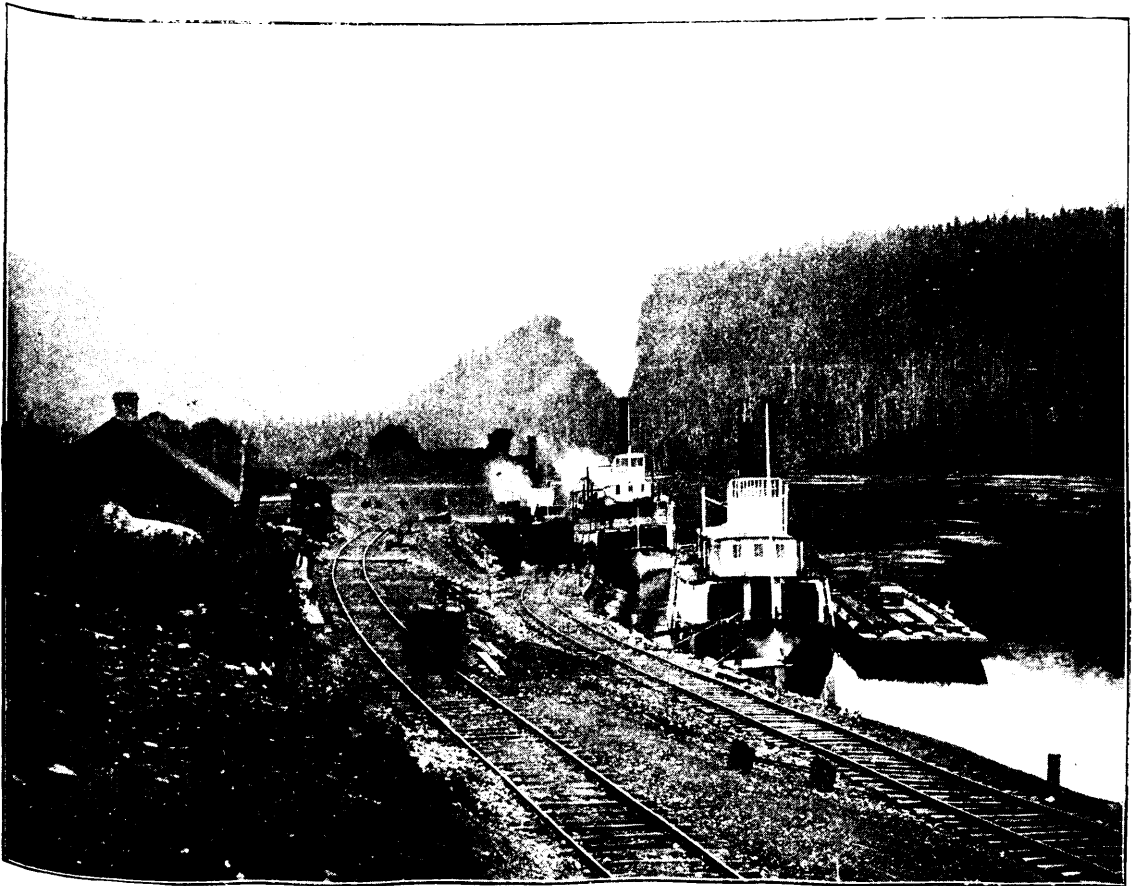
Presuming that the coast route by the Skeena River and Hazelton is opened up, the Omineca will then be comparatively easy of access, and in that case there would be open for operation a mining district of which the prediction has often been made, and it would some day when access should be rendered reasonably convenient, fully rival and perhaps even surpass, the famed Cariboo fields in richness.—*Mine, Quarry and Metallurgical News, Chicago, Ill.*

The British Columbia Smelting and Refining Co.

THE officers of this smelter, which is located on Trail Creek, B.C., are: President, F. A. Heinze; commercial manager, J. F. Lansing; superintendent, E. H. Wedekind; general superintendent of Mr. Heinze's smelters at Butte and Trail, H. C. Bellinger. On securing the large contracts for ore from the Le Roi mines, Mr. Heinze secured the present excellent smelter site, on the bluff overlooking the Columbia, at the mouth of Trail Creek, where has sprung up the town of Trail. This smelter has been erected with great rapidity in spite of the inclement winter weather and great difficulties in securing supplies of building material and importing the plant and machinery; but although work was begun October 10th, 1895, the first furnace was fired up in February, 1896, and now five furnaces are in full operation, with further extensive and important additions being rapidly pushed to completion, additions that should greatly improve present conditions and treble the capacity of the works. Besides that with the Le Roi, contracts have been made with the War Eagle, Iron Mask and Crown Point. Mr. Heinze and his associates are proving their ability for



LE ROY MINE. SHIPPING ORE.



SCENE AT LANDING, ROBSON, B.C.

prompt, decisive action, not only in the construction of their smelting works and the tramway, but in the inception and inauguration of other extensive enterprises that mean much for the improvement and advance of the mining operations of this district.

As was to be expected the ores from this new camp have offered at first some considerable difficulty in treatment, especially as the class of ore now mined is much more siliceous, and contains less copper than the early tests indicated, but now every furnace is working with much less trouble and up to their capacity, especially since the floods have subsided permitting the more regular supply of coal, and the smelter is now the scene of activity where, ten months ago were only sand bluffs of the Columbia.

The smelter now comprises: The sampling mill, daily capacity, 150 to 200 tons; bin capacity in the mill, 750 tons. The ore passing through a 12x22 inch Blake crusher, is run through a trommel, whence the fines go to a Constant cylindrical sampler, and the over-size to a 9x15 crusher and rolls, and then to the sampler and into the bins, until the lot of ore is settled, from whence it goes to the calcines or the bins from which it can be drawn in cars to the blast furnace. This sampler is inadequate for the amount of ore offered, and is now being enlarged so as to handle 350 to 400 tons per twenty-four hours.

In the roast house is one O'Hara automatic calcining furnace, with foundations laid for a second. This furnace is 120 feet long over all, and has two 90-foot hearths, one above the other, nine feet wide. One travelling chain passes along the centre of the hearths, carrying six plows and six trolleys or chain carriages, at the rate of about 25 to 35 feet per minute, and as yet very little repairs have been required, the chain, plows, and trolleys showing but little sign of corrosion in the furnace. Fifty tons of ore crushed to pass a half-inch ring are roasted per day, with a loss of 70 per cent. of sulphur contents, the ore taking twelve to fourteen hours to pass through the furnaces in which ten fire places fired with wood supply the heat. Besides this furnace there are in the furnace room six circular calciners, such as are used in Butte, placed above the reverberatories, the ore automatically fed, passing over six horizontal revolving hearths that discharge alternately from the rim and centre upon the lower one, thence into the hoppers below that are immediately over the hearth of the reverberatory. It is designed in this furnace that when once ignited no further fuel will be needed than the sulphur, but they must run continuously, and on account of irregularity, until recently, in the operation of the reverberatories, these calciners have not been used.

The dust chamber is 180 feet long, 10x12 feet inside, with wing walls from the sides every ten feet, not overlapping, but having a clear space through the chambers to the chimney, which is 140 feet high and eight and a-half feet square inside.

Furnace room, 60x310 feet, 68 feet to peak of roof. The ore is being smelted after two methods: (a) In four reverberatories, hearths 14x22 feet, forty tons each per twenty-four hours, in charges of roasted and unroasted ore, slag and limestone, are now being treated. The fuel is wood, but as this is not yet dry enough to give the required heat, coal is also being used, over seventy tons a

day, from the Anthracite Coal Company's mines, on the eastern limits of the Rocky Mountains, whence it is brought over the Canadian Pacific Railway to Revelstoke, or Arrowhead, and thence in scows down the Arrow Lake and the Columbia to the smelter, whence it is raised up an incline 160 feet by a small steam hoist with cable and car, to a trestle along which the car can be run to the chutes wherever needed in the works.

(b) In a 40-inch circular furnace, twelve feet high to feed floor, water-jacketed, with six three-inch tuyeres, also with fore-hearth, forty-five to fifty tons of raw ore are now smelted in twenty-four hours. As the amount of sulphur in these ores is low, and that in the pyrrhotite not available for fuel, as already it is a natural matte, a typical form of pyritic smelting cannot be used, but more or less fuel is necessary, and a very satisfactory grade of coke is got from Fairhaven, Washington, although it carries from 20 to 24 per cent. ash. A small amount of limestone is added to the charge, but at present a very acidic slag, rather thick, but giving a good separation, is flowing, but very careful handling of the furnace is imperative. The analysis of this slag gives, SiO₂, 42 to 46 per cent.; FeO, 12 to 19 per cent.; Al₂O₃, 14 to 19 per cent.; and MgO, 4 to 6 per cent.

A new 200-ton rectangular blast furnace, made by E. P. Allis & Co., Milwaukee, Wis., after a composite design by Mr. Bellinger and Mr. Wedekind, is being quickly erected. In this furnace, 120x23 inches at the tuyeres, the steel water-jackets will be five and a-half feet high; height to feed door, fourteen feet, with fourteen six-inch tuyeres with thimbles of smaller size that can easily be put in for the purpose of experimenting with the quantity and pressure of blast, for all arrangements are to be such that tests can be made under varying conditions, to determine the greatest possible efficiency for this furnace upon this class of ore. Another feature of this furnace will be that, besides the movable fore-hearth, the bottom or crucible of the furnace will also be mounted, so that if required it can be altogether withdrawn from beneath the water-jackets.

The bluff on which the smelter stands is sand, but the top and face of the dump, 120 feet high, is being covered with slag that flows in sand gutters from the reverberatories, or is wheeled out in the usual slag-pots from the blast furnace; but in a short time all slag will be run from the furnaces into water troughs, be granulated, and then swept out to the dump, which will be protected from scouring out by the slag covering.

In the engine room is a sixty-five horse-power engine, with a forty horse-power engine now on the way. A No. 5 Root blower is now used, but a No. 7 will be needed when the big blast furnace is blown in. Power is transmitted by shafting, but mostly by wire cables running over large pulleys to different parts of the works. However, steam power may soon be replaced by electricity, as a plant is to be erected at the foot of the dump and supplied with Pelton wheels and water under a 250-foot head. On a tributary of the Columbia, not far from Trail, a very large water power has been secured by Mr. Heinze, who proposes the installation of an electric plant for the distant transmission of electrical energy which may be brought to the mines, as electricity has now become so suc-

cessful and economical a factor in mining elsewhere. At present 100 to 120 tons of ore per day are being brought down from Rossland by the Tramway, but this amount will be greatly increased. At the smelter 140 to 160 tons, it is stated by the management, (July 29) are being smelted daily, with a concentration of about twenty tons into one ton of matte, which matte goes to Butte to be refined; but already the foundations for a refinery at the smelter are nearly completed, in which the matte, after being crushed, will be further calcined in a reverberatory to be constructed, and then resmelted in two of the present reverberatories, after which the product will be treated so as to yield a high grade copper matte for export, from which 80 to 90 per cent. of gold and silver value has been separated for special refining and parting at these works.

From 175 to 200 men are employed, and when all these improvements are completed, this smelting plant will be well-equipped and capable of handling 350 to 400 tons of ore daily; and if the demand increases a still larger plant can easily be added. Again, with the increased means of transport, and the building of roads into other mineral producing districts, access to other classes of ore may greatly better and cheapen the process of smelting.—*William A. Carlyle's Report.*

Hon. Col. Baker, Minister of Mines.

LT.-COL. THE HON. JAMES BAKER, Minister of Education, Immigration and Mines, and Provincial Secretary for British Columbia, is a man whose type is seldom found in public life in Canada. Apart from his official position and his individuality, special interest attaches to him as belonging to the celebrated Baker family, of whom Baker Pacha and Sir Samuel Baker are too well-known to require introduction to any of our readers. Col. James Baker was the youngest of these brothers, and had fortune thrown his lot in similar lines it is quite legitimate to assume that a fame not less shining would have been his, because in keenness of intellect, dash and personal physique and courage he shared these qualities with his distinguished brothers, who became world-noted thereby. Hence in British Columbia, as he would be anywhere in the Empire, Col. Baker is an interesting figure. In his own way he has had a career scarcely less noted than Sir Samuel and Baker Pacha, though, as often occurs, the one is obscured by the greater fame of the other. Briefly, it has been as follows: He was born in London, England, in 1830, being a son of the late Samuel Baker, Esq., formerly of Gloucester, England, and after his school boy days entered the Indian Navy in 1844 as a midshipman. In 1849 he was appointed to command 100 seamen, to proceed to Mooltan to join the Naval Brigade, if he could pass the examination as acting master. He succeeded, and received the appointment, and was just about to start on the expedition when orders came down that no more seamen were to be sent up, as the siege had been raised. This unexpected change in the programme was a bitter disappointment to him, but was somewhat compensated for when, a short time afterwards, he was appointed first lieutenant of the schooner *Mahi*, three guns and forty men. At the qualifying examination for lieutenant he obtained the highest marks ever

given for navigation. In 1850 he retired and returned to England, where after a time he entered the army as cornet in the Royal Horse Guards Blue. On the breaking out of the Crimean War he volunteered for any light cavalry serving in the field, and was lucky enough to be appointed to the Eighth Hussars. While serving with this regiment he was present at the Battle of Tchernaya and at the siege and fall of Sebastopol, being afterwards honoured with medals and clasp.

After his return to England he was appointed to raise and command the Cambridge University corps, and was frequently selected to command brigade volunteers. In 1861 he organized a scheme for military education at the universities, on the basis that all officers entering the army should pass through them and have the advantage of the highest education and also be given instruction in military duties. The scheme was cordially adopted by all the universities of Great Britain, and they agreed to establish military scholarships and military fellowships as he had suggested. Amongst others who took great interest in the scheme was the late Prince Consort, who ordered Col. Baker to meet him at Windsor Castle to discuss the proposal. He also had to attend the Council of Military Instruction of that date to explain the method he proposed of organizing the new military education scheme. All this time the Duke of Cambridge was endeavouring to obtain a vote of the House of Commons for the enlargement of Sandhurst Military College, in order that every officer who entered the army might be obliged to pass at least a year in the institution before being appointed. The two rival projects were thus considered at the same time, with the Prince Consort supporting the one and the Duke of Cambridge the other. When the motion to provide for the enlargement of Sandhurst came up in the House of Commons and was brought to a vote it was defeated through the exertions of the Prince Consort and the university party, but Disraeli, at that time Prime Minister, was afterwards informed that the buildings at Sandhurst were partially completed, and, as the money had to be found, a re-vote was taken and the grant was made. Later on the Prince Consort was going to Cambridge, with a view, amongst other things, of furthering the scheme for military education, when he was unfortunately stricken with his fatal illness. Had the Prince lived, the project undoubtedly would have been carried to a successful issue, but, as it was, a compromise was effected subsequently which resulted in a university examination admitting to the army without further test.

While a student at Cambridge, Col. Baker took an exceptional interest in rifle practice, and won the Prince of Wales' Challenge Cup, the prize at the all-comers' meeting, and the first stage of the Albert Prize at Wimbledon in 1864, and in that match made the highest score. In 1875 he retired with the permanent rank of lieutenant-colonel in Her Majesty's army. On leaving the university the corps with which he was connected presented him with a handsome piece of plate. Col. Baker was entered as a Fellow Commoner at Magdalen College, Cambridge, and from there obtained a first-class degree, and was afterwards made a Master of Arts. After graduating he was appointed

private secretary to the Duke of Westminster, and in that capacity travelled extensively in Turkey and the classic East, obtaining the information from which he wrote the well-known standard work, "Turkey in Europe," which was favourably received and ran through several editions. In addition to this important literary achievement, he wrote several books on military organization, and contributed freely and regularly, principally on military topics, to the English periodicals.

In 1884 his interest in British Columbia was evinced, when, accompanied by his two sons, he settled in East Kootenay, where he purchased an extensive ranch, known as the Cranbrooke Estate. He rapidly acquired that influence which his former position, abilities and education entitled him to, and was returned to the Legislative Assembly of British Columbia for that district two years after his arrival. He was returned again at the general elections of 1890, running a close contest against a local popular candidate, Mr. Robert Law, who afterwards represented the province at the World's Fair, Chicago. In May, 1892, Col. Baker was offered and accepted a portfolio in the Provincial Cabinet, and entered as Provincial Secretary, Minister of Mines, Education and Immigration which offices, in view of their respective demands, he had special qualifications to fill. At the last general election in 1894 he was re-elected, and as the existing administration was sustained, he still continues his place in the Government.

Since entering upon the duties of his office he has introduced and carried into effect important legislation, covering the several departments of his administration, including amendments to the School Law, the Mining Act, etc. In politics, if in England he would probably be a follower of Lord Rosebery, inasmuch as a policy of vigorous assertion of British rights would appeal to his military instincts, although in other respects he might lean more strongly to the Radical wing of the party. In Dominion politics the writer judges him to be a supporter of the late administration, although as to his political sympathies outside of the province it is impossible to speak freely without better knowledge. In provincial politics he may be described as a progressionist. Many of the supporters of the administration to which he belongs regard him as, if not too radical, in advance of the requirements and development of the country. He is certainly a man that has read widely on the economic and philosophic questions of the day, and is fully up with the most advanced ideas. One of his measures, made law two years ago, provided for the establishment of a Bureau of Labour Statistics and a Board of Conciliation and Arbitration. It was in every sense an illustration of advanced and progressive legislation, but the experience of its operation has been that it did not have the correlative sympathy of the capitalistic community. The industrial organism has not yet become so complex as to demand the standing intervention of the State in industrial disputes, with its necessarily expensive machinery, and although it stands to-day on the statute book in a modified form its provisions are seldom taken advantage of. In a few years, when the province has a large mining population and the relation between capital and labour may

have reached a more acute stage, as it is sure to do, the wisdom of such legislation will be generally recognized and accepted. During the recent session of the Legislature, Col. Baker introduced and carried through the House a measure having in view the establishment of a Bureau of Mines and ultimately of a mining school. This will do much towards placing the mining industry of British Columbia in a more favourable relation to the capitalistic centres of the world, in making the province practically and scientifically known as a mining field, in which respect it is safe to say that no other country in the world will in a few years more than compare with it, not even South Africa. Col. Baker also holds strong views on the question of industrial and technical education in public schools and as part of our educational system. However, he has not been able to prevail on those associated with him to make the step without more serious consideration. In this and other respects he takes strong and advanced views, and if the writer were to venture a criticism on him as a politician, it would be that he allows his enthusiasm and candour to overcome his judgment of conditions as they exist, and to which all legislation to be successful must adapt itself and develop. In the matter of religious instruction in schools his views are that, while not favouring separate schools or sectarian teachings, there should be some commonly and mutually accepted form of devotion which would recognize the belief in and dominance in human affairs of a Supreme Being, and thus establish a link between the school system and the doctrine and general assumption that our laws are based on the ethics and essence of the Christian religion. As Minister of Education he is paving the way for the establishment of Normal Schools in the province and an institution of technical and applied science. Towards a provision for a permanent fund of maintenance, so as to relieve the province of the onus of direct taxation for school purposes, he advocates a system of land reserves, the proceeds from the sale of which to be applied partly to direct expenditure in connection therewith and partly to creating a permanent fund.

As a speaker Col. Baker is easily *facile princeps* in a house of good talkers, and while there is no one in the British Columbia Legislature distinguished for oratory, there is no Legislative Assembly in Canada in which there is a better average. He speaks forcibly, clearly and scholarly. In impromptu debate he is sometimes good, but his prepared speeches read like academic theses, delivered in fluent style. These at times rise to the point of real eloquence, which is the rarest of features in the modern parliament. Described briefly, Col. Baker is a splendid type of the English military gentleman, modified by the influence of wide and liberal reading. He is tall, possesses a lithe, muscular form, which leaves him to-day at sixty-five with the contour and sprightliness of a man in the prime of life. At some day in his career he must have been a man of rather extraordinary athletic powers, as, indeed, his brother, Sir Samuel, was known to be—an Ajax in strength and execution, one of those few men who combine great physical strength and intellectual ability in commensurate degrees. Politically, Col. Baker probably employs a too direct method to always succeed, where oth

ers accomplish their ends by circumvention and delay. He possesses the military instinct in a strong degree, and while strategy and tact are essentially common to politics and the science of warfare, they nevertheless belong to different orders and call into play different qualities of leadership. In one case the commander commands, and the game is in his own hands through instruments of his will; in the other, as a leader of men bound together by the ties of party allegiance alone, he has to play skilfully on the chords of fealty, party interest, and all the other delicate strings which control human conduct in a public capacity. To do this is to discard the ethics which pertain to and govern the success of the general in arms.

Col. Baker is studious, courteous and refined. Before accepting office under the Crown he was a rancher in the Kootenay district, where, as before stated, he owns the well-known Cranbrooke Estate. This is some thousands of acres in extent, and to the heart of an Englishman appeals as an ideal property, where to reside is to be monarch of all you survey, and to survey is to behold a pleasing prospect. On the open portions a straight furrow of four miles can be turned without a break or bend of any kind. It is a beautiful stretch of agricultural land, and some day, when the C.P.R. has built its short line of railway through the Crow's Nest Pass and the B.C. Southern is an accomplished fact, the Cranbrooke Estate will be a property not only of great value, but will be in the centre of a great producing area—agricultural and mineral. In the south-eastern part of Kootenay, where Cranbrooke is situated, lie immense beds of coal and petroleum and rich deposits of silver ore.

Notes from Nelson.

AT the Hall Mines Smelter there is a perfect swarm of men, all hard at work striving to get the works ready to start up by the end of the first week in October. The new chimney stack is up about seventy-five feet and has a hundred more to go. It stands on a commanding bluff and will be a conspicuous object in the landscape for miles around. The furnace itself has been entirely remodelled. Previously the crucible stood upon the ground, and when the furnace was blown out, it was found that the molten metal had eaten through the bottom of it and had found its way down deep into the solid brick foundation on which it stood. Nothing of the kind can happen now. The crucible stands on a movable car which runs on rails. When in position four powerful jack screws keep it tight up against the lower edge of the water-jacket. Whenever necessary the feed above can be temporarily stopped, the screws relaxed and the whole thing wheeled out into the open air to be re-lined or repaired. Part of the reverberatory furnace is already erected and the excavations for the new furnace are nearly completed. The strike on the C.P.R., if it should come off, will not affect the Hall mines, unless it is very prolonged, as that railway brings them nothing except their iron ore and lime, and of these the store bins hold a plentiful supply.

The shares of the company are quoted nominally at \$8.50, but there are no sellers at that price, but

plenty of buyers. The resumption of operations with the consequent publishing of returns will doubtless send them up again to a respectable figure.

There is some excitement over the discovery of rich veins of galena at the head of Nine Mile Creek. This description conveys little to the ordinary reader, but the locality is nearly on a line drawn from the foot of Slocan Lake to Balfour, at the mouth of Kootenay Outlet. This is the "height of land," or divide between the Kootenay and Slocan watersheds. Several creeks rise near it. Of these Coffee Creek and the South Fork of Kaslo River fall into the Kootenay Lake; Nine Mile, called also Kokanee and Yuill Creek, flows into the Kootenay Outlet, just above Nelson and the Creek flows westward into the Slocan River. The new find is on a ridge which lies towards Nelson and the tramway of the Silver King is plainly visible from it.

The excitement on the Salmon River still continues and has extended itself to Wild Horse Creek, a tributary flowing in from the east. Numbers of men are in there and numbers of claims are being recorded. No less than 150 were recorded at the Nelson office in the week ending October 3rd, of which the chief number were in the Salmon River country.

The lessees of the hydraulic claim on Forty-Nine Creek have finished work for the season. The result of their operations is not stated, but they express themselves satisfied and assert that they look forward to the resumption of operations next year.

There is a growing rivalry between the Slocan and Trail Creek as to which shall be the favourite field for investment. Both have many valuable points, and though Rossland with Spokane at its back has temporarily pulled Trail Creek into great prominence it is not to be doubted that the solid advantages of the Slocan will pull that district up into, at any rate an equal place with her more showy sister. Rossland ore contains gold. The Slocan has only silver. Yet a ton of the latter is worth in solid coin quite two tons of the former, and it is more easily mined. Without alluding to the Le Roi, War Eagle and other established properties whose names will at once occur to the reader, the mining engineer shakes his head over the continuity of Trail Creek leads, but he has no doubt at all about the true fissure veins of the Slocan. The public, however, is capricious and at present its fashion is gold; it will have nothing to do with silver. This public, however, is not that of the professional mining man, or the shrewd investor who follows his advice, but the yelling frantic public that squanders its money right and left just as the fashion of the moment takes it anywhere, in Europe, Asia, Africa or America. This ought to be, and undoubtedly is, the opportunity for the knowing man learned in mining. It is a fact that valuable silver properties that will pay from the start can be purchased in the Slocan today at the price of a mere prospect at Trail Creek into which thousands would have to be chucked before they would return a cent. It must not be understood that it is the writer's intention to belittle Rossland. It would be absurd to do so. There are many properties there of the highest value, but if investors would pay as much attention to the Slocan



SCENE ON ARROW LAKE, FROM NELSON.



VIEW OF GOLDEN, B.C.

can as they do to Rossland, their investments would be more profitable.

The Ruecan and the London Hill are both turned into limited companies, and their stock is offered to the public at par. This is a new departure, and there can be no question about its non-assessibility. The Ruecan is stocked for a million. It is a high grade claim between the Payne and the Noble Five groups and has been shipping ore for some time. The mine is in good condition with large quantities of ore blocked out, and still more in sight. The London Hill is a property on the north side of Bear Lake and at a considerable elevation above it. It contains a lead of rich, dry ore. It has had a good deal of work done upon it, but its shipments have been confined to car loads sent as samples to different smelters. A lower tunnel is being driven to cut the ledge. This is expected to be met in with about forty feet and if it is cut the shareholders may rejoice. The property is stocked for the modest sum of \$150,000 in 600,000 shares of twenty-five cents each.

The Last Chance is another Slovan property to enter the secure haven of incorporation. The owner, Mr. E. H. Tomlinson, has consolidated his interests with those of Mr. Hendryx and brought the Galena and Silver Cord into the combination. The company will own a solid block of land extending from the Noble Five to the R. E. Lee and northward to the Northern Belle and the Antoine.

Shipments of ore to date from the 1st of January, 1896, amount to 75,708 tons, of which 55,000 tons have been treated at local smelters. The exports from Nelson for September were \$264,000.

PICK.

Gold Discovery at Goldstream on Vancouver Island.

ON the Cowichan Road, seventeen miles from Victoria and five miles from the Goldstream Hotel, there is an immense body of free milling gold quartz, which though first discovered many years ago, has been lying idle until the recent mining development of British Columbia has turned attention to it. Now the wonder is that for so many years people while looking towards Kootenay and other places have allowed to go unnoticed a golden opportunity right here in Victoria.

Away back in 1859 considerable placer mining was done on Goldstream, Leech River and other streams in that district, and no doubt it was the finding of pieces of gold quartz in one of these streams that induced some of the miners to prospect for quartz veins. The result was the finding of this great quartz ledge in a small creek, one of the tributaries of Goldstream. A tunnel was run in over 100 feet on the ledge, which is well-defined, running N.N.E. and S.S.W. This tunnel crosscuts the vein and some of the ore taken out was shipped down to San Francisco for testing. The difficulties of transportation in those days and the small knowledge then possessed of economically treating the ore, coupled with the craze that ensued for the coarse placer gold of Cariboo, caused the mine to be abandoned.

In 1881 John Dalby re-discovered the claim with the tunnel on it, but afterwards abandoned it. About a year ago Mr. Dalby and the Snider broth-

ers staked out several claims, including this tunnel, and about the same time Mr. A. C. Howe located the Howard mine on the same lead about a mile and a quarter west.

Mr. J. A. Lawrence sent down an expert to examine the properties staked by Mr. Dalby and his partners, and had a thorough examination made this spring. Out of 118 assays the lowest value he got out of the quartz in the tunnel or cuts was \$5.60 in gold with from one ounce to ten ounces in silver, while the highest ran up to \$45.60 in gold. The result was that Mr. Lawrence bought out the interest of Mr. Dalby and his partners and has now the sole ownership of the group of five claims, which he has named the Lawrence group. They consist of the Wonder, Kate, Hope, Edith and Stanley, and besides these he has located eleven more claims, making sixteen in all. Mr. Lawrence says he is more than pleased with the results so far. The ledge on which are the Lawrence group is thirty feet wide on top and seventy-five to one hundred feet wide a hundred feet below on a level with the creek bottom, where the tunnel was run into a crosscut. This tunnel is on the Wonder, and three-quarters of a mile away, on the Kate, is another tunnel, ninety feet long, which was also driven by the old miners in 1859.

Mr. Howe, the owner of the Howard, on the same immense ledge, has been quietly working away at his property all summer and now has a tunnel in about ninety feet to tap the ledge and crosscut it. On top the ledge crops out twenty-five feet wide here and broadens out as it goes down. Its extent may be understood when it is stated that it can be traced for four miles right to the railway.

On his claims Mr. Lawrence is making a thorough examination of the mother ledge and the other veins. They have an assaying outfit on the ground for the purpose of making tests; besides mill tests are to be made from all the different ledges to determine fully the character of the ore. At present it is a reddish stained quartz, free milling in character, and should it continue so, Mr. Lawrence says he will have a thirty-stamp mill in operation within six months. There are at present 100 tons on the dump and Mr. Lawrence says that with the immense ledge to work on the ore can fairly be quarried out and with comparative ease.

Rossland Notes.

THE very able and conservative report of Mr. W. A. Carlyle on the Trail Creek mining district will, we think, inspire a large amount of confidence all over Canada.

It is a most valuable report, not only on account of the descriptions of the mineral resources, but more especially on account of its drawing attention to the needs of West Kootenay as regards railway and reduction works.

Several companies are talking of having their own smelting works erected close to their mines, but so far no steps have been taken.

We think that a short description of a few of the prospects and claims that will shortly be put on the market may be of interest to your readers. To enumerate all the claims would take up too much of your valuable space, so we will describe some that have recently come under our notice.

The Cambridge, situated in the South Belt about one mile from the Columbia & Western Railway

and south-east of Rossland. The work done on this claim consists of a shaft about twenty feet in depth sunk on the vein, which has now widened out to between three and four feet. The ore is a mixture of copper pyrites quartz and mispickel, assaying as high as \$20 in gold and eight per cent. copper. The improvement of the ore in this slight depth has given great encouragement to the owners, who have no doubt a most valuable property.

Following along the South Belt we come to the Celtic Queen, a property adjoining the R. E. Lee. A large amount of development work has been done on this claim, the ledge having been opened and exposed by small shafts and open cuts for five or six hundred feet. A shaft has been sunk fifty feet on the ledge and some very good-looking rock has been taken out of it. The lead can be traced by the open cuts, running right through the claim in a north-easterly and south-westerly direction.

Owing to the unfortunate management of the Nest Egg, Homestake, and R. E. Lee, the South Belt is not as far advanced as the North Belt, but now that strong companies are taking hold of several claims in this part of the camp, we shall in all probability see a great change in the next six months.

At this point we may as well mention that an application has been filed by the Crown Point Gold Mining Company for water rights on Tiger Creek, signed by Mr. Gooderham, who has placed orders for a twenty-drill compressor plant, and we hope in a very short time to see the Crown Point one of the regular shipping properties and dividend payers of the camp.

Following along the South Belt we come to the Gopher, a claim recorded under the old act, adjoining the Homestake. Rich strikes have recently been made on this claim, and work is being pushed on with great energy.

North of and adjoining the California is the Novelty, a claim containing about thirty-five acres. Three distinct ledges can be traced on this claim, and a tunnel is now being driven which should tap one of the veins at about seventy-five feet, and should cut the other vein at about 150 feet. The tunnel is now in about forty feet and the rock is heavily mineralized, containing copper and iron pyrites. This property shows every indication of turning out well, having an excellent tunnel site and can be worked very inexpensively, great depth being attained by this mode of developing the claim. Work is being pushed along rapidly and the outlook is very promising.

Notes About Slocan District.

THOSE who abandoned the Slocan when the crash in silver took place in 1893 and have settled in other sections, would be completely astonished to take a trip over the country to-day. The number of new mines that have been opened up, the various rich discoveries that have been made and the substantial and permanent improvements on all sides cannot but convince the most skeptical but that the mines go down to unknown depths and will be permanent and paying for perhaps ages to come.

It is conceded by all experienced persons who

have been engaged in the business of mining in the Slocan, that the country rock and vein matter is the softest and easiest to break of any they have hitherto met with. Outside the trachyte and serpentinite belt, on the north of the district, about all the underground work is done single-handed. So easily and cheaply is the ground mined that machine drills or air compressing machinery have been unnecessary.

Now that several concentrators are erected and in operation in the district the people of the transportation companies begin to realize the enormity of the future output of the mines already in operation. In breaking the ground to extract one ton of ore in many instances a number of tons of concentrating material are either broken or exposed so as to be easily mined.

The climate of the Selkirk Mountains, in which the Slocan district is situated, is one of the healthiest in the world. The scenery is varied and grand. Elevations above the sea of different points are as follows: Bear Lake (on the summit between Kootenay and Slocan lakes), 3,545; Three Forks, 2,626; Cody Creek (a tributary of the south branch of Carpenter Creek), 3,645; Slocan Lake, 1,865. The highest peaks are not much in excess of 8,000 feet.

The entire country is well watered with cool, clear streams, healthy for drinking or domestic purposes, and in such quantity as to be available on every hand for power. Timber also exists in endless quantity. White pine, red cedar, hemlock and red fir are the most plentiful. It is claimed that the white pine of this section is the finest and there is more of it than in any other part of British Columbia.

In the cleavage of the galena cubes from most of the ores found in the Slocan mines, are greater or lesser quantities of grey copper and antimonial silver. It is this fact which accounts for the ores carrying a higher per cent. of silver than many mines of other localities. Experts at the business say that this ore can readily be saved in the concentration process.

A Trip to Alberni.

MR. THOMAS KITCHEN, of Nanaimo, who recently paid a visit to Alberni, thus discourses in the *Nanaimo Free Press* about what he saw and his impressions regarding the gold fields of Alberni:

"Sunday morning I chartered Mr. Geo. Huff's steam launch and away we steamed for Granite Creek. Arriving there we climbed the mountains and inspected the various claims *en route*, including the well-known Star of the West, a claim on which considerable work has been done and which shows up well. Going up we met a gang of some dozen men who had been doing assessment and other work on several other claims some five or six miles higher up, and judging from the specimens they brought down, I say, as others have told me, that the district outside of the railway belt will not disappoint those who have pinned their faith on it.

"Leaving here about five o'clock we reached Alberni after dark. Then to bed, but not to sleep, and up betimes. Next morning we took a sulkey out to Debeau's cabin—beg pardon, his hotel; for if you want to keep in Debeau's good graces you must not call it a cabin—on Mineral Hill, the distance, only twelve miles, owing to the bad condition of

the road, taking some four hours to cover. After lunch away we climbed to the Alberni and other mines, visiting on the way the Duke of York hydraulic claim. Here, indeed it looks like business, with the monitors working and making the dirt fly and no mistake. The Duke will make fortunes for its enterprising owners.

"From there we went to the Constance claim, of some 300 acres, where good work has been done to prove the richness of the claim, and if the negotiations now pending end satisfactorily, this claim will prove itself, as old placer miners call it, one of the richest anywhere. Next to the Constance is the Cataract, which will also be heard from, as, I was told, Mr. Bainbridge's trip to 'Frisko had resulted in securing ample capital to energetically work the same.

"The sight of the Alberni mine well repaid the trouble of the climb. The seventy foot shaft and the 100 foot tunnel discloses a vein some fourteen inches wide that actually does assay up to \$5,000 to the ton. This rich pay streak is bounded on both sides by about ten feet of the prettiest looking quartzite which assays about \$12 a ton. The diamond drill is on the spot and was to have been in active operation that same afternoon.

"Returning, we visited, amongst others, the Mountain Rose, where there is as good a showing as a man could wish to have, free gold being visible to a large extent. Here we had supper with the former owner and genial miner, Mr. William Campbell, borrowing a candle before we left, not to go to bed with, but to light us down the trail, it now being nearly pitch dark. The evening was spent in tents around about, and then to bed on the soft boards of the dining room of Debeau's cabin, wrapped in a blanket but not in the arms of Morpheus, for sleep there was none. Glad when daylight came we were up betimes and climbed the steepest trail of all, visiting those splendid claims, the Maid of the Hills, Two to One and Regina group, on which, much to the credit of Messrs. Hovelague, McKinnon and Moie, and I hope and believe for their benefit, much good work has been done to the value of thousands of dollars in sinking shafts and running tunnels on the numerous rich ledges these claims contain. Here we dined on the usual good miners' fare of pork and beans. After farewells we start for home and are back at Alberni at dusk.

"I could say much about what I have seen and the amount of information I gained from one and another, for I did not spend an idle minute, but it would fill pages. I would say, however, squarely and honestly, that every place I visited I found fully equal or better than represented to me previously. There is an amount of work done there that is most creditable and to prove their faith in the district the miners are putting in good works on their own claims, and at most I visited are building themselves good, substantial log cabins, as they intend to work the winter through. This to me does, and to those who read this, should speak volumes. Alberni and district is all right. No other camp, I think, could make a better showing in so short a time—certainly not a richer."

Coal Loading Machine.

MESSRS. DUNSMUIR & SONS have erected a coal loading machine at their Wellington

wharves. The new machine is described as follows:

The superstructure of the machine is of a very permanent nature, and most compactly built. A new wharf has also been constructed in a most substantial manner. The machine is very simple, the only wonder being that it had never been built before. This machine consists of an endless steel apron, three feet six inches in width, which runs from under the hopper, where the cars dump the coal, to a position directly over the hatchway of the vessel. This apron, being counter weighted at the sides, can be lowered or raised with ease. From the end of the apron extends a slide or chute, which can be fitted to the mouth of the telescope. This telescope deserves more than a passing notice. It consists of four large, heavy iron tubes, each about five feet long. These by a simple contrivance can all be contracted or extended at the will of the man in charge, who stands on a small bridge some twenty or twenty-five feet above the level of the deck of the steamer.

The *modus operandi* of loading is exceedingly simple. The coal falls from the hopper on to the apron below and is then carried forward toward the end of the apron, where it falls into the telescope. As this gets filled up the bottom section of the telescope is raised slightly, which allows the coal to gently fall to the bottom without any serious waste through breakage. As the saving of coal from breakage was the object for which the machine was invented, it is to the eye of the inexperienced writer, a wonderful improvement on the old system of letting it run down the chute and drop from level with the hatchway to the bottom of the ship. The power used to manipulate this machine consists of an upright twenty-five horse-power engine. The amount of power actually used rarely exceeds ten horse-power, and only requires one man to run it. The operation of the entire machinery is controlled by the movement of three levers, located on the bridge, from which point the operator has a clear view of all the parts.

The entire machinery has been erected by the Link Belt Machinery Company, of Chicago. The capacity of the machine is over 200 tons per hour, and it is expected that by its use the breakage at this place due to loading will be reduced by one-half. Further tests of the machine will be made in order to fully establish its practicability and its limitations.

Fort Steele Mining Division.

THIS section of the country has made very satisfactory progress in mining matters since the season opened, although we have not had the boom which was predicted by some people. Our mining interests are now on a sure footing, and there can be no doubt about the future of the district as soon as we have proper transportation facilities by way of the Crow's Nest Pass.

The following is a synopsis of the work done during the season, which speaks for itself, as to the mineral development of the district.

The North Star mine, which was closed down during the spring and early summer, was opened up again and work commenced about the 1st of July. Since that time quite a number of men have been kept in continual employment getting out ore and developing the property, 4,000 tons of ore hav-

ing been shipped; three steamboats being kept busy during the summer months. It is the intention to work the mine all winter, and it is estimated there will be in the neighbourhood of 10,000 tons of ore on the dump in the spring. In the vicinity of the North Star about thirty locations have been made. The Midnight, which is the first extension of the North Star on the north, has been bonded to B. C. Kingsbury, of Spokane. A tunnel has been run in for eighty feet and work will be carried on during the winter.

Ore has been struck on the following claims in this group: Stenwinder, Utopia, Quantrell, Eureka, Big Chief, Little Chief and Geneva.

The Dean and Allover adjoining the O. K. (which is one of the four claims comprising the North Star property), owned by R. O. Jennings, C. D. Porter and the Kansas City and San Francisco company, is under the management of Mr. Jennings, who has had a force of men employed all summer doing development work. The indications are very favourable and there is no doubt of it being a valuable property.

The Quantrell, Utopia, Stonewall Jackson and Midget fraction have been bonded to Mr. Fenner, who represents an English syndicate.

The Sullivan group, which is separated from the North Star hill by Mark Creek, comprises about sixteen claims, the original locations being the Hamlet, Shylock and Hope, which have been sold this summer to a Spokane company represented by Col. Wm. Redpath, the consideration being \$30,000, \$1,000 having been paid down. The ledge has been stripped for twenty feet, showing a solid mass of galena in place. A shaft was sunk to the depth of thirty feet, passing through six feet of carbonates, the bottom of the shaft being in galena which assays fifty-nine ounces in silver and sixty per cent. lead. Supplies have been sent in for the winter, and Col. Redpath is expected in very shortly, when immediate steps will be taken towards developing the property.

Ore in a kidney form has been found on all of the following claims in this group: Gem, Stony, Stormy, Blucher, Gift, Galore and X Rays. In this vicinity there are now about thirty-four claims staked off.

On the Moyie group situated on the Moyie Lakes work has been carried on by the owners all summer. On the St. Eugene, Pitce and Loretta, owned by Messrs. Finch and Cronin, a force of men have been employed since last fall. Six hundred feet of tunnelling has been done, and they are now sinking a shaft through ore from the upper to the lower tunnel, a distance of about 100 feet, both tunnels passing through solid chutes of ore. At present there is about 4,000 tons of ore on the dump and fully 12,000 in sight, which assays about fifty-five ounces in silver and sixty-eight per cent. lead. On the Moyie and Queen of the Hills, the property of Frank Houghton & Co., of Montreal and Vancouver, 100 feet of tunnelling has been done, striking a solid ledge of galena the whole width of the tunnel. On the Lake Shore claim a thirty-foot tunnel has been driven, showing galena in place. It is expected that the owners will ship ore from this claim next year by means of scows to the head of the lake, a distance of about ten miles, and from

thence by a waggon road of about twenty miles in length to the Kootenay River.

The Dibble group, which is situated about ten miles in an easterly direction from Fort Steele, was bonded last October to Mr. Sprague and Chisholm Brothers, of Montana. Development work has been carried on ever since, a tunnel having been run in for about three hundred feet, attaining a depth of 400 feet. In doing this work four leads have been cut and a fifth one reached, which is supposed to be the main lead. Numerous assays have been made, the general average being 150 ounces in silver, \$30 in gold and 12 per cent. copper. There is some ore in the mine that runs as high as 1,000 ounces in silver and \$200 in gold. One of the Chisholms is at present here, and there is very little doubt but that the bond will be taken up when it expires in October. The Emerald, an adjoining claim, has also been bonded to the same parties for \$15,000.

On the Dardanelles, a gold quartz claim on Wild Horse Creek, a tunnel is in ninety feet. The owners have erected an arastra at the foot of the mountain close to the creek to which they have been transporting their ore. Mr. Hugh Sutherland, of Montreal, has an option on this property for a large sum.

The Lily May, a short distance up the mountain in a south-easterly direction from the Dardanelles, is owned by the Fort Steele Mining Company, of Spokane, of which Mr. Redpath is president. It is reported that the company will develop the property this winter and will put in a stamp mill next spring. Considerable development work has been done on other claims in the vicinity of Wild Horse Creek.

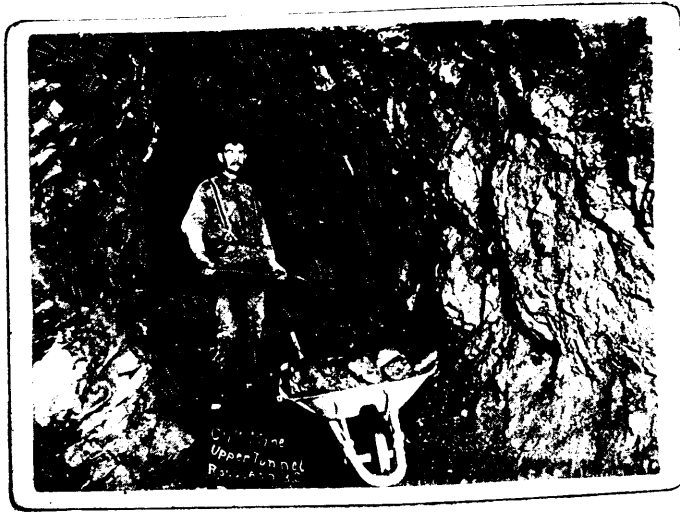
Among others may be mentioned the Gold Hill group—Boston Girl, Sweepstakes, Nancy Hanks, and Maud S, while the placer claims have been in full operation during the latter part of the summer.

The Invieta had quite a lot of preparatory work to do before any result could be obtained, but now they have three monitors at work, thirty men running two shifts, night and day. They have laid an entirely new line of heavy steel piping, which gives a pressure of 500 feet, and another line of pipe with 250 feet pressure. A partial clean-up has been made which proved satisfactory.

The Nip and Tuck had to re-construct the whole working of the mine at a considerable expenditure in both time and money, but nevertheless a large amount of ground has been worked, and the manager is perfectly satisfied with the results so far.

The Chinese company adjoining the Nip and Tuck also had to make extensive preparations in laying pipes, etc., before they could make a start. There are several other Chinese companies working in the bed of the creek, principally by means of wing dams, one company fluming the creek at a cost of \$1,500.

The International company, formed last summer for prospecting an old channel, sank a shaft to the depth of forty feet. At the bottom they obtained a prospect going as high as seventy cents to the pan, but encountering water they started a tunnel to strike the channel at a depth of seventy-five feet. Passing through the rim rock the old channel was reached in 390 feet, but work had to be stopped on account of the amount of water. After



CLIFF MINE, ROSSLAND, UPPER TUNNEL.



IRON MASK MINE, ROSSLAND.

upraising about fifteen feet, when the water lowers, they will sink the upper shaft to meet the upraise in the tunnel.

The Wasa claim, situated about fifteen miles north of Wild Horse Creek on the same side of the valley, has been bonded or an option has been given to some Vancouver parties. Considerable work has been done on this property, the ore containing gold, silver and copper. The Cambria and Jennings, extensions of the Wasa, and Mammoth, have a very good showing for the amount of work that has been done. On the Jennings there is a twenty foot tunnel, and on the Cambria a thirty foot tunnel, the ore being of the same character as the Wasa. A new strike has been made about two or three miles to the south of the Wasa group on the divide between Six Mile and Tracey Creek. The ledge is six feet in width with three feet of galena traced for a distance of 4,500 feet and is known as the Lady Ann group. Captain Armstrong, of the Upper Columbia Navigation Co., has obtained an interest in some of the claims and intends doing development work this winter.

An important discovery has been made on Shingle Creek a short distance north of the Dibble group of a ledge six feet in width exposed on the surface for 1,500 feet. Assays give \$24 in gold and fifty-nine ounces in silver.

Mr. David Griffith, who has some claims on Bull River, expects to transport ore by means of sleighs this winter to the banks of the Kootenay River. The ledge is about seven feet in width with well defined walls, the ore containing silver, gold and copper.

A new strike was made near Wolff Creek in the neighbourhood of the Lady Ann and Wasa groups, the lead being seventy-five feet in width with gray copper; also on Tracey Creek in the same vicinity a ledge showing three feet of solid galena.

Messrs. Chisholm and Sprague, who own a half interest in the Ramshorn and Little Horn, situate on Tracey Creek, have obtained a bond on the other half interest.

Assessment work and development work have been done on numerous claims situate on Bull River, Sand Creek and Elk River and intervening ground, the distance from Bull River to the Copper properties near Elk River being about twenty miles in a southerly direction, Sand Creek being about half way between. On the Copper properties near Elk River men have been employed for most of the summer getting out ore, it being the intention of the owners to freight the ore to the banks of the Kootenay this winter to be ready for shipment in the spring.

Up on the St. Mary's River a large number of new locations have been made this summer. This mineral bearing belt is near the summit of the Purcell range and extends for thirty miles along the headwaters of the St. Mary's and its tributaries. Herein before prospectors have been heavily handicapped on attempting to work their claims in this region on account of the scarcity of trails and the general inaccessibility of the country, but this fall the St. Mary's trail has been completed right through to Pilot Bay on Kootenay Lake in West Kootenay, the distance from Fort Steele to the summit being about sixty miles, and from the summit to Pilot Bay about sixteen, so that next summer the own-

ers of claims in this section will be able to take in supplies without much difficulty.

On Perry Creek, a branch of the St. Mary's, which forms a junction with the main stream about ten miles west from Fort Steele, a most wonderful discovery of gold quartz has been made. Last summer Jno. Sherwood made two locations. There are now about forty claims staked off, and fresh locations are continually being made. There are three separate leads which can be traced for a distance of seven or eight miles, the principal ledge being five feet in width of free milling ore, assaying from \$56 to \$200 in gold. A good prospect can be obtained in the surface dirt almost anywhere within the seven miles comprising what is now called the Gold Belt. There is no doubt but that there will be a large and busy camp on Perry Creek next summer. The Chisholm Brothers, of Montana, have a group of seven claims; Mr. DeP. Moffatt, from Helena, is interested in four; Sherwood has four, and Chas. Elwood & Co. have also four, while there are quite a number of single locations. A good many of the owners intend working on their claims all winter. It is understood that Sherwood has bonded his claims to a company, and that Mr. Hugh McQuade, of Montana, has managed to secure bonds on four or five.

On Hell's roaring creek, another branch of the St. Mary's, distant about twenty-five miles from Fort Steele, six claims have been staked off by Capt. Gray and H. M. Casey, of Hope, Idaho. The ore is galena with a slight percentage of copper, six feet in width, and the croppings assay \$6.30 in gold. A tunnel has been run in for thirty-five feet on the ledge, which is gradually widening.

On the Upper Moyie and its branches, comprising Weaver, Boulder, Nigger, and Palmer's Bar creeks, a number of gold quartz locations have been made, and on some of them considerable development work has been done, with good results. Perry Creek and the branches of the Upper Moyie are not far apart, consequently they may be considered as being in the same gold belt.

The Old Ridgeway placer lease on the Upper Moyie has been purchased by Foster & Co., of Kamloops, and an expert is at present examining the property so as to report on the best means to work the ground. The owners intend to begin operations this winter.

The Perry Creek Mining Company has been reorganized and their ground, which comprises about four miles of creek diggings, will soon be opened up again, as thirty thousand dollars has been appropriated for that purpose.

Of course there are a large number of mining locations not mentioned in the above list, but I think the most important discoveries have been included. Altogether from the 1st of July to the 1st of September there were 102 locations recorded in the Government office, and during the months of August there were thirty-one certificates of work issued.

In conclusion, and looking at what has been accomplished this summer, the mining fraternity of the Fort Steele mining division ought to feel satisfied at the progress made during this season considering how the mining interests of this section are hampered through the want of a railway, but it is to be hoped that before long the Crow's Nest

road will be built, and then capital will easily be obtained for the development of our mines.

The Fort Steele Mining Association have sent a very good collection of mineral specimens to be exhibited at the Spokane fair on October 6th. A delegate will be present during the fair to represent the mineral interests of the Fort Steel mining division.

Fort Steele Exhibit at Spokane.

FORT STEELE, East Kootenay, made a most creditable display of minerals under the charge of Mr. A. B. Grace at the Spokane Fair. It consisted of one hundred specimens from various claims representing coal, asbestos, gold, silver, iron, copper etc., and as showing the wealth of mineral in the neighbourhood of Fort Steele we give the following classification of the specimens shown:

Silver and Lead	21 samples
Gold, Silver and Lead	47 "
Galena	1 "
Antimonial Silver	1 "
Iron Sulphurate	6 "
Iron Pyrites	2 "
Gold Quartz	20 "
Grey Copper	4 "
Peacock Copper	1 "
Copper	10 "
Free Gold	4 "
Graphite	1 "
Coal	2 "
Asbestos	1 "
Black Manganese	1 "

Or one hundred and twenty-two specimens from as many claims. When it is considered that this splendid exhibit was collected in four days, it speaks well for the energy and enterprise of Mr. Grace and the gentlemen who assisted him in the work. It speaks volumes, too, for the district from which the collection of minerals was taken.

The North-West Mining Association.

ON the 6th, 7th and 8th of this month the North-West Mining Association held its annual meeting in the city of Spokane, Wash. The attendance was not as large as expected owing to many of the members being engaged in the political struggle now going on throughout the United States. Others were not able to be present on account of business engagements elsewhere, but what the meeting lacked in point of numbers was fully made up by the enthusiasm of the members present.

On the 7th the president of the association delivered an interesting address, from which we take the following extracts. He said:

"The first temporary organization was effected August 20th, 1895. The success of the first meeting is better understood than told. The attendance was sufficiently large to warrant further procedure, and what is known as the first annual convention, October 2nd and 3rd followed. That convention, appreciating the importance of judicious action, performed its work deliberately, and, as has since been proven, wisely.

"The officers chosen to carry the responsibilities for the ensuing year were G. B. Dennis, president; Gen. A. P. Curry, first vice-president; Col. W. J. C. Wakefield, treasurer; L. K. Armstrong, secretary; and by appointment, F. L. Kershaw, assistant sec-

retary. In accord with the powers vested in him the president at once appointed as his *aides de camp* the judiciary, finance, transportation, membership and publication committees, constituting forty members in all, of which Messrs. Patrick Clark, Judge J. Z. Moore, Col. W. J. C. Wakefield, W. McC. White, of Butte, Mont., Geo. M. Foster and Col. N. E. Linsley were respectively chairmen. The gentlemen appointed were selected because of their peculiar fitness for the office, as well as for their strength of character. Their wisdom, counsel and influence has been the mainstay and guide of this association; and thus founded, its success and prosperity became assured. While all receive their full quota of commendation, for they deserve it, the executive committee has borne the major responsibility, and by their loyalty, capability and worth have rendered signal service, as well as accomplished great success.

"After a two days' session, specially marked for the intensity of interest taken, the convention adjourned to meet again a year later, October 2nd and 3rd. The executive committee, because of the intervention of the Lord's Day, afterwards changed the dates of the meeting to the 6th, 7th and 8th.

"Following the adjournment of the convention the executive committee went into regular session, and thus began the first year's work of the association; and it affords me pride and pleasure to state that it has met regularly and consecutively every Tuesday night of each week since. To these meetings have been invited members of the association who have attended.

"A review of the past year's labour will not at this time be amiss. I give it to you that you may know at least in part its character, as well as its accomplishment.

"There has been appointed two hundred and twenty-five second vice-presidents, fifty-eight of which were in the State of Washington, forty-seven in the State of Montana, fifty-two in the State of Idaho, forty-one in the State of Oregon, and twenty-five in the province of British Columbia. These officials represent organized branches of this association, one each in the mining district for which he is appointed. These branches, with the second vice-presidents as chairmen, hold regular meetings, and through their secretary, report their action of the executive committee, except in such cases where the chairman, who is also a member of the said committee, in person presents the said action, in regular executive committee session. A question of law or custom governing mining, where the branch cannot for itself determine the proper status, appeals to the executive committee, which through the judiciary, solves it, if possible, returning said resolution from whence the query came. A great many such questions have been submitted, discussed and decided. These auxiliary branches are established for the convenience of the members of the association. In other words, the association in its province covers the four States of Washington, Idaho, Oregon, Montana and the province of British Columbia, a large area where distance in miles is considered, which makes it impossible for members to meet at any one common point, therefore separate organizations are formed, and meetings held in each mining district, their action being

mitted to each executive committee, which practically is the governing board of the whole association. Branches are being organized as rapidly as possible, and it is hoped that before another year the association will have auxiliary representation in every mining district.

"There was printed in well-arranged typography the full proceedings of the first annual convention, embodying all the actions and addresses of the various speakers. Three thousand copies were placed in the hands of second vice-presidents and members.

"Realizing the necessity of closer intercommunication with the official heads, as well as a more personal acquaintance and understanding upon the general work, which only personal contact would best afford, a convention of the second vice-presidents was called for February 22nd, 1896, and was very largely attended. The proceedings were published in the March number of *Mining*. The result of this meeting has impressed the executive committee with the wisdom of repeating them as often as practicable. The convention closed its sessions on the evening of the 22nd with a magnificent banquet. Thus, in good cheer, firmer friendship, better understanding and more full faith in the future prosperity of the association, and in one another the meeting adjourned *sine die*.

"We are pledged to support in common all interests of mining in the Northwest, whether those interests are affected either by laws already operative or by persons or corporations, or new laws to be ordained, and only in this way is our work destined for long duration and the highest usefulness. Our purpose is a common one, and our inspiration the attainment of the greatest good.

"The province of British Columbia has had our warmest consideration and no stone has been left unturned or interest not advanced that we in our power could subsolve. In April of the present year, and as a delegate from this association to the parliament of British Columbia, I visited Victoria. The tax bill then before that honourable body for consideration implied a two per cent. tax penalty upon the gross output of all crude ores produced in the province, which was deemed pernicious to the development of mining. Had this bill been permitted to become a law it would have retarded for some time to come mining development in British Columbia. In the final settlement of the measure the association was a marked factor. The bill as finally passed was so modified that but one per cent. upon the net smelter returns was submitted and became the law. This permits prospecting and development to proceed unhindered and unprejudiced, and now no revenue is paid in the way of a tax to the general government except upon such ores as are mined and first shipped to the smelter and for which cash returns are made. Thus ores upon the dump are exempt from this liability. The association regards its identification with its attendant results as one of the best and most important endeavours of the year.

"In the early history of and shortly after the organization, Col. N. E. Lindsley introduced a resolution which was in effect the establishment of a cabinet office in the United States Government which should be known as the secretary of mining. This resolution was ably supported by Capt. C. H.

Thompson and others. A paper advocating the measure was read by A. F. Parker, of Grangeville, Ida., at our official convention, February 22nd last. The association feels that the time has come when the great mining interests of the United States should have the same recognition officially by this Government in the way of a cabinet office and officer as any other department of commerce or state and to that end will labour hard to accomplish it. Its action has borne fruit in that the mining associations of California and Colorado have joined forces with us, and all will help to carry to success this meritorious movement. The officer of minister of mines for the British provinces has proven a great boon to mining there, and it is with the same intent that we endeavour to establish the same thing for these United States. Our great mining interests are fast awakening to its importance, and demand that it receive at the hands of the United States Government that recognition which shall place it upon a parity with other commercial industries. We hope to be successful."

The president in his address referred to several projects which the association had in view in the near future. Among other things he mentioned the early erection of a mining building in Spokane five storeys in height to contain offices, club, assembly and entertainment rooms, and space for the exposition of minerals, etc.

Altogether we congratulate the association on the success which is attending its efforts on behalf of mining in the Northwest, and regret that our space will not permit of a more extended report of the annual meeting.

Hotels.

ONE of the most comfortable hotels in the Kootenay is the Lancaster Hotel at Rossland. Situated on rising ground above Columbia Avenue it is free from impure drainage of any kind and the view from the windows of the house is charming. The meals served are most excellent and everything about it comfortable and home-like. Messrs. Garnett & Long deserve the greatest credit for the manner in which the house is conducted, and during our long stay there we found them attentive and obliging hosts.

The Kaslo, in the town of the same name, will be found most comfortable and like the Lancaster at Rossland, the meals are all that can be desired. No one will complain after a stay at the Kaslo.

A Missionary to England,

THE introduction of capital for the development and operation of our mines is all that is required to show to the world that British Columbia is immensely rich in mineral treasure and that investments, if properly made, will prove to be highly profitable. Each day is bringing to light new fields and valuable deposits. We, on the spot, know this, but capital, especially when held in distant countries, is wary of investment in new enterprises unless the holders can be assured by responsible parties that the propositions offered to them are *bona fide* in every respect. Englishmen as a rule are cautious in the investment of their money—some think over-cautious—but once they feel con-

fidence no men are better able or more reliable in their investments than they. It is desirable, then, that in our efforts to procure English capital, we should be careful not to misrepresent or in any way mislead by exaggerated statements.

Before going to English investors we should know something definite as to the value of what we offer. So far as mines are concerned this can best be accomplished by having a certain amount of development work done in order to satisfy ourselves before proceeding to seek capitalists at a distance. It is the men who are able and willing to invest money of their own in developing claims to ascertain their worth in order to enlist capital in the purchase and operation of mines in this province who are doing good service to the country and not mere promoters who have little money of their own to spend, and whose object is purely one of speculation without risk to themselves. Unfortunately there are many of the latter class operating or endeavouring to operate on the strength of British Columbia's rich resources.

Mr. B. F. Shaubut, whose headquarters are in London, England, has spent the last three or four months in British Columbia, principally in the Trail Creek district. Only the other day he left on his return to England, having during his stay in this country devoted all his time to a thorough inspection of our mineral resources. We have known Mr. Shaubut for years as a conservative and cautious man of business and believe that what he says about us will be at least the truth, as he conscientiously believes it.

We understand, too, that he has invested a considerable amount of his own money in several of our mines. He is part owner of the Sovereign mine on Lookout Mountain, and shortly before his departure purchased what is known as the Prince of Wales group adjoining the Sovereign. This group consists of the Prince of Wales, Debs and Emma claims, which development work show to be among the most promising in the Trail Creek district. The course pursued by Mr. Shaubut in coming out and spending several months in the heart of our mining district in order to familiarize himself with what is going on is one which commends itself to us and will enable him to speak with authority on his return to England.

That a man like Mr. Shaubut should take up the subject of mining in this province with the view of pushing it in the Old Country is, we consider, a direct gain to the province, and we will be very much mistaken indeed if on his return he either overstates or misleads in any way those with whom he may come in contact.

Boundary Creek Notes.

THE first shadow of winter has come upon us in the shape of miserably cold and wet weather, and the hills seen in the distance away up Boundary Creek have taken on their first capping of snow. A spell of similar disagreeable weather was experienced very much about this time last fall, by the few who were here then, but after it had passed late September and October developed into beautiful dry weather, frost at nights and a hot sun during the day, and we look forward to such an-

other Indian summer this year, before winter actually closes in upon us.

The road from Greenwood City to Greenwood camp (six miles distant) and Wellington camp is now completed, and considerably lessens the distance to Grand Forks, besides offering better grades and angles than the old mail road via Anaconda.

The first issue of the *Boundary Creek Times* appeared on September 12th, published at Greenwood, and should be a very useful medium of news to outside parties of the doings in Boundary Creek.

Mr. Graham, M.P.P., has been making a stay in the district, and though avowedly no mining man, has been patiently listening to the appeals and wants of the miners for better communication and roads, etc., both inside and outside the district, and has left us with great hopes of provincial assistance to come.

Early in the month Mr. Leslie Hill, representing the Prospecting Syndicate of British Columbia, (limited liability), made a very thorough inspection of the camps in the neighbourhood and bonded interests in the Jewel and Denano Grande, adjoining claims in Long Lake Camp. The exorbitant price asked for the remaining interests in the Jewel compelled Mr. Hill to leave the property, and several thousand dollars which Mr. Hill was prepared to expend on development this fall is taken away to be applied elsewhere. It is a great pity that when a good, reasonable offer is made for property, that one or more parties holding fractional interests (in this case one of the holders owns one-eighth interest only), should be able to spoil a deal and simply drive good and substantial syndicates' representatives from the country by making their demands so exorbitant.

Mr. E. A. Digby, representing private English capital, has been visiting the camps during the past week and has bonded one if not two claims in Copper Camp.

Work is going on steadily at the copper mine, where the ore has been cut in the drift from the fifty-foot level.

A new strike is reported from about eleven miles up Boundary Creek from Greenwood and several locations have been made there, though I have been unable to obtain reliable information as to the nature of the ore.

In Greenwood Camp the bond on the Snowshoe has been allowed to run out, without the necessary payment being made, and Mr. Turner has only till October 1st to determine whether he will take up the Gold Drop bond or not. Unfortunately in the short time at his disposal the diamond drill rod got jammed and in extricating it the head with the diamond was left sixty feet down the shaft and is causing the loss of valuable time in its extrication.

The remaining claims in which much work is likely to be done this fall are the Stenwinder (Greenwood Camp), Skylark (Skylark Camp), and No. 7 (Whites).

BLAZER.

Boundary Creek at Spokane Fair.

THE following extract is from a leaflet circulated at the Spokane Fair in connection with the splendid collection of mineral samples shown from Boundary Creek mining districts. We publish it because the information it contains is valuable and should be widely circulated:

The Boundary Creek mining district, as its name implies, lies along the international boundary on the British Columbia side of the line. It is about thirty-five miles west of the Trail Creek section and is bounded roughly between the north fork of Kettle River on the east, Rock Creek on the west, and extends northerly some fifteen miles from the boundary. The district is reached by a 50-mile stage ride from Marcus. The area embraced is over 400 square miles, all of which can safely be said to be mineralized throughout its extent. The character of ore varies from the simplest milling to the very complex smelting ores. Ores of every necessary character for smelting are found in this district, as are also coal and flux. Excellent water and timber are found in abundance, while in the valleys large crops of grain, vegetables and fruits are raised. Grazing lands, on which thousands of head of stock range, are found throughout the district. Nature has indeed been lavish in her gifts to the Boundary country.

In describing the mineral resources of Boundary Creek it is not found necessary to exaggerate in any form. The immense copper-gold ledges of Greenwood, Cooper, Deadwood, Summit, Brown's and other camps; the rich silver-gold ores of Skylark, Long Lake, White's Providence and Smith's camps, are all there in reality. They are large enough and rich enough. Nobody who is posted on the district can object to that. There are some who assert that the great ore bodies of copper and gold are too large on the surface to "go down." Development is rapidly disproving this statement. There are people who still say that the earth is not round; some men must kick, but actual facts being now demonstrated by work, count for a whole lot more than this idle talk.

The present season has been an active one and work is now being carried on in a number of camps. The figures below, furnished by Mr. Wm. G. McMynn, mining recorder, Midway, B.C., give some idea of the increased activity this year:

1895—Entire Year.	
Location records.....	771
Certificates of work.....	140
Free miners' certificates.....	451
Revenue for 1895, \$6,371.	
1896—From Jan. 1 to Sept. 23.	
Location records.....	998
Certificates of work.....	443
Free miner's certificates.....	640

Revenue for 1896, about double the amount for same time in 1895.

Following is a very brief outline description of the camps in the district. No attempt is made to go into details or to describe individual properties. We want you to go up and see for yourself. The claims named in the description are those of which samples of ore are exhibited, and on which more or less development has been done. There are hundreds of other claims on which there are good showings, but space forbids their mention, and those named are typical of the camps they represent:

Greenwood Camp.—Ore bodies 10 to 100 feet wide; copper pyrites carrying gold; assays 3 to 15 per cent. copper, \$3 to \$100 in gold, a considerable proportion carrying \$10 to \$30 gold and 4 to 8 per cent. copper; samples exhibited from Stenwinder,

Gold Drop, Knob Hill, Snowshoe, Rawhide, Brooklyn, Standard, Old Ironsides and Phoenix.

Summit Camp.—Ore bodies 10 to 50 feet wide; copper pyrites carrying gold and silver; assays 3 to 20 per cent. copper; \$3 to \$10 gold, and some of the ores as high as 200 ounces silver; samples exhibited from R. Bell and Emma.

Wellington Camp.—Ore bodies from 3 to 20 feet wide; copper-iron pyrites and pyrrhotite in a siliceous gangue; assays from a few dollars to \$700 gold; also some silver properties in this camp; samples exhibited from Winnipeg, Golden Crown, Calumet and Buttercup.

White's Camp.—Veins 2 to 12 feet wide; ores carry copper and gold; and silver, copper and gold; assays 3 to 10 per cent. copper, \$3 to \$20 gold, and 5 to 200 ounces silver; samples from City of Paris, Lincoln, Jack of Spades, Lexington and Excelsior.

Skylark Camp.—Ore of two kinds: silver-gold and copper-gold; of first class, veins are 1 to 3 feet wide; assays 50 to 800 ounces silver, \$5 to \$50 gold; samples from Skylark, Crescent, Last Chance and Canadian. Of the second class, veins are larger; assays 3 to 20 per cent. copper, \$1 to \$6 gold; samples from Ruby and Tip Top.

Long Lake Camp.—Veins 1 to 8 feet wide; silver-gold ores, siliceous gangue; assays from \$5 to several hundred dollars gold and silver; samples from Jewel, Dinero Grande and North Star.

Smith's Camp.—Veins 1 to 8 feet wide; ore carrying silver and gold in siliceous gangue; assays from 10 to several hundred ounces silver and from \$3 to \$100 gold; samples from None Such, Republic, Last Chance, Great Hesper, Boundary Falls and Golconda.

Deadwood Camp.—Large bodies of copper-gold and iron-gold ores; assays 2 to 10 per cent. copper and from \$1 to \$30 gold; samples from Great Hopes, Hidden Treasure, Gold Bug and Iva Lenore.

Copper Camp.—Large bodies of cuperite and chalcocite carrying some gold and silver; assaying from 6 to 20 per cent. copper.

Providence Camp.—Very rich silver-gold ores; veins from 6 inches to 4 feet wide; assays from 50 to 500 ounces silver, \$5 to \$100 gold; samples from the Combination, D. A. and Spotted Horse (the latter not so high grade).

Brown's and Evan's Camps.—Have very large showings of copper-gold ores; these camps are on the north fork of Kettle River.

Graham's Camp (west of Midway).—Rich copper ore, assaying well in gold and silver; samples from the Texas and Bruce.

Among the recent new strikes may be mentioned those at James Creek (samples from the Crown Point), Pass Creek, Camp Kimberly, and the west fork of Kettle River (samples from the Headlight).

The Rock Creek coal, a sample of which is exhibited, yields by analysis made by Guess Bros., as follows:

No. 1. Coke, 65.5 per cent.; ash, 6.2 per cent.; volatile matter, 28.3 per cent.

No. 2. Coke, 68.85 per cent.; ash, 15.4 per cent.; volatile matter, 15.74 per cent.

Analysis of Boundary Creek limestone by the same chemists yields 97.2 per cent. calcium carbonate, 1 per cent. magnesium carbonate, 1.5 per cent. iron oxide and alumina, and 0.5 per cent. silica.

"A large majority of the 2,000 claims in the district are yet in the hands of the original locators—poor men who need the assistance of capital. Claims can be purchased on very reasonable terms, and, with the assurance of railroad connection in the very near future, where is there a safer field for the investment of capital?"

The Boundary Creek "Times."

We have received number one, volume one, of the *Boundary Creek Times*, published at Greenwood City, B.C. It is in every way a most creditable production. Well edited, neatly printed, and full of valuable information about the district it represents, the *Boundary Creek Times* will no doubt succeed as it most assuredly deserves to. Greenwood City may be proud of its new paper.

Mining Companies.

WE clip the following from the *Mining Review*, Ottawa:

"Mr. Thos. Tonge in a letter to the *London Mining Journal*, gives the following reasons for the disappointments realized in mining investments on this side. He says:

"Many mining enterprises, good and sound in themselves, placed in England, have proved financial failures to the shareholders by reason of the following:

"1. Over-capitalization. For instance, a property for which the vendor received, say, £20,000, being more than worth every shilling of it, is floated on the British market at, say, £50,000 or £75,000, or even more, with the result that, whereas the property would have paid handsome dividends on a capital of £30,000, no management can make it pay satisfactory dividends on the exaggerated sum at which it is floated.

"2. Exorbitant 'rake-off' by promoters and middlemen, which inevitably is at the expense of the duped shareholder. Too many promoters are not content with a fair remuneration for their trouble, but look for big profits from unloading stock and not from ore shipments.

"3. Excessive office and directors' expenses at the English headquarters, even though involving the curtailing of necessary expenses at the mines. The wealthiest and most experienced and successful mining men in Colorado do not waste their time on public stock companies with the minimum of efficiency and the maximum of red tape formality and office expense, but form themselves into small private syndicates or companies, the capital being furnished by themselves, and a few personal friends, and the money put into efficient work on the properties.

"4. Inexperienced and incompetent mining engineers, managers, etc., usually relatives or connections of the directors, sent out to report upon or manage, or in some way draw a salary at the time.

"Everyone acquainted with Canadian mining will endorse the truth of Mr. Tonge's observations. At the same time it is noteworthy that not a few Canadian mines upon which thousands of dollars were expended foolishly have been, and are to-day, being worked at a profit by Canadians and Americans."

A Mendacious Sheet.

A JOURNALISTIC venture has appeared in Rossland under the name of the *Mining Review*. Fortunately for the credit of the mining industry in British Columbia it stands alone in its advocacy of methods which are not creditable to those engaged in them. The mining papers of this province although they may not agree with each other at all times are, so far as we have seen, a unit in discouraging anything that may savour of unscrupulous promotion of mining companies. The only exception is the new publication at Rossland—the *Mining Review*. It favours, and is probably published in the interest of men who are concerned more in making money out of stock speculation than from the development of our mines. The *British Columbia Mining Record* is in favour of mining development in this province and the proper and legitimate introduction of capital for that purpose. The *Mining Review* says that Trail Creek is on its knees to the public for money for legitimate mining. Trail Creek is nothing of the sort. It certainly invites capital, and all it has to do is to let the wealth of the district be known in a thoroughly reliable manner and not through misleading prospectuses and it will obtain all the capital it requires. Trail Creek is all right and as its great mineral resources become more known through the efforts of its mining men and reputable mining newspapers money will flow in. It is already flowing in as we all know and the only thing that may hinder it is the efforts of mendacious sheets such as the *Mining Review* of Rossland.

"Authorized Capital."

IN this issue we publish a list of incorporated mining companies. We do not pretend to say that it is complete, but it gives a very fair idea of the large amount of incorporated capital there is at the present moment in British Columbia mining. It is safe to say that over two hundred million dollars represent the capital stock of our mining companies, and of this immense sum how much is likely to be devoted to the development of our mines? We fear a very small proportion indeed.

Most of it is, of course, only on paper, but it must have been placed there for a purpose, which we believe was, in most instances, one of pure speculation. The good of our mines had little to do with it.

This inflation gives a fictitious character to mining investments in British Columbia. It is not fair to those who invest in shares, and leaves the door open for the worst kind of stock gambling. No company should be incorporated for a larger sum than is actually required to carry on its business with a reasonable amount in reserve to provide against contingencies.

In Montana we believe all incorporated capital over a certain amount is taxed by the State, and the result is that companies are careful to incorporate only for such sums as may reasonably be required. The only danger we see in a law of this kind if applied to British Columbia is that it might have a deterring effect upon the introduction of capital generally. Capital as a rule is exceedingly sensitive to the imposition of a tax upon it, and

we cannot afford at this time to take any step likely to frighten it away.

But we think that where an application for the incorporation of a mining company is made the promoters should be obliged to show that the capital they wish to incorporate on is warranted.

We venture to say that if speculative promoters were kept in check and the authorized capital of a number of the companies now in existence reduced to what it should be the value of their shares would advance all along the line, and individual investors be benefitted.

Mammoth Water Wheel.

THE Pelton Water Wheel Company, of San Francisco, have recently furnished the Alaska Gold Mining Company, of Douglas Island, Alaska, a wheel of such extraordinary dimensions as to make a brief description of interest.

The wheel is twenty-two feet in diameter and is direct connected to the shaft of a Riddler duplex compressor, with air cylinders twenty-four inches in diameter by thirty-eight inch stroke, having a capacity of delivering 2,800 cubic feet of free air per minute at a pressure of eighty pounds per square inch.

The wheel weighs 25,000 pounds and serves the purpose of a fly wheel as well as prime mover. It runs under a water head of 480 feet at a speed of seventy-five revolutions and develops upwards of 500 horse-power.

A hydraulic speed regulator is attached to the wheel, which controls its movement so that a uniform air pressure is maintained on the receiver.

The wheel is made of this large diameter to give proper speed to the compressor under the head in this case available.

This is probably the largest tangential wheel ever constructed, and shows the remarkable facility with which Pelton wheels can be adapted to unusual and extraordinary conditions. In a case like this the transmission machinery to carry such an amount of power would involve a heavy outlay as well as constant expense in maintenance, besides a material loss of power. A direct connection to the water wheel of machinery operated without intermediate gearing is, therefore, of great advantage wherever possible.

HAPPENINGS AT THE MINES.

ALBERNI

THE road to the Duke of York is simply excruciating. Beyond the Duke of York to the Consolidated Alberni the road is better, but that is due to private enterprise. The development work is still being vigorously carried on on many of the quartz prospects, with the result that greater confidence is felt in the ultimate success of the district as an important mining centre.

Messrs. A. J. C. Galletly and G. A. Kirk returned from Alberni lately. Work on the Duke of York mine has progressed satisfactorily, although the low stage of water retarded operations considerably. The ground sluices were cleaned up and will be moved up stream and on to bed-rock before the high water sets in, after which hydraulicizing with two monitors will be continued regularly all winter. The ground thus far washed out was old dig-

gings, which Chinamen were supposed to have worked out, and some of the quicksilver used by those miners was recovered in the sluice boxes. The yield of gold is not stated, but it is known to have been quite as large as it was expected to be. Good results may be expected from this mine during the winter and next summer.

BOUNDARY CREEK

A good strike, made by W. A. Corbett on the Lake claim this week, is evidently a rich pay streak.

Work on the Skylark is making rapid headway, the breakage of the whym notwithstanding. It is not at all improbable that a big low grade copper deposit lies almost alongside of the smaller high grade silver-gold ore on which hitherto the Skylark has based its reputation to be considered a mine.

A claim, called the Barrow, from all accounts has a big surface showing. The ore is iron-stained quartz carrying free gold and copper pyrites.

As the result of a little surface prospecting of the new iron-capped leads up Lost Creek, pyrrhotite has been uncovered.

Jack Farrell, while prospecting on the Buttercup, in Wellington camp, the other day, found a small quartz lead which has since widened out to nearly three feet. The quartz carries copper sulphurets and runs well in gold.

After a few days' work last week on the Cracker Jack, in Greenwood camp, copper ore was found beneath an iron capping. The ledge was stripped for some eleven feet; no walls were found.

All the water has been removed from the Stemwinder shafts. Sinking is in progress on one shaft and a drift is being run at the foot of another.

W. T. Shatford and A. Gosens last week located the Slamax, in Camp McKinney, with fairly good surface indications. The vein is quartz with a pay streak of clean galena.

CARIBOO

During the last few weeks a great many quartz locations have been made, and it is expected that something definite will be done to test the value of many quartz ledges that surround the district. A. D. Whittier, acting for an English syndicate, is spending a large amount of money in development work. Under the same management a camp will be built at Snowshoe Mountain, and operations carried on there during the winter. The same company is also working on Grouse Creek, and it is expected that good 'paying ore will be struck this winter on all of these locations.

The Cariboo Gold Fields Company are still working their hydraulic claim on Williams Creek. They are preparing to clean-up, and it is expected they will finish in about a couple of weeks.

The Black Jack hydraulic claim, situated next to the C. G. F. C. claim, has just completed a clean-up for the season of 200 ounces.

All the hydraulic claims in the district sent in more favourable reports this season than they have done for years. Most of the claims are just getting in good shape to work; they are reaching bed-rock, consequently they are getting more gold.

Mr. Delatier, a mining expert, living at Denver, has been sent up by a company of French capitalists to see some Cariboo properties. If favourable

report is made as seems reasonable to expect large works will be the result of the French company's mines on Quesnelle River.

Mr. Johnson, president of the Cariboo Gold Mining and Exploration Company, who has been on Antler Creek, where the company's mining property is, states that his company will work on an extensive scale next season and that the result of their work this season has been to prove that the ground owned by them is of value, and that from the present showing there is no fear of that part of Cariboo not turning out well.

The North Star mine, three miles from Quesnelle, is reported as having made a successful run.

FORT STEELE

A party of experts are prospecting near the divide at the head of the St. Mary's River.

The mines in the vicinity of Perry Creek are rapidly coming to the front. This portion of the district is noted for being a gold country. The ore is free milling and the veins quite large.

T. McVittie has surveyed the placer workings on Perry Creek. It is the intention of the company to commence preparatory work at once.

A large number of men are at work on Huckleberry Hill, the North Star company having some thirty men employed at the mine. It is reported that a large amount of ore will be taken out this winter.

Parties are at work placer mining below the forks of Perry Creek. They will erect buildings and remain there all winter. As it is known that the gravel is rich, success is almost assured.

KAMLOOPS

The shaft and drift in the Python claim on Coal Hill have now penetrated the lead to a depth of over forty feet, and the appearance at the bottom remains as promising as ever. There is ore on all sides all the way down and the main lead that is followed seems to be increasing in richness all the time. The latest assays give about thirty-five per cent. in copper and from \$4 to \$8 in gold.

Capt. Robert Lyons, of the Iron Mask (Mr. Newman's grand prospect on Copper Hill), came into Kamloops recently, bringing with him samples of copper-gold ore from a pay streak a foot or more wide running from top to bottom of the breast, and as fine a sample of ore as could be got in any Trail Creek mine. Specks of free gold can be seen in the solid copper ore.

Mr. Newman and James Russell have put a force of men at work on a new claim called the Gold Mask, situated about four miles further west than the present workings. Here there is a surface showing fully 150 feet wide, running west by south and dipping south. An immense body of pure magnetic iron has been discovered just east of the Gold Mask, situated about four miles further west than the present workings, which, although of no commercial value at present, serves to point unmistakably to the presence in this belt of immense bodies of clean ore.

The Cinnabar mines on Kamloops Lake near Savonas, have nearly completed their furnace, which has a capacity for treating about twenty-five tons of ore per day. During the past season, with only a prospecting plant, enough quicksilver to sup-

ply the local demand and some for export has been manufactured.

KASLO

The prospectus of the London Hill Development and Mining Company will be in the hands of the public in a few days. The capital of the company is \$150,000, divided into six hundred thousand shares of twenty-five cents each. The price at which the company is acquiring the property (that is the four claims forming the London group) is \$100,000, payable \$10,000 in cash and \$90,000 in 360,000 fully paid shares.

The Duncan-Lardo River is to be opened up from Kootenay Lake to Howser Lake, and a start will probably be made this fall. The above statement is founded upon advices from Mr. Hewitt Bostock, M.P., who says that the item of \$50,000 down on the supplementary list as a first appropriation to cover preliminary work in opening up the Lardo-Duncan River, as recommended by Mr. Gamble, will pass.

Dunc. and Dan McPhail, Phil. McDonald, Harry Griffith, and Neal McFadden are rejoicing over an assay certificate which gives them 3,500 ounces of silver from an average sample of several inches of ore in a strong vein on one of their Hall Creek claims, near the Bannockburn.

Hugh Sutherland, of Hudson's Bay Railway fame, has bonded the Topaz and Silver Nugget, lying between Eight and Ten-Mile Creeks, and belonging to Swan and the Clough brothers. The figure was \$30,000. Usual terms.

There are quite a number of prospects on Springer Creek and Ten Mile Creek being developed, and which will, in all probability, ship considerable ore during the winter.

MIDWAY

A very rich strike has been made in the Ore claim in White's camp. The claim lies to the south of the Mabel. The vein matter is quartz heavily charged with copper pyrites, and the character of the quartz suggests that it may run well in gold.

The Victoria claim is situated on Rock Creek, directly east of Camp McKinney, and since its acquisition by Seattle and Victoria capitalists, all is hurry and bustle in its neighbourhood.

On the 24th of December, 1895, a bond was given on the Gold Drop claim, situated in Greenwood camp by the owner, Mr. Joseph Hetu, to the Montreal and British Columbia Prospecting and Promoting Company, limited. The operations of the bondholders have been so successful as to result in a purchase of the claim.

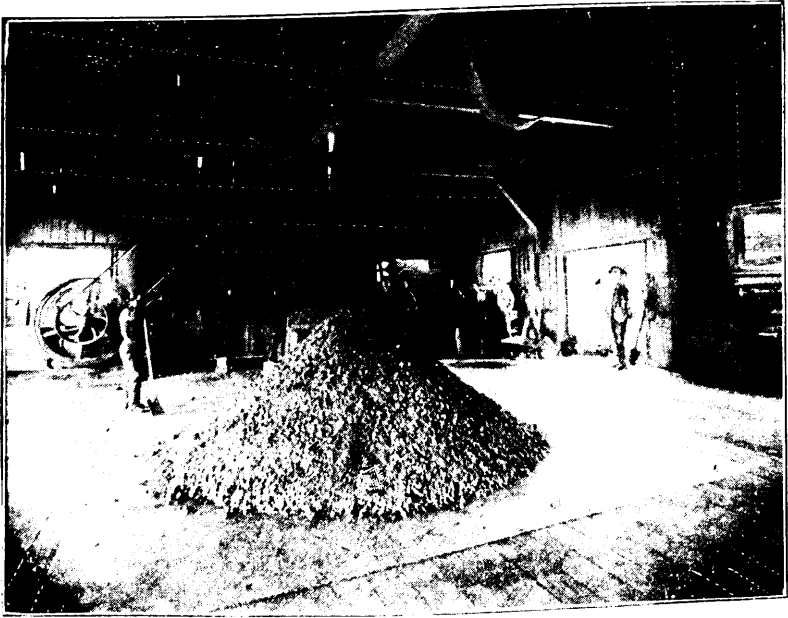
On the Butterfly claim, in Skylark camp, the ore body, some ten or twelve feet wide, is a white quartz, seamed and heavily impregnated with copper pyrites, and carrying as well gold and silver.

NANAIMO

Messrs. C. Chapman and E. Gartley returned lately from a twelve days' prospecting trip in the mountains around the Nanaimo lakes. Mr. Gartley is most enthusiastic in regard to the mining prospects of this district, and staked off four claims, with six different ledges, one ten feet wide, to the south of the first Nanaimo lake.

NELSON

The Reco owners have formed an incorporated



INTERIOR VIEWS OF THE NELSON SMELTER.

company, and stocked the mine for \$1,000,000. There is none of the stock on the market, and it will probably pay its owners more than any kind of investment. The company intends putting in a concentrator.

The value of the ore, bullion, and matte shipments from Southern Kootenay aggregates \$2,437,508. For the corresponding period last year the value was \$1,607,250.

M. Tebo and John Collinson returned to Nelson the other day after a lengthy prospecting trip, bringing with them specimens of rock somewhat resembling talc. The rock was from a ledge located by them at the head of Sproule Creek and there was nothing in the rock to indicate that it carried gold, but an assay was made out of curiosity. The first assay by W. F. McCulloch, went \$628 in gold. It created considerable excitement and several parties left for the scene of the find at once.

The Idaho mines have paid another \$20,000 dividend, and the announcement is made that regular monthly dividends of from \$15,000 to \$20,000 may be expected. These mines have paid over \$60,000 in dividends heretofore.

An important strike has been made on the Bluebird mine in the Slocan. This strike is on a new vein, which is from two to four feet wide, and assays from the ore run as high as 270 ounces in silver and fifty per cent lead.

NEW DENVER

The Reco will put in a \$50,000 concentrator and tramway.

Recent assays from ore taken from across the face of the pay streak on the Skylark show 460 ounces in silver and \$40 in gold. It is a honey-combed rock, and shows native gold and black metal quite freely.

Ten tons from the Reed and Robertson, and four tons from the Currie, were shipped to the Tacoma smelter this week. It is a trial shipment and expected to return 125 ounces in silver.

ROSSLAND

Some of the first carload of ore from the Evening Star taken to the Trail smelter assayed eight ounces in gold.

W. Lane has made a splendid strike on the Iron Cliff, situated on the North Fork of the Salmon River, near the Ben Hassan. After running a tunnel of twenty-six feet, a fine body of ore was struck which ran from \$60 to over \$100 to the ton.

All late reports from Christian Lake testify to that country containing strong ledges of very rich ore.

Messrs. John Moynahan and W. A. Campbell have let a contract for a seventy-foot tunnel to be driven on the Northern Belle.

The main ledge on the Young British America has been discovered and stripped for about 300 feet, in which it shows a width varying from ten inches to six feet, assaying as high as \$15 in gold and five per cent. copper.

The contract on No. 2 shaft, which is now down thirty feet on the Phoenix is finished. The shaft is situated about 300 feet from No. 1 shaft, to the westward, on the same ledge. Rather better ore has been obtained here than in No. 1 shaft, assays taken from the bottom showing \$39 in gold.

The most recent strike of note is that made on the Red Mountain claim, which property joins the City of Spokane, the Cliff and the Pilgrim. The original lead was only twelve inches wide, but it has now widened, after about 200 feet of stripping, to five feet. The best assay from this lead shows \$42 in gold, thirty-two ounces silver, and eleven per cent. copper.

A good body of ore has been struck on the Iron Queen, the eastern extension of the Empress.

On Monday some rock was taken out of the Evening Star tunnel which gave an assay of \$1,600 to the ton.

SALMON RIVER

S. Charles Davis and J. C. Cox returned lately from a prospecting trip through the Salmon River country. They went first to Waterloo, and from there travelled over the divide down the west fork of Salmon River to Craig's camp. They found snow on the mountain tops. Continuing southward they crossed the Nelson & Fort Sheppard Railway at the north fork, then went four miles through a syenite country, having slate in the lower levels. About four miles from the railway they located a three-foot vein of decomposed quartz in a granite formation carrying free gold. This vein crops out for the full 1,500 feet of the claim which they located. Mr. Davis thinks this is a good mineral country, which has been explored very little this year or last. There is a great deal of good iron capping in that part, and surface indications would lead one to believe that much valuable mineral will be found there.

SANDON

Ore has been struck in the lower tunnel of the new workings on the Surprise.

The Queen Bess has shipped sixty tons of ore to Tacoma. No more will be shipped from this mine until it can be rawhided and then shipped in bulk instead of in sacks as in the past.

The Mountain Chief will start shipping ore next month. There is at present about 300 tons of ore on the dump, most of which will find its way to the smelter.

TEXADA ISLAND

The steamer *Joan* brought down the encouraging news that the output of gold bearing ore steadily continues at the Van Anda mine on Texada Island.

TRAIL

Trail smelter is undergoing some repairs, and although two blast furnaces are shut down, about 200 tons a day are being put through. When in full swing again, which will be after only a few days, about 400 tons a day will be treated.

VERNON

A very promising mineral claim has been located at the head of B X Creek by Messrs. O'Keefe, Fuller, Ethier and McMullen. The rock carries heavy galena in large quantities, and looks equal to anything we have yet seen in this district.

THIS PAPER is kept on file at E. C. DAKE'S Advertising Agency, 64 and 65 Merchants Exchange, San Francisco, California, where contracts for advertising can be made for it.

Incorporated Mining Companies of B.C.

NAME OF COMPANY.	Capital Stock.	Date of Registration.	Office in B.C.
Pacific Bullion Mining Co.	\$1,000,000	13 Mch. '89	Wrm Spgs. W K
The Kootenay No. 1 Mining Co.	600,000	19 June, "	Ainsworth
The Kootenay Smelting & Trading Syndicate, Ltd.	£40,000	4 Nov. "	Revelstoke
Revelstoke Mining Co., Ltd.	£40,000	23 Dec. "	"
Fraser River Gold Gravels Syndicate, Ltd.	£7,000	7 Feb. '90	Vancouver
North Western Gold and Silver Mining Co.	\$1,000,000	26 May, "	Victoria
Middle Creek Gold Mining Co.	5,000,000	28 "	"
Columbia Mining Co. Ltd.	500,000	7 Aug. "	Ainsworth
The Empire Consolidated Mining Co.	500,000	11 Aug. "	"
The West Kootenay Mining Co.	1,000,000	23 Feb. '91	Kootenay L'ke
Le Roi Mining & Smelting Co.	2,500,000	22 June, "	Trail
Jeanette Mining Co.	500,000	28 Sept. "	Ainsworth
Neosho Mining Co.	50,000	5 Jan. '92	"
The Western Consolidated Mining Co. Ltd.	1,000,000	15 Aug. "	"
The Columbia-American Mining Co.	500,000	16 "	"
Kootenay Mining & Smelting Co.	30,000	23 "	Pilot Bay
Kootenay Lake Reduction Co.	250,000	23 "	"
Gold Queen Mining Co.	400,000	30 Sept. "	Yale
Schafer Gold and Silver Mining Co.	400,000	16 Dec. "	Ainsworth
Spokane & Great Northern Mining Co.	5,000,000	2 Feb. '93	Victoria
Duluth & St. Paul Mining Co.	2,000,000	8 Feb. "	Ainsworth
Freddie Lee Mining Co.	500,000	23 Mch. "	Kaslo
Josephine Mining Co.	600,000	9 Oct. "	Nelson
Northern Belle Mining Co.	250,000	13 Dec. "	Kaslo
Canadian Northwest Mining Co.	2,000,000	31 Mch. '94	"
Kootenay & Columbia Prospecting & Mining Co.	40,000	10 April "	"
The Canadian Pacific Mining & Milling Co.	500,000	9 May, "	Ainsworth
Kootenay Mining & Smelting Co.	2,300,000	6 Aug. "	Pilot Bay
Horseshoe Gold Mining Co.	1,000,000	4 Sept. "	Victoria
Scott Mining Co.	100,000	6 "	Yale
Columbia Mining Co.	1,000,000	6 "	"
Bellingham Bay Hydraulic Mining Co.	30,000	11 Jan. '95	French Ck W K
War Eagle Gold Mining Co.	500,000	18 Feb. "	Rossland
Trail Mining Co.	250,000	8 Mch. "	"
The Cariboo Gold Fields Ltd.	£100,000	26 "	Barkerville
The Finch Mining Co. Ltd.	\$ 6,000	19 April, "	Vancouver
Kootenay Hydraulic Mining Co.	500,000	3 May, "	Waneta W K
The Good Hope Mining & Milling Co.	500,000	27 "	Rossland
Paris Belle Gold Mining Co.	800,000	27 "	"
Boundary Creek Mining Co.	1,000,000	28 June, "	Bndry Fall YD
Eureka Consolidated Mining Co.	500,000	28 "	Rossland
Robert E. Lee Mining Co.	500,000	28 "	"
West Le Roi & Josie Consolidated Mining Co.	500,000	28 "	"
Idaho Mining & Smelting Co.	500,000	16 July "	"
Centre Star Mining & Smelting Co.	500,000	16 "	"
Columbia Hydraulic Co.	160,000	19 "	Revelstoke
British American Mining Co.	500,000	1 Aug. "	Rossland
Lookout Mining & Milling Co.	250,000	1 "	"
The Cariboo Reefs Development Co. Ltd.	£20,000	7 "	Victoria
Crown Point Mining & Milling Co.	\$1,000,000	10 "	Rossland
Kootenai Mining & Milling Co.	1,000,000	10 "	"
Iron Horse "	1,000,000	10 "	"
Spokane Ore Co.	5,000,000	22 "	"
St. Elmo Gold Mining Co.	1,000,000	26 "	Red Mtn, W K
High Ore Gold Mining & Smelting Co.	500,000	3 Sept. "	Rossland
Phoenix Gold Mining Co.	500,000	3 "	Deer Park, W K
Evening Star Mining Co.	1,000,000	5 Oct. "	Rossland
Gold Hill Mining Co.	500,000	14 "	"
Virginia Gold Mining Co.	500,000	26 "	"
Silverine Gold "	500,000	30 "	"
Poorman Gold "	500,000	8 Nov. "	"
Caledonia Consolidated Mining Co	500,000	13 "	"
Dixie Mining & Milling Co.	500,000	18 "	"
O. K. Gold Mining Co.	1,000,000	23 "	"
Great Western Mining Co.	1,000,000	20 Dec. "	"
Old Ironsides "	1,000,000	27 "	Midway
Josie Gold "	700,000	28 "	Trail Creek
Invicta Gold Mines, Ltd.	£100,000	13 Jan. '96	Wild Hrs C E K
Iron Mask Mining Co.	\$ 500,000	2 Feb. "	Rossland
French Creek Mining Co.	2,000,000	11 "	Revelstoke
Main Quenelle Gold Dredging & Mining Co.	250,000	15 "	Asheroft
Crow's Nest Coal & Mineral Co. Ltd.	\$2,000,000	25 Mch. '89	Victoria
Willow River Gold Mining "	25,000	1 May, "	"
Salt Spring Island "	40,000	6 "	"
Donald Gold "	10,000	13 "	Donald
Alpha Milling & Laura Hydraulic "	120,000	22 "	Victoria
Cariboo Creek "	20,000	6 June, "	"
Fexada Lime Co.	50,000	19 "	Donald
Lilloet Hydraulic Mining Co.	20,000	9 July, "	Vancouver
The Blk. Jack Quartz "	10,000	21 Aug. "	N Westminster
Anglo-American "	120,000	18 Mch. '90	Barkerville
Crow's Bar "	3,000,000	15 May, "	Yale
Stevenson Gold & Platinum Hydraulic Mining Co. Ltd.	25,000	2 July, "	Vancouver
	1,000,000	17 Mch. '94	"

Bear Lake Consolidated Mining Co. Ltd.	500,000	18 April, '94	Victoria
Maud Hydraulic Mining Co.	25,000	31 Oct. "	Vancouver
The Montreal & British Columbia Prospecting & Promoting Co. Ltd.	20,000	19 Nov. "	"
The B.C. Gold Fields Exploration & Concessions Co. Ltd.	500,000	13 Mch. '95	"
The Vancouver Gold & Silver Exploration & Concessions Co. Ltd.	500,000	18 April, "	"
The Islander Gold Quartz Mining & Milling Co. Ltd.	100,000	11 Nov. "	Victoria
Peters Creek Gold Mining Co. Ltd.	25,000	7 Dec. "	Vancouver
Nip and Tuck Gold Hydraulic Mining Co. Ltd.	35,000	22 Jan. '96	"
Golden Gate Mining Co. Ltd.	60,000	29 "	"
Nest Egg Mining Co. Ltd.	500,000	31 "	Victoria
The Allerta & British Columbia Exploration Co. Ltd.	£ 20,000	22 April, '91	Victoria
Byron N. White Co.	\$ 500,000	27 May, '93	Nelson
E. Eootenay Explorat'n Syndicate.	\$ 80,000	5 Oct. "	East Kootenay
American Development Co.	\$ 100,000	17 Sept. '94	New Denver
Sloean Surprise Co.	225,000	27 Dec. "	Kas'o
Cataract Hydraulic Co. Ltd.	18,000	31 July, '95	Victoria

NAME OF COMPANY.	Capital Stock.	Date of Registration.	Head Office.
Helen Gold Mining Co.	\$ 600,000	11 April '96	Spokane, Wa.
Pittsburg & Cariboo Gold Dredging Co.	500	19 "	Pittsburg, Pa.
Rochester Gold Mining Co.	500,000	11 "	Spokane, Wa.
Van Anda Copper & Gold Co.	5,000,000	6 May, "	Seattle, Wa.
Jumbo Gold Mining	500,000	7 "	Spokane, Wa.
St. Mary	500,000	11 "	"
The Lightning Creek Gold, Gravel and Drainage Co. Ltd.	\$1,000,000	27 Feb. '96	Vancouver, B.C.
43 M. and M. Co. of Cariboo, Ltd.	600,000	8 "	North Bend
British Columbia Syndicate, Ltd.	160,000	6 "	Rossland
Consolidated Alberni Gold Mining Co. Ltd.	500,000	18 "	Victoria
Antler Creek Mining Co. Ltd.	1,000,000	19 "	Vancouver
Georgia Gold Mining Co. Ltd.	1,000,000	14 April, "	Victoria
Quadra Mining & Milling Co.	500,000	14 "	"
Freeburn Gold Mining Co.	500,000	20 "	"
Bunker Hill & Blackwood Mng Co.	500,000	30 "	Vancouver
Allison Ranch Hydraulic Mng Co.	250,000	1 May, "	New Westminster
Palo Alto Gold Mining Co.	1,000,000	13 "	Victoria
B.C. Mining & Development Syn.	2,000,000	15 "	Rossland
Wolverine Gold Mining Co.	500,000	18 "	Trail
British Columbia School of Mines.	30,000	14 "	Vancouver
Hansard Gold & Copper Mining Co	1,000,000	26 "	Nelson
John A. Hume Co.	25,000	1 June, "	New Westminster
Mineral Hill Gold Mng. Co. Alberni	750,000	30 May, "	"
San Joaquin Gold Mining Co.	1,000,000	9 June, "	"
Alberni Mountain Rose Gold Mining Co.	250,000	13 "	Vancouver
London & Rossland (B.C.) Mng. Co.	750,000	1 "	Rossland
Rossland Star Gold Mining Co.	500,000	1 "	"
Rossland Syndicate.	50,000	10 "	"
Alliance Prospecting Syndicate B.C	100,000	13 "	Vancouver
Eric Gold Mining Co.	1,000,000	18 "	Rossland
Mount Adams Mining Co.	150,000	12 "	New Denver
Queen Gold & Silver Mining Co.	500,000	17 "	Vancouver
Red Mountain View Gold Mng. Co.	1,000,000	22 "	Rossland
Victoria Mining & Develop. Co.	1,000,000	17 "	Victoria
Columbia Mining Co. of Victoria	100,000	26 "	"
Kootenay-London Mining Co.	1,000,000	19 "	Rossland
Pittsburg Gold Mining Co.	750,000	24 "	"
San Francisco Gold Mining Co.	1,000,000	30 "	"
British Lion Mining & Milling Co. C. & C. Mining Co.	600,000	25 "	"
Golden Cache Mines Co.	500,000	2 July, "	"
Ivanhoe Gold Mining Co.	500,000	10 "	Vancouver
Independent Mining Co.	1,000,000	3 "	Rossland
B.C. Gold Mining Co.	1,000,000	20 "	New Westminster
Hinekley & Black Colt Mining Co	1,000,000	25 "	Vancouver
Alhambra Gold & Copper Mng. Co	1,000,000	23 "	Kaslo
Bondholder Mining Co.	600,000	5 Aug. "	Victoria
Gold King Mining Co.	1,000,000	1 "	Vancouver
Rainy Day Gold Mining Co.	1,000,000	1 "	Rossland
West Wellington Coal Co.	600,000	5 "	"
Channe Mining Co.	500,000	1 "	Vancouver
Morning Glory Mining Co.	1,000,000	3 "	"
Columbia & Ontario Gold Mining Co.	500,000	12 "	Vernon
Pacific Consolidated Gold Mng. Co.	750,000	13 "	Rossland
Phoenix Consolidated Mining Co.	500,000	17 "	Victoria
Rossland Homestake Gold Mng. Co.	750,000	15 "	Sandou
Silver Belle Mining Co.	1,000,000	14 "	Rossland
Two Friends Mining Co.	1,000,000	17 "	"
Young British American Gold Mining Co.	750,000	19 "	Vancouver
B.C. Consolidated Gold Mining Co.	1,000,000	17 "	Rossland
Consolidated Sable Creek Mining Co	1,000,000	21 "	Vancouver
Delacola Gold Mining Co.	1,500,000	19 "	Rossland
Ferguson & Orr Co.	1,000,000	21 "	"
Lardeau Mining & Development Co	10,000	21 "	Trail
Pieton Development Syndicate.	500,000	24 "	Revelstoke
Standard Gold Mining Co.	15,000	24 "	Nelson
Yale Gold & Copper Mining Co.	1,000,000	26 "	Victoria
Badger Tourmaline Consolidated Gold Mining Co.	1,000,000	26 "	Rossland
Mount Mabel Mining & Smelting Co	1,500,000	28 Aug. "	Rossland
Seymour Creek Gold Mining Co.	1,500,000	28 "	New Denver
Copper Belle Mining Co.	1,000,000	28 "	Vancouver
Ida Queen Gold Mining Co.	1,000,000	4 Sept. "	Rossland
La Regina Gold Mining Co.	1,000,000	8 "	"
Beaver Quartz Mining Co.	750,000	26 Aug. "	"
Colonna Gold Mining Co.	1,000,000	10 Sept. "	Vancouver
Gold Hill Quartz Mng. Co. Fairview	1,000,000	14 "	Rossland
	750,000	10 "	Victoria

Athabasca Gold Mining Co.	1,000,000	13	"	'96	New Westm'str
Alf Gold Mining Co.	1,000,000	21	"	"	Rossland
English & French Gold Mining Co.	2,000,000	19	"	"	Kaslo
Fanny Bay Gold Mining Co.	600,000	17	"	"	Grand Forks
Kootenay & Slovan Prospecting and Promoting Co.			"	"	Vancouver
Kootenay Salmon Gold Mining Co.	100,000	16	"	"	"
London Hill Develop. & Mng. Co.	600,000	16	"	"	Rossland
Reco Mining & Milling Co.	150,000	17	"	"	Kaslo
Electrical Reduction & Refining Co.	1,000,000	18	"	"	Sandon
Eschequer Gold Mining Co.	25,000	28	"	"	Rossland
Hercules Gold Mining Co.	1,000,000	19	"	"	Nelson
King Solomon's Mines	2,000,000	28	"	"	Rossland
Northern Light Gold Mining Co.	500,000	24	"	"	Vancouver
Comander Mining & Smelting Co.	500,000	16	"	"	Victoria
Lily May	500,000	13	"	"	"
Rambler & Cariboo Consolidated Gold & Silver Mining Co.	1,000,000	20	"	"	"
Bean Pot Gold Mining Co.	500,000	23	"	"	"
Buffalo	500,000	22	"	"	"
Camp B rd	1,000,000	27	"	"	"
Consol	1,000,000	27	"	"	"
Acme	1,000,000	27	"	"	"
Beaver	600,000	3	June,	"	"
Blue Bird	750,000	28	May,	"	"
Crown Point Gold	600,000	1	June,	"	"
Gold Stream	1,000,000	30	May,	"	Cudahy, Wis.
Hattie Brown Gold Mining Co.	1,000,000	30	"	"	Spokane, Wa.
Mayflower	1,000,000	28	"	"	"
Monarch	1,000,000	3	June,	"	"
Monte Cristo	750,000	30	May,	"	Northport, Wa.
Morrison	1,000,000	3	June,	"	Spokane, Wa.
Republic	1,000,000	30	May,	"	"
Wonderful Group	750,000	30	"	"	"
Ontario Gold Mining Co.	1,000,000	5	June,	"	"
Emu	1,000,000	12	"	"	"
Green Crown Mining & Milling Co.	£10,000	22	"	"	England
California Gold Mining Co.	\$1,000,000	11	"	"	Spokane, Wa.
Interstate	2,500,000	26	"	"	"
Zulte Gold-Copper	750,000	25	"	"	"
Delbi Mining & Milling	1,000,000	6	July,	"	"
Randolph Gold Mining	750,000	13	"	"	"
Deer Park	750,000	13	"	"	"
Little Jumbo	1,000,000	24	"	"	"
Quesnelle & Cariboo (B.C.) Gold Fields Exploration Syndicate.	£12,000	24	"	"	Sheffield, Eng
Rob Roy Gold Mining Co.	\$ 500,000	27	"	"	Spokane, Wa.
Rossland Red Mountain Gold Mining Co.			"	"	"
Fairview	1,000,000	27	"	"	"
East Star Gold Mining Co.	500,000	30	"	"	"
Big Valley	1,000,000	12	Aug.	"	Seattle, Wa.
Golden Creek Gold Mines	£12,000	18	"	"	London, Eng
Golden River, Quesnelle, Id.	£350,000	18	"	"	"
Kootenay Consolidated Mining Co.	\$1,000,000	21	"	"	Everett, Wa.
Price Eaton Co.	500,000	19	"	"	San Francisco
Noble Five Consolidated Mining & Milling Co.	1,000,000	2	Sept.	"	Spokane, Wa.
Delaware Mining & Milling Co.	1,000,000	3	"	"	"
Elkhorn Silver Mining Co.	1,000,000	8	"	"	"
Portland Gold	600,000	14	"	"	"
Vancouver & British Columbia General Exploration Co.	£25,000	14	"	"	London, Eng
Grand Prize	\$1,000,000	19	"	"	Spokane, Wa.
Hill Top Gold Mining Co.	1,000,000	18	"	"	"
Olive Mining & Smelting Co.	20,000,000	10	"	"	"
Silver King Gold Mining	750,000	19	"	"	"
Alberta	1,000,000	28	"	"	"
B.C. Exploring Syndicate	£20,000	24	"	"	London, Eng
B.C. Mining Co.	20,000	21	"	"	"
Chicago Gold Mining Co.	\$ 500,000	25	"	"	Spokane, Wa.
Lily May	1,000,000	1	"	"	"
Old Glory	1,000,000	29	"	"	Seattle, Wa.
B.C. Smelting and Refining Co.	2,500,000	2	Oct.	"	Jersey City, N.J.
Blue Bird Mining Co.	300,000	1	"	"	Spokane, Wa.
Big Three Gold Mining Co.	3,500,000	3	"	"	"
Celtic Queen	750,000	2	"	"	"
Koahinoor	1,000,000	5	"	"	"
Seattle Mining and Smelting Co.	6,000,000	5	"	"	"
Kootenay & Algoma Gold Mining Co.	1,000,000	3	"	"	Rossland, B.C.
Star Mining and Milling Co.	1,000,000	5	"	"	Sandon, B.C.
Silver Band Mining Co.	250,000	7	"	"	Victoria, B.C.

Union Iron Works, Machinery.
 The McGlew Ore Concentrator Co., Concentrators.
 The Babcock & Wilson Co., Water Tube Steam Boilers.
 The Goubert Manufacturing Co., Water Heaters, &c.
 Gates Iron Works, Rock and Ore Breakers, &c.
 Fraser & Chalmers, General Milling Machinery.
 The Metallic Roofing Co., Steel Shingles.
 H. W. Petrie, Machinist and dealer in Machinery.
 James H. Lancaster, Dredging and other Mining Machinery.
 Northey Manufacturing Co., Ltd., Pumping Machinery.
 Girard Water-wheel Co., Water-wheels.
 M. C. Bullock Manufacturing Co., Diamond Drills, &c.
 H. W. Caldwell & Son Co., Elevating Machinery, &c.
 Edward P. Allis Company, Mining and Milling Machinery.
 J. J. Norman Company, Gas and Gasoline Engines.
 Sullivan Machinery Co., Diamond Prospecting Drills.
 Electrical Engineering Co., Dynamos and Motors, &c.
 Canada Paint Co., Paints, &c.
 William Hoskins & Co., Hydro-Carbon Blow-pipes, &c.
 Gutta Percha and Rubber Manuf'g Co., Rubber Goods.
 The Dominion Wire Rope Co., Wire Rope.
 Dodge Wood Split Pulley Co., Split Pulleys.
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 Joshua Hendy Machine Works, Mining Machinery of all kinds.
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 Merrill's Hydraulic Quartz Mills.
 The Pelton Water Wheel.
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Alberni.—Steamboat communication with Victoria and by stage with Nanaimo.

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Barkerville.—Two hundred and eighty-five miles from Ashcroft; stage from Ashcroft. See stage lines.

Bonaparte.—Six miles from Ashcroft; stage from Ashcroft.

Big Bar.—Stage from Ashcroft.

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Horsety.—Nearest post office, 150 Mile House; stage from Ashcroft; change at 150-Mile House.

Lac La Hache.—One hundred miles from Ashcroft on stage line from Ashcroft to Barkerville.

Lillooet.—Weekly stage from Ashcroft.

Lightning Creek.—Between Quesnelle and Barkerville, by stage to Stanley.

One Hundred Mile House.—Stage from Ashcroft.

One Hundred and Fifty Mile House.—Stage from Ashcroft.

Quesnelle.—Two hundred and twenty-five miles from Ashcroft; stage from Ashcroft.

Quesnelle Forks.—Stage road from Ashcroft.

Soda Creek.—Stage from Ashcroft.

Stanley.—Stage from Ashcroft.

Slough Creek.—Stage from Ashcroft.

Tailc. Lake.—Stage from Ashcroft, changing at Soda Creek.

Willow River.—Stage from Ashcroft.

Williams Creek.—At Barkerville.

CASSIAR.

Drase Creek.—

McDame Creek.—

COAL CENTRES.

Crow's Nest Pass.—

Nanaimo.—From Victoria, all rail, 73 miles. Steamer from Vancouver.

Union.—

Wellington.—From Victoria, all rail, 83 miles. Steamer and rail from Vancouver.

EAST KOOTENAY.

Cranbrook.—Nearest railway station, Golden. Communication by steamer from Golden to Windermere, thence by stage.

Fairmont Springs.—Nearest railway station, Golden. Steamer to Windermere, thence by stage.

Fort Steele.—Steamer and road from Golden. Steamer from Jennings, Montana, G.N.R.R.

Galbraith Ferry.—Steamer from Golden. Stage in winter.

Galena.—Nearest railway station, Golden; thence by steamer. Stage in winter.

Golden.—On the main line C.P.R., 475 miles from Vancouver.

Moyie River.—From Fort Steele, 25 miles.

McMurdo District.—Steamer and trail from Golden, 55 miles.

Perry Creek.—Steamer from Golden to Fort Steele, thence by road.

St. Mary's.—From Fort Steele, 20 miles trail.

Thunder Hill.—One hundred and fifteen miles from Golden. Steamer in summer, stage in winter.

Windermere.—Steamer from Golden. Stage in winter.

Wild Horse Creek.—From Fort Steele, two miles trail to Kootenay River.

WEST KOOTENAY.

Ainsworth.—Twenty-eight miles from Nelson and twelve from Kaslo. Steamer communication.

Albert Canyon.—A station on the C.P.R., 400 miles from Vancouver.

Big Bend District.—Fifty miles from Revelstoke by trail and boat.

Cariboo Creek.—Steamer from Nakusp, ten miles.

Fort Sheppard.—Nearest post office, Trail Creek; communication by rail and steamer from Revelstoke.

Illecillewaie.—On the main line C.P.R., 407 miles from Vancouver.

Kaslo City.—Thirty-five miles from Nelson; communication by steamer.

Lardena City.—Forty miles from Revelstoke; communication by steamer.

Lardo-Duncan.—Steamer from Kaslo to head of lake, thence river trail 40 miles.

Naku p.—North-west terminus of Nakusp & Slocan Railway, 50 miles from Revelstoke. Steamer communication from Revelstoke tri-weekly.

Nelson.—Thirty miles from Robson; is the eastern terminus of the Columbia & Kootenay Railway, and also on the Spokane & Northern Railroad. Steamer from Revelstoke.

New Denver.—Steamer from Revelstoke and rail from Nakusp; all rail from Kaslo. Distant from Revelstoke, 73 miles, from Kaslo, 28 miles.

Pilot Bay.—Eighteen miles from Kaslo, thence by steamer.

Revelstoke.—On main line C.P.R., 379 miles from Vancouver.

Rossland.—Seven miles from Trail Creek by road or stage.

Sproat's Landing.—One hundred and sixty miles from Revelstoke, and one and a half miles from Robson.

Springer Creek and South Slocan Camps.—From New Denver by steamer, twenty miles.

Sandon and Cody Creek.—All rail from Kaslo, 29 miles. Steamer and rail from Revelstoke via Nakusp and Three Forks. Distant from Three Forks, four and a half miles.

St. Mary's Country.—Steamer from Kaslo or Nelson to Davie Townsite, thence trail.

Three Forks.—Steamer from Revelstoke to Nakusp, thence rail; from Kaslo, all rail. Distant from Revelstoke, 82 miles; from Kaslo, 24 miles.

Trail.—Rail from Spokane to Northport, thence steamer. All steamer from Revelstoke, or steamer and rail via Nelson.

Trout Lake City.—Steamer and stage from Revelstoke.

LILLOOET.

Bridge River, Cayuse Creek, Fraser River.

YALE.

Boundary Creek.—Nearest railway station on the S. and O. R., Okanagan Landing, thence by steamer to Penticton and on by stage to Midway.

Fairview Camp.—Communication by boat from Okanagan Landing to Penticton, thence by stage.

Kettle River.—Steamer from Okanagan Landing to Penticton, thence by stage.

Midway.—Rail from Sicamous to Okanagan Landing, thence steamer Penticton and on by stage.

Okanagan Mission.—Rail from Sicamous to Vernon, thence by stage or by steamer from Okanagan Landing to Kelowna, thence by livery.

Osoyoos.—Rail to Okanagan Landing, steamer to Penticton, and thence by stage.

Rock Creek.—Rail to Okanagan Landing, steamer to Penticton, and thence by stage.

Yale.—Nicola Lake Stage from Spence's Bridge and Kamloops, 50 miles.

Any of these points may be reached by rail from Spokane to Marcus, and thence by stage twice a week.

Mail stage leaves Penticton for Midway every Thursday morning.

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TIME TABLE NO 10.

In effect June 8th, 1896.

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South bound; read down.		North bound; read up.	
Mon. Wed. Fri.	7 p.m. De ARROWHEAD	Ar 11.30 a.m. Wed. Fri. Sun.	
" " "	11 p.m. Ar NAKUSP	De 7.30 a.m. " " "	
" " "	12 m. De " "	Ar 6 a.m. " " "	
Tues. Thurs. Sat.	9 a.m. Ar ROBSON	De 8.30 p.m. Tues. Thurs. Sat.	
" " "	12 noon De " "	Ar 8 p.m. " " "	
" " "	2 p.m. Ar TRAIL	De 4.30 p.m. " " "	

Connections at Arrowhead with C.P.R. to and from Revelstoke and all points east and west; at Nakusp with Nakusp & Slocan R. to and from Slocan points; at Robson with C. & K. R. to and from Nelson and Kootenay Lake points; at Trail with C. & W. R. to and from Rossland; at Trail with Str. "Trail" to and from Waneta, Northport and Spokane.

TRAIL-NORTHPORT ROUTE, STEAMER "TRAIL."

Daily except Sun.	8 a.m. De TRAIL	Ar 4.30 p.m.	Daily except Sun.
" " "	9 a.m. Ar WANETA	De 3 p.m.	" " "
" " "	10 a.m. Ar NORTHPORT	De 1 p.m.	" " "

Connections at Northport with S.F. & N.R. to and from Spokane and way points; at Trail with C. & W. R. to and from Rossland, and with Str. "Nakusp" to and from Robson, Nakusp and Revelstoke.

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" " "	8 p.m. Ar KASLO	De 5.30 a.m.	" " "

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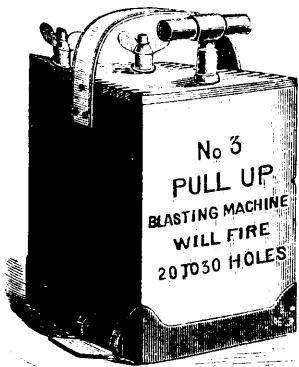
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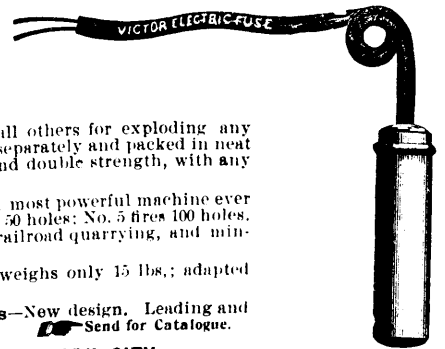
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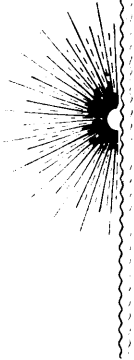
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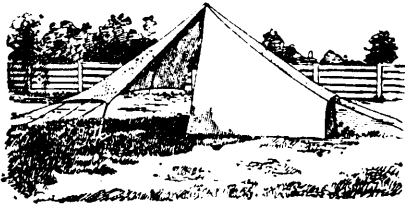
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